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THE STRATEGIC ROLE OF ELECTRONIC MEDICAL RECORDS "EMR" IN SUPPORTING ELECTRONIC HEALTH SYSTEM IN SAUDI HOSPITALS

Bader A. Alyoubi, Tagreed S. Alsulaimani,
MIS department, collage of Business, University of Jeddah, Jeddah, Saudi Arabia

Abstract:

The current era in which we live is characterized by an increase in information around us and an increase in our use of and reliance on this information in our daily lives. This is evident in the widespread growth in the adoption of the Internet and information technology as a method of contemporary management. Administrative processes of a paper-based nature to operations of an electronic nature by adopting technology in management. This means transferring documents and paper records in the organization to electronic documents. This is what is called electronic work or management without a leaf. So, the major objective of this work is to investigate the role of Electronic Medical Records"EMR" in enhancing the performance of medical administration in Saudi hospitals as well as describing the concept of electronic medical record and its importance as EMR now become the most secure and efficient technology that can eliminate traditional paper routines and transform them into efficient data efficiency with shortening time and space.After making such investigation and analysis, it is cocluded that the patient or recipient of the service from medical or clinic equipped with computerized electronic records "EMR" is preferred against the traditional clinics or clinics by 62%, while 44% of the patients believe that this is not important. In other statistics, patients' opinions were taken between two equal levels of abilities and experiences, one with computerized records and the other with paper records indicating that 79% of them chose the computer based on the traditional and the reason is the expected accuracy of this computing.

Key words: E-health, IOM, EMR, HER, CMR, Radiology, Clinical and Chronological

Corresponding author:
Bader A. Alyoubi, Ph.D
MIS Department,
Collage of Business, University of Jeddah,
Jeddah, Saudi Arabia
E-mail: balyoubi@uj.edu.sa & tsalsulimani@uj.edu.sa

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1.INTRODUCTION AND BACKGROUND:

Electronic health (E-health) is one of the modern forms of electronic management as Electronic medical records, services and information are provided to the patient through electronic means. Electronic medical records "EMR" are one of the best forms that focus on the process of providing health care in hospitals and different types of international medical organizations.Health care consumes an enormous amount of information that supports caregivers in decision-making processes. It is important that the information is complete, accurate and available at any time and anywhere to help us care for the patient, improve the quality of services provided and ensure patient and caregiver safety [1].

The eHealth Record has demonstrated its superiority over paper records in terms of cost, quality, data accuracy, security, privacy, availability, ease of communication and many of the features provided by our electronic record.Technical developments in health information systems have improved the quality of health services and reduced medical errors by using artificial intelligence in decision support systems that are an essential component of the electronic health record. A study was conducted to compare the decisions of physicians with the same practice and were divided into two groups. Using paper records, they found that the first group made more appropriate medical decisions than the other group, because the first group used many tools available in the EHR system, such as: warning the doctor to repeat the request for tests and alert about the conflict of drugs or The patient with the basic and other tools.EHR is an integrated record of patient health information that can share information within and between health care delivery centers. There are many EHR systems but vary in terms of functionality, capabilities and data quality [2].

The Institute of Medicine (IOM) has established eight core functions that enable EHR to function properly:Health data and information, Manage results, Management of medical applications, Supporting medical decisions, Connectivity and electronic communication, Patient support, Administrative processes and Reports and management of population health. These functions ensure the accuracy and quality of data, and improve the electronic communication between hospitals and patients. As well as processing the electronic health record with advanced tools that support patient care to avoid medical errors related to lack of information or lack of data. It is important that the EHP contains tools for the creation, collection and processing of reports to support processes and management decisions. These tools also promote public health in disease management, control of outbreaks and promotion of community health [3].

The electronic medical record is defined as an electronic file that includes medical, nursing and administrative information covering all aspects related to the patient's condition. This information usually includes symptoms, history, results of clinical and diagnostic tests, final diagnosis, condition, procedures, and medical, surgical and therapeutic interventions given to the patient. And the progress of the patient's condition and response to these interventions and treatments, as well as information for the definition of the patient.The importance of electronic medical record is attributed to its ability to:Reduce the cost of information systems, Provide clear clinical observations in a new way, support in making appropriate decisions for the quality of medicine given to the patient, Provide letters commemorating the dates of medicine and vaccines, and Management of chronic diseases such as diabetes, high blood pressure and heart failure.The major Electronic Medical Record Functions are summerizedin: Data and information storage and access, Results management for laboratories, Management of the request for entry, Electronic connection and connection, Patient support and Provide a report on the health management of the patient.

The main components of the electronic medical record include:-

- *Components of the administrative system:* These components include data and information for identification and evaluationPatient.
- *Components of the laboratory system:* The requests that the doctor to the laboratory to conduct the necessary tests for the patient.
- *Radiation therapy components:* Includes radiotherapy data related to the patient.
- *Components of the pharmacy system:* include the doctor's requests to the pharmacy.
- *Entry of an electronic application:* includes the electronic application coming from the pharmacy and radiotherapy services.
- *Clinical Documentation:* It contributes to the improvement of electronic documentation systems from important observations or reports related to the patient.

With regards to the stages of applying the electronic medical record, it is given as follows:-

- *Phase I:Automatic Medical Record (AMR):* The initial stage of computer use. At this stage, users are still relying on the paper record but are in the process of being configured to use the automated record.
- *Phase II:CMR*: At this stage the need for paper is completely eliminated.
- *Phase III:EMR*: The electronic medical record is implemented at this stage.

- *Stage IV:EPR*: This stage provides the validity of the communication equipment.
- *Stage V:HER*: At this stage the patient plays an important role, allowing him to enter his personal data.

For the obstacles to applying the electronic medical record, we assure that the electronic medical record system requires the provision of security and confidentiality to preserve information. Security and confidentiality are important elements in the management of this type of record. Vulnerability in security will result in unauthorized access to the registry and breach of confidential information about the patient [4].The most prominent risks that can face the electronic medical record are:-

- *Users' need for information:* one of the main challenges facing a process Systems development. Experience has shown that successful systems have been developed with the help of doctors and health care professionals. The convergence between the developers of these systems and between physicians and specialists provides a deeper understanding and understanding of what medical care needs in terms of the nature and characteristics of the information and how it is used.
- *Ease of use:* System developers must take several points in mind, the most important nature of doctors and their needs and the difference between them and computer professionals.
- *Standards:* It helps to increase accuracy and integration between different organizations and reduce the errors and costs and raise the value of scientific research and increase the integration of development efforts and investments.
- *Social and legal challenges:* The challenges related to the extent of privacy and security of electronic medical information, the easier access to this information the more important the establishment of more security and privacy rules governing the use of information and access to information.
- *Costs vs. Advantages:* The most important economic challenges to electronic medical records systems, the more characteristics and features required in return for the cost of production and provision, and it is necessary to reach a balance between them.

Finally, we confirm that patient medical records and accuracy are already the cornerstone of sound health care, which helps the doctor do his job better. It provides all the patient's medical information in an integrated and coordinated form.

In light of the tremendous growth in the quantity and quality of medical information and the diversity of its sources, this information is no longer merely verbal and descriptive texts or a paper record of the patient's condition or the development of his condition, but has become many forms of modern information and means of presentation. Patient data and medical information today include complex numbers of blood, hormone and enzyme analyzes, images, graphs, radiographs, class and magnetic imaging, endoscopy films and many more. The doctor is guided to the optimal selection to keep this data from loss and ability to Retrieval and display easily and accurately by the adoption of electronic record systems help him to make the right decision in the description of treatment or examination or surgery appropriate instead of being distracted by searching for hundreds of information lost from the patient, and also reduce the cost and time and effort Mad on the memory of the existence of a huge number of papers and files.

Just like any other record, transferring and saving patient records from files and folders to paper and material to computers with their super-storage capabilities provides great service to patients and medical service providers alike, as well as facilitating the task of health insurance companies. But raising the efficiency of the service provided is not the only benefit. For patients, getting good care with computerized satisfactory records becomes easier and safer. Where your doctor or therapist can quickly and easily obtain important information - such as blood type, prescribed drugs, medical conditions and other aspects of medical history. At the very least, electronic medical records (EMR) can provide waiting time and diagnosis at the doctor's office. While rapid access to records can save a patient's life in the event of an emergency God forbid when doctors need all information immediately to make their decisions [5].

The use of electronic medical records also saves costs. Not only in terms of the cost of folders, papers and files, but by providing labor cost and space. And do not forget the efficiency of rare users sometimes. In the case of electronic records simply can the operator a few strokes on the keys to retrieve the patient's record instead of staring at thousands of folders and research, not to mention the possibility of human error in the preservation of papers or examinations or images in the wrong file and cause a disaster for the patient and the doctor together.So, hospital or a clinic with electronic medical records means patients:-

- Higher efficiency of medical service in all stages
- Less waiting time in the clinic

- Higher accuracy in diagnosis and treatment plan
- Follow-up by the doctor to the patient's case with the most accurate details
- Reduce or minimize the possibility of human error in keeping sensitive medical information in the wrong file

The importance of the electronic medical record from being the cornerstone of any computerized health system is a central point in which many channels of information related to the provision of health care to the patient are distinguished and it is characterized by its accuracy and accessibility through its integration with various sources of information Systems of information networks which led. Its use is dependent on the evolution of the idea of decentralization and the continuity of information between more than one hospital and a medical institution.And even further away, the Internet has provided international communication between users of doctors and patients from different countries of the world and separated by thousands of miles and gathered together one information network.The importance of electronic medical record through:-

- Reduce the cost of information systems.

- Provide clear clinical observations in a new way.
- Support in taking appropriate decisions on the quality of the drug given to the patient.
- To provide reminders about the dates of medication and vaccines.
- Managing chronic diseases such as diabetes, high blood pressure and heart failure

2.BEST PRACTICES IN MANAGING ELECTRONIC MEDICAL RECORDS "EMR"

Looking at EMR EHR environments, the EMR environment is a sophisticated and sophisticated environment (see Fig.1) established by the CDR. Database Treatment of patient clinical information is for practitioners [10].The best practices in the management of electronic medical records depend directly on the implementation of many of the main tasks that are as follows:-

- ***Design electronic medical records to suit workflow, teams and individuals:***Do not make the system of medical records public, not designed for everyone, but designed the general parts to suit everyone, and designed the parts allocated to each team or individual commensurate with it.
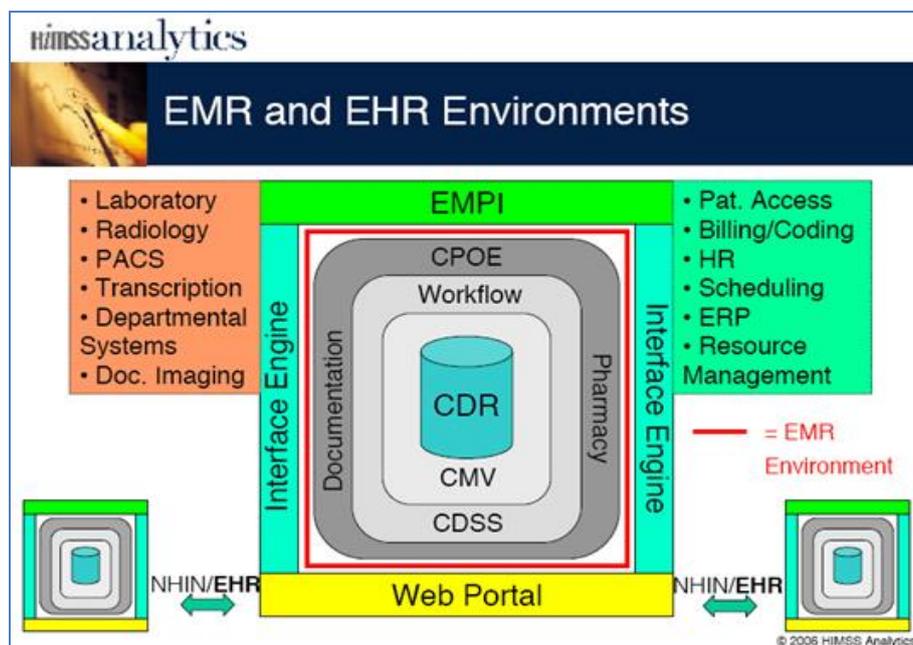

Fig.1 EMR EHR Environments [10]

- *Identify possible problems to avoid in the future:*Look for potential problems that can occur with increased data on the electronic medical records system. Take the views of stakeholders and ask them what they think about these potential problems, and then design the system to avoid these problems.
- *Train staff at every step:* Accurate data in the field of medicine is important to the patient, reputation and integrity of the hospital or medical center.
- *Train staff and staff on step-by-step:* electronic medical records and do not rush to train them to ensure quality in future data collection and management.
- *Set a training schedule and goal:* Schedule a training schedule so that the training is completed close to the application of the electronic medical records system, so that the crew will not forget what they have learned in the training if the training is completed long before the application.
- *Establish an environment for testing medical records:* such as any program or electronic system, electronic medical records are updated and new functions are added to those records. It is recommended to create a special environment to test these functions and innovations so as not to adversely affect the work flow and patient data.
- *Prepare a medical records workflow proportional to either a hospital or clinic:*The requirements for electronic medical records at a hospital are different from those of electronic records in a clinic, so make sure that electronic medical records are designed to suit your business progress.
- *Implement a system of electronic medical records in cooperation with experts:* We shall benefit from the advice and experience of others who have established electronic medical record systems in their hospitals or clinics, and will learn from their mistakes so as not to repeat them.

There are automated analysis programs that facilitate and streamline the process of analyzing data collected from patients and different sections within the hospital, clinic or medical center, and extracts many different reports and maintains those data [7]. These programs facilitate the collection and analysis of your organization's medical data, where you can evaluate training programs and employee satisfaction quickly and accurately. It will provide you with effective ways to collect and analyze data you deem important and useful to the success of your medical institution, whether it is a clinic, hospital or medical laboratory. Instead of reviewing and analyzing the traditional paper sample data you use to collectdata, all you need to do is scan it and

Remark will analyze its results and issue immediate reports to help you assess the overall performance of your organization and make sound development decisions based on accurate data.Programs such as **Remark Office** can be used to process and analyze paper form data. The software allows you to design and print your own templates without having to buy ready-made models. You can also use the Remark WebService web-based data processing program if we compile it online.

STRUCTURE OF "EMR" AND ITS MAJOR FUNCTIONS

The literature refers to the divergence of intellectual concepts to define a concept agreed upon by various researchers in the field of information technology. However, this variation did not extend to the real content of the electronic medical record concept, but limited the variation to formality.The electronic medical record is the electronic storage of information and its immediate availability to the authorized person who documents the information and reduces the medical errors, as well as the confidentiality of the patient's medical record and its privacy using integrated integrated systems as a point of care in the health care institution.

The electronic medical record is the most secure and efficient technology that ensures the elimination of traditional paper routines and the shift towards the efficient use of information technology with shortening of time and space. It can also be defined as a longitudinal electronic record of medical information about the patient generated during the patient's meeting with the doctor. (Notes, problems, medicines, medical history if the patient has a previous record, laboratory data, treatment reports), may be approved by the doctor in any hospital reviewed by the patient and the record is considered for electronic medical record as a legal document containing known T electronic patient which facilitates the work of members of the health care team, where this information remains confidential [8].

The electronic medical record is an information repository that includes all patient information and relies on the computer with all its advanced capabilities of storing information, processing and transferring data through information networks and modern means of communication. Through the following concepts, the researcher believes that the electronic medical record is an electronic file that contains medical, nursing and administrative information covering all aspects related to the patient's condition. This information usually includes the symptoms, the history of the disease, the results of the clinical and diagnostic tests, the final diagnosis and the condition of the disease. Medical and surgical procedures and interventions

given to the patient and the progress of the patient's condition and response to these interventions and treatments as well as the information of the definition of the patient, it is appropriate that each patient has a medical record of his own whether for the Aisyvy or outpatient or emergency department or any hospital in the world.The process of collecting information and data about patients is unjustified if both the doctor and the patient do not serve directly or indirectly. The electronic medical record is a basic pillar for maintaining a sophisticated medical service. The patient has a record of the health problems, tests and operations that have been performed before, Sensitivity to the patient, but it prepares for the students of the tools of continuing education, as he explains the developments of diseases and the experience of his colleagues doctors. Also, the electronic medical record is important for health planninglot ofPhenomena like: neonates / deaths / infertile diseases / frequent patients and their ages [9].

The EMR is considered to be the most important and reliable for calculating the rates of morbidity and mortality. With regard to the legal aspects such as medical reports, death certificates, criminal cases and accidents, against the medical record there is a lot of rights and the spread of health insurance, the electronic medical record becomes the most important among the beneficiaries and between the company and the treated hospital , But with many of the functions that benefited from the file or electronic medical record such as knowledge of the preventive aspects and information of health planning and training and medical treatment, statistics and research, as the kidney The British Government has the functions of electronic file or medical record:-

- Fixed record of important events.
- Record of legal medical problems.
- A way to help your colleagues, doctors and technicians, with your patients in the hospitals and clinics.
- A warehouse to preserve the results of the patient's tests and reports.
- Record of medicines used by the patient.
- Regulate the content of records

The functions of the electronic medical record include the following:-

- Reliable and safe access to patient information when needed so that it can be traded remotely.
- Acquiring information and management in the form of effective , in particular, so as to facilitate the efficient entry and reliability of all applications.
- Provides full information about the patient (date of entry, date of exit, what suffers, method of treatment, calculations).

- Monitoring the patient's condition and making the adjustments automatically, for example, such as giving the correct medicine at the right time, the treatment of the patient if the patient suffers from chronic disease
- Storage and access to data and information.
- Managing results for laboratories.
- Management of the application for entry.
- Electronic connection and connection.
- Patient support.
- Provide a report on the patient's health management

The application of the fully integrated electronic medical record and the practice of system management will provide a single, integrated database designed to meet the needs of physicians to provide them with the necessary information. Each medical record includes accurate information that characterizes the patient, supports diagnosis, justifies treatment, documents treatment and promotes continued patient care.The electronic medical record contains a complete statement of the medical history of the person, the land he was injured, the methods of treatment he received as well as the drugs prescribed for him, and focuses on the medical phenomena that may affect the health of the person in the future and thus the electronic medical record consists of basic data in the first The record includes three records or Sections, and include chronological order of data. Also, the components of the electronic medical record include all the personal medical information relating to the patient, as they are entered electronically (name, date of birth, age ... etc), and then the patient access to clinical treatment and the results and documents manufactured to specialized units of laboratory or radiography and then documenting results [11].

Generally speaking, the main components of the electronic medical record include:-

- ***Administrative System Components:*** These components include data and information to identify and evaluate the patient.
- ***Components of the laboratory system:*** The requests that the doctor to the laboratory to conduct tests necessary for the patient.
- ***Radiology components:*** Includes patient radiotherapy data.
- ***Ingredients of the pharmacy system:*** Requests of the doctor to the pharmacy.
- ***Entry of an electronic application***: containing the electronic application coming from the pharmacy and radiotherapy services.
- ***Clinical Documentation:*** It contributes to the improvement of electronic documentation systems from important observations or reports related to the patient

In the end, the researcher believes that the components of the electronic medical record consist of the patient registration office and all the medical departments that include all the consultations as well as the technical departments that include (laboratory, pharmacy, radiology, sonar) and statistical reports, as the treatment is periodic and continuous to serve the patient.

3.MAJOR OBSTACLES IN APPLYING ELECTRONIC MEDICAL RECORD

The electronic medical record system requires the provision of security and confidentiality to preserve information. Security and confidentiality are important elements in the management of this type of record. Vulnerability in security will lead to the arrival of the authorized person and breach of confidential information about the patient.The most prominent risks that can face the electronic medical record are as follows [12]:-

- *The need for users to provide information:* One of the main challenges facing the process of systems development. Experience has shown that successful systems have been developed with the help of doctors and health care professionals, providing a closer understanding between the developers of these systems and between doctors and specialists. Medical care regarding the nature and characteristics of the information and how it is used.

- *Ease of use:* System developers must take several points in mind, the most important nature of doctors and their needs and the difference between them and computer professionals

- *Standards:* It helps to increase accuracy and integration between different organizations and reduce the errors and costs and raise the value of scientific research and increase the integration of development efforts and investments

- *Social and legal challenges:* These are challenges related to the specificity and security of electronic medical information. The more accessible the information is, the greater the importance of establishing more security and privacy rules governing the use of and access to information.

- *Cost versus allocation:* The most important economic challenges to electronic medical record systems are the increased the required properties and milestones, while increasing the costs of producing and providing them, and it is necessary to reach an appropriate balance between them

- The lack of standard clinical entry log.

- Lack of technical knowledge and computer knowledge by employees.
- Resistance to change by many health care providers.
- High cost of computers and systems.
- Lack of data processing tools.
- Concerned processors for information available on request.
- Lack of knowledge of staff classification systems related to the patient.
- Access to the quality of electronic health care information.
- Some aspects related to the surrounding environment.

The researcher believes that the most important risk of applying the electronic medical record system is the lack of knowledge of medical staff using technology as well as the need to backup the system continuously, and the electronic medical record system needs the security and confidentiality of high patient information, as well as the rapid and sudden change in the traditional system To the electronic system is a major obstacle.

Understanding the level of EMR capabilities in hospitals is a real challenge for the IT market. For this reason, the American Society for Health Information Management Systems (EMMS) has established analyzes of the EMR model that defines the levels and capabilities of the EMR, which range from the primary CDR environment to the components of the electronic medical record. The American Society has developed a methodology and algorithms to automatically record about 4,000 hospitals in its database for the purpose of enabling the IT sector in the field of health care from clinical cases and study them [10].

- Stage 0: At this stage, it is not necessary to install or activate all components of the electronic medical record, most notably supporting medical services (including medical analysis laboratory, radiology department, pharmaceutical services, etc.).
- Stage 1: At this stage, the supporting medical services are installed in order to obtain the second part of the patient's medical file.
- Phase 2: This stage is considered to be somewhat advanced, where the various Easter machines and medical diagnosis are linked to the patient's medical file, thus obtaining an important and sensitive data store.
- Stage 3: At this stage nursing notes are introduced, daily clinical follow-ups of the patients file.
- Stage 4: The use of doctors for various types of admission methods and issuing medical orders for the patient, has been followed up.

The nature and content of each stage can be understood through Fig.2.

Fig.2 EMR Adoption model [10]

1. ELECTRONIC MEDICAL RECORD IN SAUDI HOSPITALS

There is an expansion in the use of the electronic health record in the developed countries, where the joint data is defined in certain lists based on scientific studies in importance, with the development of mechanisms for handling, transfer, collection, updating and storage, noting that the most important contributions to the adoption of the joint electronic record of patients include starting in terms of As well as the quality of the provision of health care through the availability of data, instantaneous and permanent with the possibility of retrieval at any moment are requested from the authorized only, as well as the lack of duplication in the repetition of tests, especially in which the exposure of The patient should not be constantly exposed to the patient, as well as the ability to compare service providers' comments from doctors, nurses, pharmacists, and others. This allows the patient to avoid several symptoms that may worsen his condition and the speed of access to the decision during the visit, Health decision, where the choice of drugs and the necessary tests without fear of any negative impact on the patient, and finally the accuracy of data recorded and shared between the health facilities if the patient is reluctant to several facilities to access health services [6].

Among these benefits, the results and the patient's other health instructions provide the patient with a file that can be viewed whenever he wishes, which makes him able to follow up on his illness. He continues to avoid what can affect him healthily, and has constant contact with the doctor. Or regional, any groups or communities that are more susceptible to food type, temperature, weather condition, satisfactory infection or treatment, or other conditions that can be used in the development of health plans can be identified properly, The development of applications or

packages of software to achieve the performance of the program is more useful for the patient and the doctor and other interested in health, which helps to reduce the cost to the patient with a database of the service provider provides a lot of expenses, stressing that scientific studies for more than ten years indicate that the safety of patients increased after the use of the electronic medical record in the facilities "The delay in implementation is the biggest concern, as it widens the gap between us and the rest of the world, especially as we want to exchange data and participate in it not locally, but across continents to serve the Saudi individual wherever he goes.

The electronic medical file provides a qualitative leap in the efficiency and speed of providing the patient's health service and in the development of the health system in general and reducing the total cost of health services, adding that the features offered by the system to health practitioners such as the doctor or nursing staff and other health service providers, Medical devices through the computers at any time and from any place, as well as easy to document and save and then retrieval of patient data and the results of laboratory studies and radiation, with the possibility of exchanging medical information with other health institutions electronically, indicating that it represents programmatically Supporting current health decisions is an important source of access for the doctor when needed. The protocols of treatment and follow-up of patients with chronic or serious illness are made easier and more accurate by monitoring vital indicators and alerting the health practitioner in the event of malfunction [6]. The opportunity to restructure and streamline operational procedures for patient service by automating routine steps and reducing sluggish steps to perform and perform business, increasing the efficiency of work within the organization and providing faster and more comprehensive service to the patient.

A new strategy has been adopted for the joint e-health project for the security and confidentiality of information exchanged and content control and its presentation, linking and exchange of information between different systems by standard standards, to provide health care based on up-to-date and up-to-date information, As well as reduce the errors of files and medical documents, and contribute to reducing paperwork, and improve the ability to detect early diseases and injuries, adding that the project is currently going through the operational and experimental stage, from the introduction of basic information And the second phase of the addition of analysis and radiation and related thereto, stressing that this national project has been dealt with specific procedures and clear in its implementation, taking into account the infrastructure of some hospitals.

On the challenges and difficulties faced by the project, the most important of which is the multiplicity of providers of health services and their independence in their budgets, whether in the direction of the joint registry or all the medical services provided in their facilities, as well as the changing departments and the frequent leadership, adding that despite the hard work of the Saudi Health Council, Program management needs material support for motivation, as well as the development of a strategy behind which Saudi specialists of both sexes follow the progress of work on a daily basis to move towards the goal of international standard and then temporarily national later [6].

The difficulties are in not accepting the employees of the health institution for the comprehensive and major change brought by the electronic system in the method and tools of the performance of daily work. The transition from the paper environment to the electronic environment is a great move that requires a lot of training and training for the staff to facilitate and accelerate the transition through the transition Harming the patient or health practitioner and the health establishment, stressing the need for a professional change management able to make a difference through the implementation of the steps necessary to create users of this system; to support the use of this system and the transition from hand work Yeh and paper to modern high quality and the cost of technical methods balanced process.

Fewer scientists and researchers differ on the feasibility of a complete transformation of electronic medical records due to the different sizes of health facilities and the variety of services provided, the size of the sample, the number of patients, the duration of the study and other factors. Cost is a very important factor in the continued delivery of high quality service, indicating that the number and types of medical examinations and treatment methods and different human capabilities provided for service, as well as follow-up

modernization of the devices and means used to provide the best services luxury of the cost of service, and here must be controlled and accountability, or can be dispensed with alternatives good and inexpensive and does not take long, saying that the adoption of the installation of a system of electronic medical records must be subject to careful study before it is installed and run for the possibility of large sums of money without recording any The private sector in this regard - may - may submit but does not share with the regulators or supervisors information accurately, such as the Health Council and the Council of Guarantee and the Ministry of Health, stressing the importance of taking some decisive action to prepare health reports more accurately for health planning to be covered in detail.The Saudi Red Crescent will not maintain any data, but will rely on the mechanism followed by the aforementioned authorities, as well as on the exchange of data and participation in the transfer of the emergency situation, and therefore the benefit here at the service level in maintaining the lives of the injured until they reach the facility [6].

2.THE PROGRAMMING LANGUAGES AND TOOLS USED IN BUILDING "EMR"

The following programming tools and languages are used to build the EMR system [13-15]:-

- *APACHE;* is a multi-platform application that converts your computer as a host to run your PHP-programmed software. The benefit of a personal server is the ability to install any of your programs. This is done without connecting to the Internet. It converts your computer as an internal network or localhost.

- *PHP (Hypertext Processor);*PHP supports a large number of databases, including MySQL, Oracle and DBM, and can be used to produce a stand-alone web-related bug, which is a choice to be run with APACHE and can be read and implemented by the server.

- *MySQL* is a term on which relational databases have easy access to the data stored in them, the speed of completion of different query operations, and the addition of other features, this type is the most used in all applications, whether used in the Internet or special programmatic nature

- *HTML (Hypertext Markup Language)* is one of the basic languages for web developers but it is a second language, as the interactive feature has a user interface in itself but can beconceted with PHP.

- *CSS (Cascading Style Sheets):* The CSS gives the Web designer the freedom to change the formats of fonts and objects with their own coded links. The Cascading Style Sheets can be used to create separate files on HTML files.The designer can create many

HTML files with only one file that contains a specific format applied to all files and any change to the CSS file to be implemented on the files.

- *Adobe Photoshop* is one of the most famous software programs (Adobe's famous software), the most common software to use, because of its unique capabilities. This program can add features, aesthetic touches and image processing.
- *FrontPage:* It is one of the most important programs to be used in the creation of Web pages because of its ease of dealing in addition to its capabilities, which is within the Microsoft Office and depends on the language of HTML

The entire system is based on the International Network of Informatics or Internet, the English and Arabic languages, including the language of the teacher in the library or the number. The data are based on basic basic data and can be challenged. The main components of the proposed system are:-

- *Registration Office:* This is the first unit to deal with the patient when he enters the hospital. The office searches for the patient to check if he has been registered with the patient or not, and the patient is not satisfied with the patient's condition, and if the patient is suffering from the disease, To register the personal data, please enter the personal data in full.
- *Consultants:* This unit receives patients transferred from the registration office where the names of the patients appear and pressure pressure on the patient's name or number shows all the patient's visits to the hospital departments. The patient is stressed on any visit that shows all the special indications. The patient can also be referred to various diagnostic sites such as laboratories Or radiology sections, as the system contains the bottom of the chiemel diagram of all the examination sites in the hospitals and all the testswhich are performed in each of them. After the results of the tests, the doctor diagnoses the condition and makes the appropriate decision, such as the treatment, the patient's conversion to another consultation, or the patient being transferred outside the hospital, both nationally and internationally.
- *Laboratory System:* This is the case for patients with the following medical conditions:
And referrals from the consultant, showing a list of patients' embalmed ultrasound and pressure. The name of the patient shows the analysis required for him and with each

analysis of the location and history of the patient and doctorfor analysis.

- *The Radiology System:* The system deals with the patients required to perform radiations for the donor cells of the concubine. A list of patients is shown. The pressure of the patient's name must be shown with all the radiation of the place and date of the request and the doctor requesting the radiation.
- *The pharmacy system:* The system is to deal with the drugs that are given to the patients, as the type of medicine is chosen and know if it is in the pharmacy or not.
- The sonar system: This is the system for the treatment of patients who are infected with ejaculation.In the form of a list of the patients' names,The patient's name shows the desired sonar and then returns the result to the concerned party.

2 CONCLUSION AND RECOMMENDATIONS

With the increasing number of hospitals using the electronic health file and the need for a national patient information exchange system - between health centers and related state institutions - the need to control and develop laws and foundations for this national e-health system will be increased. In addition, the health practitioner, researcher in pathology, genetics, medicine and specialist in the quality of health services provided and others will need reliable information and health information. In order for his research and information to be based on sound scientific grounds, the health database must be reliable: it must be exchanged through secure electronic systems [16, 17]. The presence of unsafe systems may expose patients' information to hacking, modifying, deleting or adding unauthorized persons. This may affect the quality and delivery of health services in hospitals and medical centers.

Patient information is used to draw strategies and plans for future health - financial and other matters. The researcher relies on the development of his plans on medical information such as the number of surgeries in the dental clinics and the quality of drugs given to patients who have been diagnosed with a particular disease and the amount and names of vaccines used in the winter and other things and health statistics. All this is done to prepare for health needs - medicines and others - in hospitals and health centers.

Through the above sections, the main conclusions that can be recorded are:-

- The concept of e-management is a broad concept that includes several different electronic systems and their transformationWide changes are required from the Organization's structure to work processes.

- The medical record forms can provide a medical summary that enables patient follow-up and storage and retrieve it when needed.
- The integration of electronic records and information systems of hospitals is a major component of modern knowledge.Health care and help the doctor to do his job better so that he can provide medical information for each patient in an integrated and coordinated manner.
- Security and confidentiality are an important element in the management of electronic medical records.
- The need to keep patient records in a realistic and central condition in the care of medical devices and authorized physicians to access it to protect the registry and ensure its confidentiality.
- The electronic medical record system includes high flexibility in terms of the possibility of adding other dimensions, that is to say, enabling the expansion of activities that can be supported by these systems. and its future expansions
- The electronic medical record management system is easy to use, and does not involve any kind of benefit experience or knowledge of any of the programming languages used

As for the recommendations, the researcher will present a number of proposals that serve the study and hope that it will contribute in helping the research organization towards the proper accreditation of the electronic medical record system agencies:-

- Start the implementation of the electronic medical record system and ensure that the system is fully integrated and helps to eliminate the duplication of data entry regardless of the location of the data storage.
- Strengthen strategic vision for the development of comprehensive and long-term planning for the establishment of an integrated electronic tourism system on a level-to-country basis for the exchange of information between hospitals, health centers, national and international health centers and the adoption of a unified health number.
- The objectives of the training programs in applying the systems of electronic medical records for all employees. In the hospital in question, and focus on the sustainability of these diseases, and raise their levels by technological developments and changes.
- Computer peripherals for all parts of the machine that are equipped with or equipped with these devices.And in great numbers and specifications, to the extent that it is possible

- to achieve a sufficient level of quality, and time spent
- Use knowledge base systems and expert systems in the fields of management and medical   management

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