Usefulness of Electronic Medical Record System in Hospital.

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Although it is very important to use electronic medical record (EMR) in hospital, there are few hospitals to use it, because of no good EMR system. Recently, we have designed EMR system including order-entry system. In this study, we analyzed the usefulness and problems of this system to use in clinics. In the beginning, almost all doctors had some troubles when they saw patients, especially out-patients. However, they became familiar with EMR system in relatively short period. Although our EMR system is not perfect, it may be useful for medical record.

Although it is very important to use electronic medical record (EMR) in hospital, there is, in fact, few hospital in the world to use it, because of no good EMR system. Therefore, we tried to make EMR system which every doctor can use easily (1). The aim of this study was to confirm whether our system is useful in the clinic or not. We also analyzed the usefulness and problems of this system in clinic.

In this study, we clearly showed that our EMR system may be useful for patients' medical records. Although our EMR system is not perfect in the present time, each doctor is still developing it. In addition, every doctor can use medical records at any time for diagnosis, treatment and research through our EMR system. These results suggest that our EMR system has unmeasurable merit and convenience both to patients and doctors.

PMW: Patient Management Workstation – an evolution of the PDB ICU System

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The development of the patient management workstation (PMW) was an evolution from the PDB patient database (PDB) system. PDB was in use on 2 beds in the SICU at the Montreal General Hospital continuously from Jan 88 until 95. In all 2500 patients were admitted and managed with that system over the years with a complete replacement of the patient flowsheet PMW builds and improves on many of the features that were present in PDB.

With the evolution in computer processing power, the reality of "blink" speed operations could now readily be achieved with a graphical user interface (GUI). PMW was set up to include multiple tests, each comprising of subtests (components). Data can be entered manually, or received automatically from the hospital information system, and bedside devices. The interface to the HP Merlin monitors exists and an interface to Marquette monitors will be developed. Data validity is maintained by electronic signing of data on entry and on logoff. Any data edits maintain a full audit trail.

A trial of Electronic Medical Record System using the Markup Language

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We are making an Electronic Medical Record System. For wide area data exchange, this system is using the SGML based Markup Language. This method is useful for data exchange and index of patient database.

We have been developed our hospital information system. Electronic Medical System is a part of this HIS. This system is evaluate and trial phase, now, and we consider data exchange to other hospital.

As data exchange and data cording are very important problem, this system is using the SGML based Markup Language which made by Electronic Medical Record research group in Japan. This method is composed of the tag, which corresponds to the kind of the content of the description. Each element can include the standardization data such as HL7 and DICOM by specifying the form. These methods are called MML and MERIT-9 in Japan.

By using Markup Language, not only the information exchange with the outside but also the inside information exchange became easy. The administration of the patient health database became easy though the overhead of the system increased

Electronic Patient Record System
with a flexible Template for Patient Care Record

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We have both designed and developed a prototype for an electronic patient record (EPR) system, using flexible template generation. The "template" referred to in this poster is a pre-defined form for an electronic patient record display, designed to accommodate different patient problems. Items in the template can be modified according to the patient's condition. The template acts as a guide to physicians, to ensure consistent terminology, and shows patients' previous data along with related medical information. Data representations of signs, symptoms, laboratory tests, other examinations, drug administration, surgical operations and other procedures are defined as check items. This EPR system has been designed to establish a consistent and integrated medical record, with direct data entry by physicians.

Free Text documentation is natural, flexible and easily accepted by physicians. Clinical narratives in patient records have typically been recorded in free text in traditional medical record systems, thereby limiting the extraction of this information for research, quality assessment or decision support. For flexible and yet structured data entry, we have introduced " templates " and "check items". The physician can customize the design of the patient template according to the patient's condition and his / her will. On the other hand, the structure of a check item can not be customized, if it is to serve as a consistent data record. When the structured data entry method can not provide physicians sufficient expressive power to describe in detail what he / she considers clinically relevant information, then a free text area is available in this system.

Evaluation of tablet device for electric patient record

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Currently used electronic patient record systems have been developed on the basis of various plans, and are fairly satisfactory when put into practice, but they still require improvement in the man-machine interface. Some systems currently in use pose difficulties because the keyboard is inadequate to input the history of present illness, comments, and graphs and other pictorial data. With other systems, it is difficult to in-put all the data at outpatient clinic booths and some data needs to be input at a central terminal inconveniently far from the outpatient clinic booths. As a possible means of improving man-machine interface for electronic medical record systems, we recently assessed the usefulness of digitizing tablets which allow physicians or other medical staff members to input characters and sketches by hand. That is, we assessed the following three features of the three tablets available to us for the development of electronic medical record systems. The tablet we are now using for developing electronic medical record systems has been found to be far superior, in terms of ease of manipulation and other features, to the tablets attached to the office work station or the personal computer which we had used about five years previously.

Proposal for Creating an Emergency Web Site from Kobe Manual and Forms against Big Disasters on the Internet

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From the experience of the major earthquake in Kobe, we learned that we need a medical record system in disasters whether it is computerised or not. And many requisite forms will be necessary in a devastated area. By developing computer networks we should consider the problems of the computer networked in a disaster and we should utilize the computer network against disasters on the internet. Thus, we created the homepage against major earthquakes which provides may forms in a catastrophe including a medical record form and information on the Web site. The official government should create a more integrated network system against disasters.

An Analysis of the Sunnybrook Health Science Centre Paper Patient Record

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The purpose of this research was to better understand the paper chart. We analyzed a random set of acute care episodes. Results indicate that 75% of the pages in the paper chart consist of handwritten, unstructured information such as progress notes or assessments. Clinicians are asked to record some data such as initial diagnosis multiple times leading to errors of duplication or omission.

The purpose of this study was to analyze the paper record in order to better understand some of the challenges of computerizing the patient record. A comparable study reported that only 25% of their chart was computerized and 38% handwritten.

We performed this study at Sunnybrook Health Science Centre. At the time of the study, the patient record could include 165 different forms. We decomposed each form into a set of inclusions such as initial diagnosis' or 'note'. We took a random sample of 143 charts. We analyzed one acute care episode per chart. This comprised 18 654 pages of information or an average of 130 pages per acute care episode (range 27-559; sd = 110.6). We counted how many of each type of inclusion we found in our sample.

This study verifies that the paper record is large, unwieldy are prone to error. The bulk of the chart is handwritten and unstructured. We conclude that there are great opportunities and challenges in improving the patient record

Standardization of exchange procedures of clinical information using Medical Markup Language (MML).

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In this poster, we demonstrated a method for exchanging the clinical data between different platforms.

This data exchange method is called "MML: Medical Markup Language" which is created using SGML technique. Using this method, it will be possible to exchange the clinical data between many hospitals in which different computer systems are running.

We devised a DTD (MML) which enables us to reproduce medical chart information using the SGML techniques. We developed a MIME form multi-media package using DTD, and proved that exchanges of information are possible even in an off-line condition or in electronic mails. It is suggested that "SGML document" is good for static exchanges of information but may not be used as dynamic links of databases and the development of objectified technology appears indicated in the future.

Patient record system for data process on general surgery

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Our application is a database description, which was realized to store data from general surgery. Therefore the database contain a collection of heterogeneous data on the patient's condition and the health care process, specifically for this medical domain. Now it is tested at the County Hospital, Department of General Surgery from Timisoara, Romania.

The development of computer database systems employed is accelerating to meet the needs of the hospitals, but there are still very few examples of such departmental systems [1,2,3,4]. With the advent of these database systems it has become possible to store and process information which with previous manual techniques would not have been feasible. The present patient record system is used to store data provided from the Department of General Surgery, from County Hospital, Timisoara Romania.

"SYLEVA For JAVA" - A Computer Program For The Recording Of Data On Patients With Systemic Lupus Erythematosus At The Hospital Of Internal Medicine III With Outpatient Department Of The University Of Erlangen-Nuremberg

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Patients with systemic lupus erythematosus (SLE) from the southern part of Germany are treated in the outpatient department of the Hospital for Internal Medicine III of the University of Erlangen-Nuremberg. SLE is an intermittent autoimmune disease especially affecting young women and attacks all organ systems of the human body. In the course of the routine controls carried out periodically every six months, data from the anamnesis, physical examination, blood test, possibly the pregnancy examination, and medical treatment are recorded.

The program "SYLEVA for JAVA" to assist the recording of the medical data is being developed as a thesis. The definitions of the data structures are based upon international classifications, e.g. that of the American Rheumatism Association.

"SYLEVA for JAVA" is based on the program "SYLEVA", that is in use since December 1995 in the outpatient department of the Hospital of Internal Medicine III. The data transfer between the applet started from a net browser and the database management system ADABAS from Software AG is being implemented via JDBC.

The aim is to improve the medical treatment of the SLE patients and to obtain new scientific findings about the disease.

Sharing Electronic Patient Records on the World Wide Web using the HOLON Architecture

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We report the progress of the HOLON consortium, a partnership of government and industry, to create a cross-institutional emergency medical record which uses the Center for Disease Control's DEEDS dataset.

The pilot project was conducted as part of an Enterprise Information Infrastructure project called Health Object Library Online (HOLON) HOLON is an object-oriented healthcare library and middleware utility that users and applications can plug into to collaboratively and securely gain access to globally distributed, heterogeneous information. Users, here, is a broad term that covers patients, consumers, health care providers, administrators, analysts, and the like. HOLON is being developed jointly by 14 organizations. The purpose of HOLON is to provide a set of reusable middleware components that comprise a framework for fostering the connectivity of applications and users to repositories.

We have implemented a pilot system using the HOLON architecture that allows emergency room clinicians to access clinical data over the world-wide web according to the DEEDS data element standard. The HOLON pilot implements web-exposed HL7-based medical information servers at each participating institution in the healthcare delivery network. A central "Consolidator" processes requests for information from healthcare providers and queries all sites on the network. The Consolidator then delivers an integrated multi-institutional medical record to the health care provider. The pilot further allows physicians to access self-reported data provided by patients through an Internet-based health risk assessment.