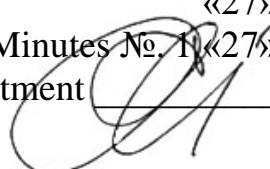


Ministry of Public Health of Ukraine
“Ukrainian Medical Stomatological Academy”

“APPROVED”
at the meeting of the Department
of Medical Informatics, Medical Biophysics
«27» august 2020
Minutes № 1 «27» august 2020
Head of department  O.V.Silkova

METHODICAL GUIDANCE

for students’ self-directed work when preparing and during the practical session

Academic Subject	Medical Information Science
Module No 2	Medical knowledge and decision making in medicine and dentistry
Topic	Individual medical cards. Structuration of the maintenance of electronic medical cards. Information resources of health care system.
Year of study	2
Speciality	Foreign Student Training (Dentistry)
Number of academic hours	2

1. Relevance of the topic:

The use of electronic health records that can securely transmit patient data among physicians will help coordinate the care of 60 million Americans with multiple chronic conditions. This article summarizes the different organizations in the United States that are developing this technology. It discusses some of the problems encountered and the current initiatives to resolve them. The article concludes with three recommendations for enhancing care coordination: a common health record, such as the Continuity of Care Record, to facilitate the exchange of clinical information among health providers; regional governance structures to encourage the exchange of clinical data; and payment by purchasers of care, both public and private, to physicians for using electronic health records.

2. The specific aims:

- To know patient data regulations;
- To know patient data methods of storage;
- To have general knowledge of topic studied;
- To understand, to remember and to use the knowledge received;
- To form the professional experience by reviewing, training and authorizing it;
- To able to carry out laboratory and experimental work.

3. Basic knowledge and skills necessary to study the topic (inter-disciplinary integration).

Previous (providing disciplines)	Obtainable skills
Previous (providing disciplines): Mathematics, biology, physics, computer science bases.	Elementary knowledge on biology; Elementary knowledge on mathematical statistics; Elementary knowledge on electronic signals.
The subsequent disciplines: Computer science bases, DBMS bases, IMS/IRS bases, telemedicine features.	To define concept of electronic health record; To know and compare advantages, problems and disadvantages; To explain governance, privacy and legal issues of EPR use.

4. The tasks for students' individual work

4.1. The list of basic term, parameters, characteristics, which student should master while preparin for the class.

Term	Definition
EMR / EHR	EMR (Electronic Medical Record)/ EHR (Electronic Health Record) provide an effective way to solve the problem of managing clinical data.
Electronic Medical Recording	All the data in a doctor's office is usually collected in the form of charts and forms on papers.
A systematic review	A literature review focused on a research question that tries to identify, appraise, select and synthesize all high quality research evidence relevant to that question.
The Cochrane Collaboration	An international and independent non-profit organisation established in 1993 aimed at producing up-to-date, accurate information about the effects of healthcare available worldwide.

4.2 Theoretical questions for the class (to the topic):

1. What is EPR (EMR, HER)?
2. Features of EPRs.

3. Way of EHRs.
4. Advantages of EPR use.
5. Disdvantages of EPR use.
6. Privacy concerns.
7. Long-term preservation and storage of records.

4.3 Practical tasks pertaining to the topic and to be completed during the class:

Test

1. WHAT SECURITY COMPONENTS DO YOU KNOW?
 - a) Confidentiality, Integrity, Availability and Accountability
 - b) Right answer not present
 - c) Confidentiality and Integrity
 - d) Integrity, Availability and Accountability
 - e) Confidentiality, Integrity and Availability
2. HOW DO YOU UNDERSTAND TERM “CONFIDENTIALITY”?
 - a) It is the property that data or information is not made available or disclosed to unauthorized persons or processes.
 - b) It is the property that data or information have not been altered or destroyed in an unauthorized manner.
 - c) It is the property that data or information is accessible and useable upon demand by an authorized person.
 - d) It is the ability to audit the actions of all parties and processes which interact with the information and to determine if the actions are appropriate
 - e) All listed answers are right.
3. HOW DO YOU UNDERSTAND TERM “INTEGRITY”?
 - a) It is the property that data or information is not made available or disclosed to unauthorized persons or processes.
 - b) It is the property that data or information have not been altered or destroyed in an unauthorized manner.
 - c) It is the property that data or information is accessible and useable upon demand by an authorized person.
 - d) It is the ability to audit the actions of all parties and processes which interact with the information and to determine if the actions are appropriate
 - e) Right answer not present.
4. HOW DO YOU UNDERSTAND TERM “AVAILABILITY”?
 - a) It is the property that data or information is not made available or disclosed to unauthorized persons or processes.
 - b) It is the property that data or information have not been altered or destroyed in an unauthorized manner.
 - c) It is the property that data or information is accessible and useable upon demand by an authorized person.
 - d) It is the ability to audit the actions of all parties and processes which interact with the information and to determine if the actions are appropriate
 - e) All listed answers are right.
5. HOW DO YOU UNDERSTAND TERM “ACCOUNTABILITY”?
 - a) It is the property that data or information is not made available or disclosed to unauthorized persons or processes.
 - b) It is the property that data or information have not been altered or destroyed in an

unauthorized manner.

c) It is the property that data or information is accessible and useable upon demand by an authorized person.

d) It is the ability to audit the actions of all parties and processes which interact with the information and to determine if the actions are appropriate.

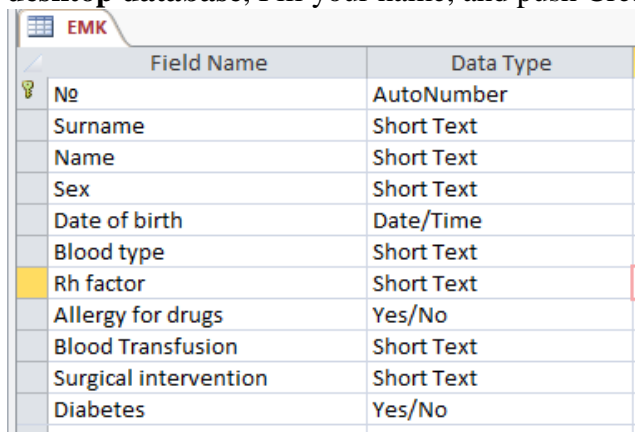
e) Right answer not present.

Practical work:

Individual medical cards. Structuration of the maintenance of electronic medical cards

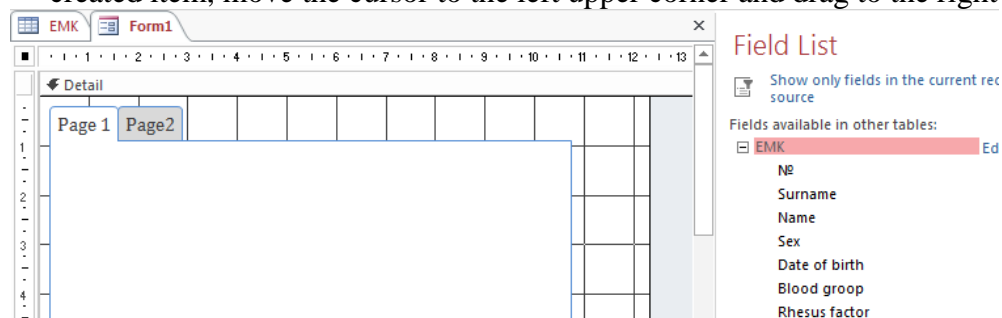
Create an electronic medical card using MS Access.

1. Create an Electronic Medical Card database, "EMC". (Download Ms Access, choose **Blank desktop database**, Fill your name, and push Create, Choose **View – Design view**).



Field Name	Data Type
No	AutoNumber
Surname	Short Text
Name	Short Text
Sex	Short Text
Date of birth	Date/Time
Blood type	Short Text
Rh factor	Short Text
Allergy for drugs	Yes/No
Blood Transfusion	Short Text
Surgical intervention	Short Text
Diabetes	Yes/No

2. Fill in the "EMC" table with patient information (enter data about your group members, choose **View – Datasheet View**).
3. Create an EMC (choose **Create – Form design**). Add fields from to the EMC table you must click: Tools, **Add existing fields – All tables** (Choose your table).
4. In the Controls, select the **Tab control**, and then click on the shape itself. To move the created item, move the cursor to the left upper corner and drag to the right place.



5. To rename the Page 1 , you must click on its name in the **Property Sheet** (All-Name), and enter the name of the *General tab*. Similarly rename Page 2 in *Additional Information*.
6. Drag from the list of fields to the *General tab* and place the *Surname* and *Name* at the top of the field.
7. In the Controls choose **Line** and put it on the General tab, like showing on the picture.
8. In the list, drag the *Sex* and *Birth Date* tab.

9. Using the Line and Rectangle elements, make a second tab.
10. In the upper right corner, place a *Combo box* from *Controls* item that will display the Blood Type field. For this:
 - Select the **Combo box** with a list in the items panel and click on the place where it is placed on the form;
 - In the dialog that appears, select the item *I will type...*, press Next, in the first row of the column we will write the first blood group - A, below B, then AB and O. Press Next. Choose *Store hat value in field*, choose the field Blood type and put the name Blood type.
11. To view the result of the created form, in the main menu, perform the command *View/Form view*.
12. Go back to Designer view. Similarly, place elements Rh-factor that has a value of +/-.
13. Drag the Allergy to drugs field in the lower left corner, Blood transfusion and Surgical interventions - in the upper right corner, and place a box of sugar diabetes in the rectangle.

Content of the topic:

Introduction

Let us examine a scenario that is repeated far too often. Our friend Bingo is ill and needs to get a checkup done. He steps into a physician's clinic and this becomes his first encounter. He fills in his Demographic information - his basic information like Name, Address, Insurance Details, Symptoms, and Allergies etc. All this information is physically put into a paper chart, clipped and sent to the doctor for review. The doctor treats Bingo and asks him to perform a few tests and asks to see him again in few days. The doctor now clips his own notes to Bingo's chart along with notes on the tests he recommends, symptoms; diagnosis etc. From here on Bingo's file is in the process of settling into the physician's office for a very long time. Every time any information about Bingo is received, it's stored in that file making it "Healthy". What results after a few short years is a common scenario in offices that do not manage records electronically; floor-to-ceiling paper stacks containing important data, misplaced files, lost files and time consuming searches. The paper stacks become too large at one point to become practical, most sites end up hiring additional staff just to manage these paper stacks.

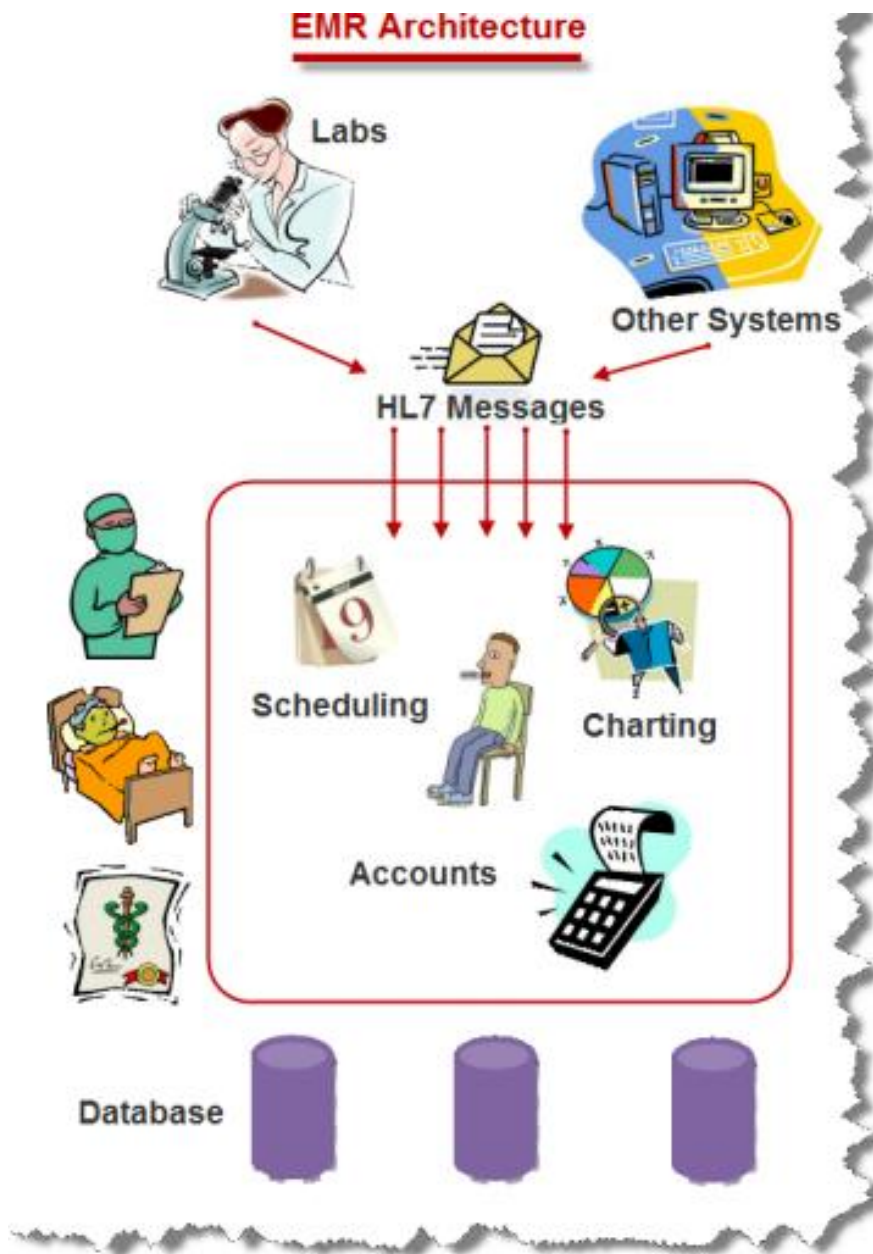
EMR (Electronic Medical Record)/ EHR (Electronic Health Record) provide an effective way to solve the problem of managing clinical data. EMR has in fact been playing a minor role in the industry for many years but has yet to be implemented successfully end-to-end because of the many hurdles it has faced such as privacy concerns, cost and simply the lack of technology. In recent years a lot of progress has been made in terms of legislation, technology and innovation in information technology all of which has helped clear out some of these hurdles. With recent advances in IT; intelligent software, advanced processors, high-speed networks and seemingly limitless storage capacities have all revolutionized the industry. Add to that excellent data processing tools and we have a whole different dimension on how we extract and use meaningful data.

It is very crucial to understand every little pixel of the portrait; this thesis will try to touch as many parts as possible with details that makes the EHR/EMR healthcare effort successful. The

thesis takes a close look at the advantages, disadvantages and hurdles of EMR/EHR as well as explains the overall working of EMR/EHR with respect to government standards of privacy and security. The thesis will also look at a few of the EMR/ EHR market players and the different services they offer. The next part of the thesis will explore Datawarehousing concepts which are an important topic in the technology behind EMR/EHR. Datawarehousing plays a very significant role in storing, maintaining and using the enormous volumes of data involved. As part of explaining these concepts a mini EMR/EHR Datawarehouse is designed and the concepts of E.T.L (Extraction Transformation Loading) schemas and clinical data mining subject areas are explored. The latter part of the thesis will look at EMR/EHR Benefits & Challenges and will try to speculate the future of EMR/EHR.

What is Electronic Medical Records (EMR)?

Electronic Medical Recording – All the data in a doctor's office is usually collected in the form of charts and forms on papers. Using the paper record creates piles of papers and it is difficult to manage and utilize these records. Electronic Medical Record is the term given to medical record of patients collected in electronic format. Electronic records are easily portable and accessible anytime and from anywhere. It is easy to transfer electronic records to several different entities at a time. With the extensive growth in technology it is now possible to maintain the data in electronic format and this electronic data can be utilized for analysis of business, patient care, and physician performance and for various other researches. EMR/ EHR is a step towards a world of healthcare where all the processes related to clinical data will be automated and well structured. This will help patients to get better health care, physicians to get timely information and thus improving the overall medical system. Due to its many advantages, EMR is the new wave of this generation and is getting the most attention in the world. Fig 3 is small workflow diagram which describes the concept of EMR. [Fig. 3 – EMR Architecture] Some important terms that are associated with the healthcare domain which an EMR/EHR system should have are privacy and security of the patient's sensitive information. HIPAA rules comes into picture which deals with privacy and security of electronic healthcare data.



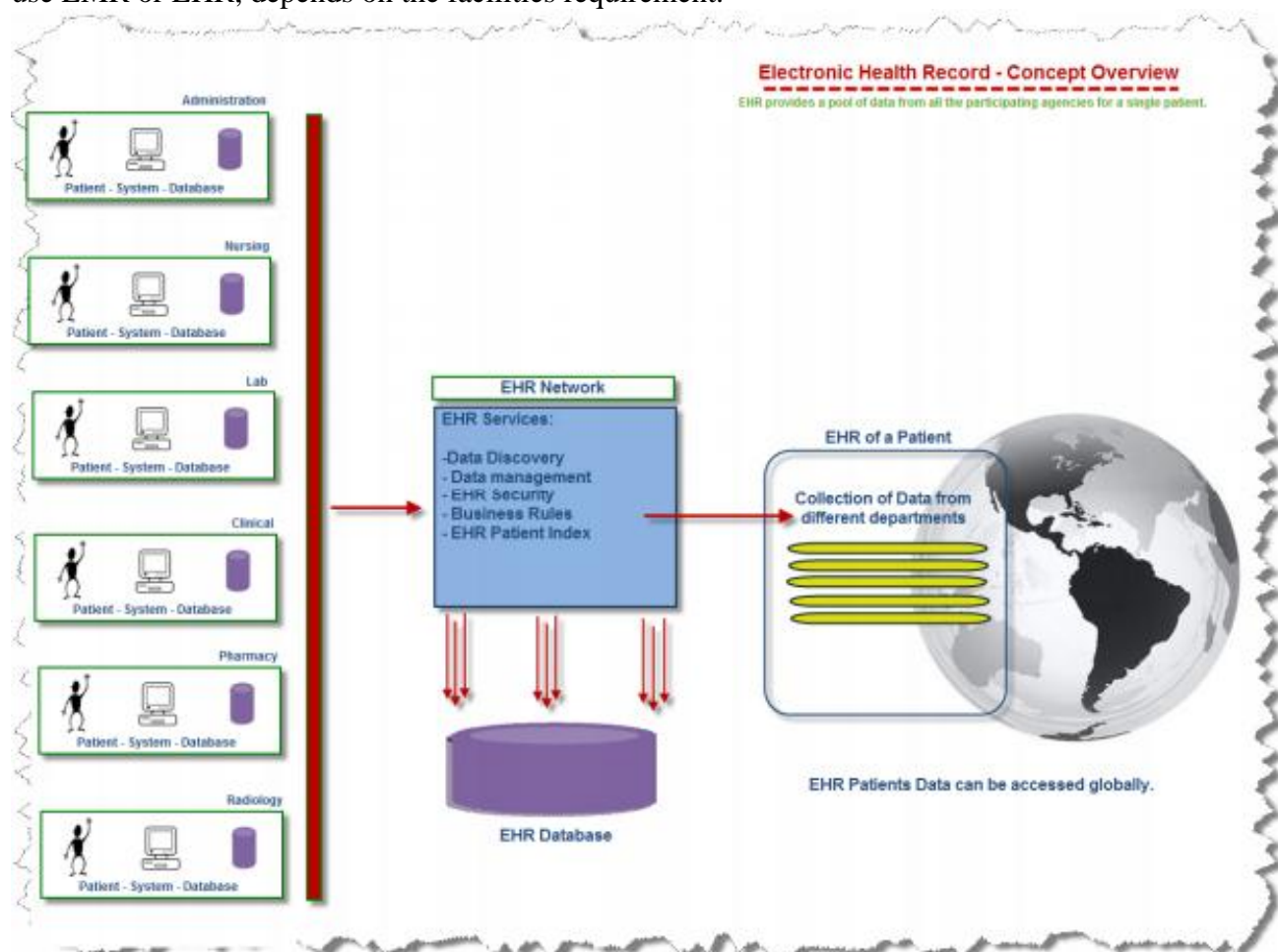
[Fig. 3 – EMR Architecture]

One of the main reasons the world is moving towards EMR and documenting everything digitally is to have a unified information pool. This pool will carry every bit of information related to the health care. Interoperability is one of the major hurdles in forming this pool and automating the process of healthcare. But with advancements in technology and understanding of standards, this is very much reachable although difficult. "A patient record system is a type of clinical information system, which is dedicated to collecting, storing, manipulating, and making available clinical information important to the delivery of patient care. The central focus of such systems is clinical data and not financial or billing information. Such systems may be limited in their scope to a single area of clinical information (e.g., dedicated to laboratory data), or they may be comprehensive and cover virtually every facet of clinical information pertinent to patient care (e.g., computer-based patient record systems)."

EMR – EPR – HER

Electronic Medical Record is a term that is mostly used in US Healthcare. But in UK healthcare, Electronic Patient Record is widely used. EMR and EPR are interchangeable. NHS (National Health Service) has given a definition of EPR for the UK healthcare which is: "An electronic record of periodic health care of a single individual, provided mainly by one institution". This makes it more patient specific. Often Electronic Medical Records and Electronic Health

Records are used in the same way. But there is a difference between Electronic Medical Records and Electronic Health Records. NAHIT – National Alliance for Health Information Technology has described the basic difference in EMR and EHR. “EMR: The electronic record of health-related information of an individual that is created, gathered, managed, and consulted by licensed clinicians and staff from a single organization who are involved in the individual’s health and care. EHR: The aggregate electronic record of health-related information of an individual that is created and gathered cumulatively across more than one health care organization and is managed and consulted by licensed clinicians and staff involved in the individual’s health and care.” To make it simple, EHR is a bigger umbrella and EMR is a part of it. If we look at the bigger picture of American Healthcare then we are talking about EHR where every patient’s record and its history from all the possible systems are consolidated in a pool. This information includes patient’s demographics, progress notes, immunization, lab data, reports etc. Hence it’s a comprehensive view of patient’s information. EMR also constitutes the collaboration of data from different entities like patients information, labs data for the patients and other clinical data information related to the patient. But in case of EMR this data has boundaries that are limited to a single practitioner or single hospital facility. It will be a drastic improvement in diagnosis of any disease and retrieval of patient’s record across the globe. EHR will help in many departments of healthcare. Hence it can be concluded that an EMR with interoperability can be considered as an EHR. EHR will provide a wider angle to the patient’s information as it’s getting its data from many other systems where patient’s information is stored hence providing clinical decisions and to analyze health related maintenance requirements. This helps the physicians to measure the quality standards and reports in order to get the pay for performance incentives. But in the market EMR is the term which is used in a more popular way. Even most of the Clinical Record Systems companies market their products as EMR product. But to use EMR or EHR, depends on the facilities requirement.



[Fig. 4] – Electronic Health Record - Overview

EMR	EHR
<ul style="list-style-type: none"> • It's the record and responsibility of the care delivery organization. For example if a patient visits a Physician clinic then that physicians EMR system will be the one responsible for its records and it will be property of that Physicians Clinic. • The patient can access the information but cannot change it. • Patients encounter information is present in the facility. • It does not contain any information from other facility. 	<ul style="list-style-type: none"> • The record is owned by either the patient or the stakeholder. • This is interactive and gives the ability to the patient to change its information very easily. • Patients encounter information from all the facilities are being combined and are present in a pool. • EHR is connected to National Health Information Record (NHIN) • To achieve EHR, EMR should be active in any facility. EMR is the first step to achieve EHR.

EMR Adoption – Path to EHR

Considering the US Healthcare challenges and the awareness of EMR in healthcare industry, Healthcare Information Management Systems and Society (HIMSS) has come out with a seven stage model and have studied different hospitals at every stage. They have considered about 4000 US hospitals present in their database to come out with this analysis.

The statistics of this model states that:

- Around 11% of the hospitals are at stage 0 which means that the key ancillary departments like laboratory, radiology or pharmacy are not installed in these hospitals.
- About 6.8% of hospitals are at stage 1 which means that the key ancillaries are installed in the hospitals.
- Around 16% of the hospitals are at stage 2 which means major systems store and access the data from their clinical data repository. The hospital is at HIE (Health Information Exchange) stage where it can share its information with other patient care stakeholders.
- Around 50% hospitals are at stage 3. Meaning that documents like vital signs and flow sheets are at place. The first level of clinical decision support is at place to conduct error checking. Some level of Medical Image access from PACS (Picture Archive and Communication System) is available for the access to the physicians outside the radiology department.
- Around 7.7%-9.7% hospitals are at stage 4 which mean that CPOE (Computerized Practitioner Order Entry) is added to the nursing and error checking related to evidence based medical records is at place.
- Around 4% hospitals are at stage 5 which means the closed loop medication administration environment is fully at its place. The Electronic Medication Administration Record (eMAR) and bar coding or other auto identification technology, such as radio frequency identification (RFID), are implemented and integrated with CPOE (Computerized Practitioner Order Entry) and pharmacy to maximize point of care patient safety processes for medication administration.
- Around 2% of hospitals are at stage 6 which means that full physician documentations or chartings like structures templates are implemented. PACS system provides medical images to physicians by internet and displaces all film based images.
- Around 0.7% of hospitals are at stage 7 which means the full hospital is now electronic based. It no longer uses paper charts. Clinical data warehouses are being used to analyze patterns of clinical data to improve quality of care and patient safety. Clinical information can be readily shared via standardized electronic transactions (i.e. CCD) with all entities that are authorized to treat the patient or a health information exchange (i.e., other employers, non-associated hospitals, sub-acute environments, ambulatory clinics, patients & payers in a data sharing environment). The hospital demonstrates summary data continuity for all hospital services (e.g. inpatient, outpatient, ED, and with any owned or managed ambulatory clinics).

Clinical Data in Paper Format – A Big Problem!

“In the U.S.A., 14% of U.S. Gross Domestic Product (GDP) was spent on healthcare in 2001 (U.S. OECD) or \$1.5 trillion (U.S. HCFA). \$250B was spent on healthcare-related communications services, administrative and transaction services. According to a 2001 Arthur D. Little study \$100B of the \$250B was directly attributable to inefficient communications. 25% to 40% of the \$250B

represents excessive administrative and paperwork overhead.” There are several reasons that make us think in a direction to develop a system which can overcome the problems laid by the use of clinical data in hard format. Some of the problems are as follows:

Paper, Paper and Paper:

It involves a lot of paper to maintain any type of records. And when it comes to medical records then it is limitless. There is so much information which is linked to a patient that to maintain it, needs a great organized structure of piles of files. Maintaining records in paper format is cumbersome and as the records grow, it takes a leap towards inconsistency and is difficult to maintain. With this, paper also has few limitations like it grows old and there is always a chance that it gets spoiled either by water, fire or bugs etc.

Manpower and Efficiency:

To maintain the piles of paper records, manpower and time is required. Data in paper format also slows the work as compared to the rapid retrieval of information by the use of electronic data. Search for the relevant record or to retrieve useful data may require a lot of time and man power. There is a lot of staff needed and there is a huge risk of error involved in retrieval of data manually.

Non Portability:

Looking at the global world and the way its getting squeezed its really crucial for a doctor to be in touch of his records from anywhere in the world. The physician can do his work from anywhere and can refer to any patient’s diagnosis which in turn is very helpful in dealing with other patients. With the use of paper records this cannot be attained and when the doctor is away from office, he is AWAY FROM WORK. What best the physician can do is to call his staff from remote location and ask for the details but this involves lot of data errors and might not be so secure and is a privacy and security threat to the data.

Cost inefficiency:

Storing and maintaining the patient's record in paper format requires many resources and hence increases the cost. But retrieving the paper files becomes impossible when there are thousands of files in an office. And so the cost to store and maintain records in underutilized. On the other hand when electronic data is stored it’s easy to retrieve and can be utilized again and again. Thus giving maximum return of investment.

Human Errors:

The records maintained manually on papers are prone to lot of human errors which is one big problem. Managing the current records and history of patients is very big task. There can be loss of papers and records in the process of managing files. The amount of errors can reduce if the data is stored in electronic format.

Coordination:

There are many different entities involved in a patient’s record and this is getting increased day by day. A patient may visit any doctor’s office and can get his blood test done from a pathology lab, gets his X Ray, CT Scan etc done at other radiology lab. In order to get these test results the patient or the lab has to communicate and send the reports to doctor’s office by mail which is a big problem of coordination. It also delays the whole process and may result in errors and security breach for the data.

Inter Office Communication:

A patient can visit many departments once he/she enters a hospital. It can take hours for a file to reach from one department to other, slowing the overall process. If the data is updated and stored electronically, it is available immediately to every department who has the access to the system. Thus there is no delay in communication between the departments.

Decision Making:

With data in paper format any kind of analysis is difficult. On the other hand if organization's data is collected in electronic format, a lot of analysis is possible. The patient’s record can be used to see how a medicine in reacting on group of patients, physician’s performance can be evaluated; a lot of other business analysis over the time can also help in improving the organization and health care.

Dependency:

The patient’s record in a physician office are filed and stored by the clerical staff. When these

records need to be retrieved, there is always dependency on the staff. The pile of files makes it difficult for a physician to look for record themselves. On the other hand when the records are in electronic format it is much easy to look for a patient's record. It can be searched by name or social security number or date of birth.

Security:

Keeping clinical data on papers is not so secure. It can be stolen by anyone who has the access to the place where papers are kept. The security issue comes into picture when the data travels between different entities like labs, physician's office, insurance providers etc.

INFORMATION RESOURCES OF HEALTH CARE SYSTEM.

A **systematic review** is a literature review focused on a research question that tries to identify, appraise, select and synthesize all high quality research evidence relevant to that question.

A systematic review aims to provide an exhaustive summary of literature relevant to a research question. The first step of a systematic review is a thorough search of the literature for relevant papers. The *Methodology* section of the review will list the databases and citation indexes searched, such as **Web of Science** and **PubMed**, as well as any individual journals. Next, the titles and the abstracts of the identified articles are checked against pre-determined criteria for eligibility and relevance. Each paper may be assigned an objective assessment of methodological quality using the Jadad scale or similar rating system.

The *systematic review* of published research studies is a major method used for evaluating particular treatments. The **Cochrane Collaboration** is one of the best-known, respected examples of systematic reviews. Like other collections of systematic reviews, it requires authors to provide a detailed and repeatable plan of their literature search and evaluations of the evidence. Once all the best evidence is assessed, treatment is categorized as "likely to be beneficial", "likely to be harmful", or "evidence did not support either benefit or harm".

The Cochrane Collaboration defines a systematic review as a review of a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise relevant research, and to collect and analyse data from studies that are included in the review.

Systematic reviews synthesize the results of multiple primary investigations by using strategies that limit bias and random error. These include a comprehensive search of all potentially relevant articles and the use of explicit, reproducible criteria in the selection of articles from review.

The Cochrane Collaboration

The Cochrane Collaboration is an international and independent non-profit organisation established in 1993 aimed at producing up-to-date, accurate information about the effects of healthcare available worldwide. The Cochrane Collaboration produces and disseminates systematic reviews of healthcare interventions and promotes the search for evidence in the form of clinical trials and other intervention studies.

The Cochrane Collaborations handbook for systematic reviews of interventions is its main working document. The handbook describes in detail the process of creating Cochrane systematic reviews. It is available online at:

<http://www.cochrane.org/resources/handbook/>

The main output of the Collaboration is the Cochrane Database of Systematic Reviews, which is contained as part of the Cochrane Library.

The Cochrane Library

The Cochrane Library is a collection of evidence based healthcare databases.

Grey Literature

Grey literature has been defined as: that which is produced on all levels of government, academics, business and industry in print and electronic formats, but which is not controlled by commercial publishers.

Types of grey literature

Grey literature comprises a wide range of material including, government publications, reports, statistical publications, newsletters, fact sheets, working papers, technical reports, conference proceedings, policy documents and protocols and bibliographies.

Producers of grey literature

A wide range of organizations produce a significant amount of grey literature related to public health, health policy and epidemiology. These include:

- Government health agencies
- Non-profit organisations
- Universities
- Research centres
- International agencies such as the World Health Organization (WHO) and UNAIDS.
- Health institutes
- Professional organisations
- Special interest groups.

Searching Tools

• Medline

• Both PubMed and Ovid are often referred to as Medline. They contain the same information.

• PubMed Clinical Queries

• Ovid

• Cochrane's Database (Systematic Reviews; Database of Reviews of Systematic Reviews; Cochrane Controlled Trials Register)

• Best Evidence (Electronic version of ACP Journal Club; Most information contained in commentary)

Clinical Queries in PubMed

Applies research methodology filters

• Categories:

• Therapy

• Double-blind randomized controlled trials

• Diagnosis

• Compares new test to the gold standard; controlled trials

• Etiology

• Longitudinal Studies

• Prognosis

• Cohort studies or survival analyses

Cochrane Database of Systematic Reviews

• The Cochrane Database of Systematic Reviews (COCH) includes the full text of the regularly updated systematic reviews prepared by The Cochrane Collaboration.

• The reviews are presented in two types:

• Complete reviews - Regularly updated Cochrane Reviews, prepared and maintained by Collaborative Review Groups

• Protocols - Protocols for reviews currently being prepared. Protocols are the background, objectives and methods of reviews in preparation.

DARE

• The Database of Abstracts of Reviews of Effectiveness (DARE) includes the Cochrane Database of Systematic Reviews and ACP Journal Club

• DARE is a Full Text database containing critical assessments of systematic reviews from a variety of medical journals. DARE consists of structured abstracts of systematic reviews from all over the world. DARE records cover topics such as diagnosis, prevention, rehabilitation, screening, and treatment.

ACP Journal Club

The ACP Journal Club Collection consists of two journals ACP Journal Club, a publication of the American College of Physicians, and Evidence-Based Medicine, a joint publication with the British Medical Journal Group.

The editors of ACP Journal Club screen the top clinical journals on a regular basis and identify studies that are both methodologically sound and clinically relevant. They write an enhanced abstract of the chosen articles and provide a commentary on the value of the article for clinical practice. Using this source, clinicians can quickly understand and apply to their practice important changes in medical knowledge, without having to read and synthesize for themselves thousands of

journal articles.

CCTR

CCTR is a bibliographic database of definitive controlled trials. These controlled trials have been identified by the distinguished contributors to the Cochrane Collaboration.

They search the world's health care journals systematically, have combined results to create an unbiased source of data for systematic reviews.

CCTR contains over 300,000 bibliographic references to controlled trials in health care. Contributors to the Cochrane Collaboration follow quality control standards to ensure that only reports of definite randomized controlled trials or controlled clinical trials are included.

Although many reports of trials are included in MEDLINE, others are not easily identified as randomized controlled trials; and as such, researchers may overlook them in the search for relevant studies for systematic reviews.

Tasks for self-check:

Task 1:

1. WHAT IS THE DATA ENCRYPTION?

- a) It is using either a single key (or a pair of keys) to scramble and unscramble the text (or other medical data types).
- b) It is the process of verifying the identity of a potential user of a system.
- c) It is process of determining whether a user is authorized to have access to a system or application.
- d) All listed answers are right.
- e) It is the process of logging into the Windows Operating System like Windows XP.

2. WHAT IS THE USERS AUTHENTICATION?

- a) It is using either a single key (or a pair of keys) to scramble and unscramble the text (or other medical data types).
- b) It is the process of verifying the identity of a potential user of a system.
- c) It is process of determining whether a user is authorized to have access to a system or application.
- d) All listed answers are right.
- e) It is the process of logging into the Windows Operating System like Windows XP.

3. WHICH OF THE FOLLOWING IS STRONG PASSWORDS?

- a) Administrator
- b) c0mputer
- c) %4Btv
- d) \$jelF2bb
- e) My dog's name

4. IF YOU EVER RECEIVE AN UNSOLICITED TELEPHONE CALL FROM SOMEONE CLAIMING TO NEED YOUR PASSWORD, WHAT WOULD YOU DO?

- a) Refuse and report immediately
- b) Write the password on a piece of paper, put it in an envelope and send it by mail
- c) Tell him/her the password and change it the following day
- d) Send him/her the password via email
- e) Call 911.

5. WHAT IS THE ENCRYPTION?

- a) It is the method of disguising plaintext in such a way as to hide its substance.
- b) It is the process of verifying the identity of a potential user of a system.
- c) It is process of determining whether a user is authorized to have access to a system or application.

- d) Right answer not shown.
- e) It is the process of logging into the Windows Operating System like Windows XP.

References:

Basic.

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The methodical guidance has been completed by **S.Y. Olenets**