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Project Approval Form

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Project Title : Toward Digital Clinics

Program : M.S. in Computer Science

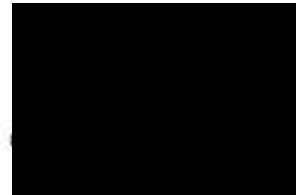
Division/Dept : Computer Science and Mathematics

School : Arts and Sciences - Beirut

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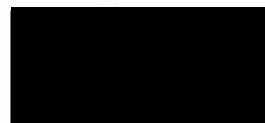
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Date: June 12, 2006

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TOWARD DIGITAL CLINICS

By

Abbas K. Bassam

A project submitted in partial fulfillment of the
requirements for the degree of

M.S. Computer Science

Lebanese American University

2006



LEBANESE AMERICAN UNIVERSITY

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2006

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To my parents

Acknowledgment

I would like to thank my advisor Dr. Ramzi A. Haraty Def Advisor for his guidance throughout my Thesis work. A thanks is also to Dr. Mohamad Ladan for being on my thesis committee.

I would like to express my sincere gratitude to the Lebanese American University whose financial support during my graduate studies made it all possible.

Finally, I would like to thank my friends and family for their long support.

ABSTRACT

Medical fields are becoming an increasingly important area for research and application. Therefore, Doctors, nurses and patients can benefit from the highest technology offered by IT department to serve the overall operations clinics. The Electronic Records Manager and Tele-medical procedures will allow doctors to consult other doctors and share knowledge with other doctors in just minutes. And patients will be able to access the internet to be aware of their medical file according to a username and a secret password. Polyclinics are considered a topic which is still very active and highly demanded. This paper explores the medical fields for patient as well as the results of their tests with details. Moreover, it includes registration, appointments, follow up, repetitive appointments and medical record manager. Furthermore, this paper imposes a description and implementation for reporting services, which will be used in the project to give doctors customizable reports due to their needs.

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CHAPTER 1

INTRODUCTION

1.1 What is a digital clinic?

A digital clinic is an Implementation of Healthcare Standards Policies and Procedures in a Digital Format. Our objective here is to develop a program that can be accessed to all users who are related to this system (e.g. Doctors, Nurses and Patients).

1.2 Scope of the Project

What is Digital Clinic Outcomes?

Digital clinic outcomes are to improve quality and patient outcomes and measure them by: Alerts, reminders, decision Support, Compliance with International Healthcare Standards, ICD-10 ('International Statistical Classification of Diseases and Related Health Problems' where the '10' stands for the 10th revision) and CPT4 (Code Procedural Terminology. There is a unique code for each procedure a doctor can do). Besides, Re-engineer healthcare processes and improve efficiency. Moreover, Improve patient revenue, increase cash and profits, Improve patient satisfaction, Improve availability of patient clinical information and images to multiple providers in different locations at the same time, including: Hospital, Clinics, Affiliated Nursing, Homes, Faculty Practices, Voluntary/Community Physician Offices, Joint venture Home Health Organizations." The Young Men's Clinic currently provides a limited package of such health care services as physical examinations for school and work and treatment of sports injuries, acne and other conditions. "[1]

Achieve 100% physician utilization of all technology Current state of Healthcare Information Systems has matured with advanced knowledge and decision support features. However, to take advantage of this functionality, physician use at point of care is required. Only an estimated 4% of physician all over the world are currently entering

orders and obtaining results/reports/images for patient care services. Building the “right” MIS team includes Physician and Nurse Informatics. Moreover, create the “right” information system environment. Besides, choose clinical staff with recognized and respected clinical experience and knowledge of the internal workings of the organization.

Achieve Digital Clinics

- Strong belief in implementing the system as a tool to achieve the objectives and fulfill the strategy of the clinic.
- Provide Healthcare knowledge-base.

The Information System Environment

- Front Office Applications
- Back Office Application
- Health Statistics

Enterprise Application Features

This application will be used in a Paperless Environment, because it has Powerful Menu processor empowered by customizable reports and minimize the Manual effort. This application will be designed by doctors for doctors and the part of financial application is designed especially for clinics.

CHAPTER 2

PATIENT MASTER INDEX

In this chapter we will discuss the Patient Master Index (PMI) which will be the first part of the project.

2.1 Patient Search Engine Form

The Nurse/Secretary has to search for the patient in a Search engine form before taking a decision to register the patient. Sometimes patients forget that they visited this clinic a long time ago. Therefore, The Nurse/Secretary in the Search engine form can search according to a certain criteria (e.g. Patient Id, Patient Name)

Currently, in the field of electronic medical records (EMR) the standard search consists of searching for a patient name or ID number to pull a patient's record. With many clinics transferring their information systems to EMR there is a wealth of information that is now digitally accessible. "Patient master indexes are already maintained by most hospitals and health care providers. Hospital indexes generally include each patient's name, address, date of birth, and so on, as well as a hospital unit record number and some clinical or service-related information such as service dates, diagnoses and medical alerts." [2] If the patient is already registered in the database base the Nurse/Secretary can see the demographic data for the patient to reserve an appointment for him.

2.2 Patient Registration Form

For New Visits:

The Nurse/Secretary has to initiate a medical record to every NEW PATIENT seen or treated at the clinic.

The doctor must document the following in the medical record during a patient's initial visit.

- History and Physical Exam, including assessment, orders and plan/recommendations.
- Progress Notes.

These notes are actually self-explanatory; however they may be explained to them by the Medical Records staff by request.

Follow-up Visit:

Follow-up visit like a normal visit which is given to a patient on behalf of the doctor to follow the treatment of a patient. All booked patients on a certain date must have their medical records (file) ready; i.e., investigative reports are fastened, properly arranged, audited, etc.

Doctors must document the findings, progress, treatment, plan and recommendations in the progress notes.

(N.B. All documents should be dated, timed and authorized.)

At the Ward

1. The Secretary/Nurse should write down the data of the patient in the registration/Form.

The Secretary/Nurse must prepare the patient chart with complete sets of forms.

The present numbering system being used is the combination of serial and unit numbering system. On the patient's first admission, as patient services, the patient is given a serial number with the year preceding it, i.e. 89-001, 89-002, etc figure 1. The patient retains this number for all subsequent visits. This results in all of the patient's records being filed in the same folder. It is important to check that all charts already filed in the folder are for the same patient and case number as the chart being currently filed. "Nurse/Secretary begins to assemble patients' health information by first making sure their registration and initial medical charts are complete. They ensure that all forms are completed and properly identified, and that all necessary information is in the computer. They regularly communicate with physicians to clarify diagnoses or to obtain additional

information."[4] Secretary who works in the clinic needs a strong clinical background to analyze the contents Medical records and health information of medical. Moreover, she needs knowledge of medical terminology, anatomy, and physiology etc...

DR. TOUFIC EID'S CLINIC Monday Jun 05, 05

SMART CLINICS DIGITAL SYSTEM PDR APPOINTMENT REMINDER ADMIN

Administration Area ADMINISTRATOR [1] | LOGOUT

PATIENT REGISTRATION FORM

Auto Generate Patient Medical Number

 Admission By Specific Medical Number

PATIENT PERSONAL INFORMATION

Sex* Ms. Active Patient

Patient Name: First Name*
 Father Name
 Surname*
 Maiden Name

Date of birth* (e.g. dd/mm/yyyy)

Gender* Female Male

Patient Status* Alive V.I.P

Nationality (are): 1st Nationality Lebanon

 Other Nationality Select a Nationality

Profession Select an Occupation

Marital Status: Single Married Widowed Divorced

Number of Children No Children

Patient Picture

Spouse Name

 Spouse Profession

AC

SMART CLINICS

SEARCH PATIENT ID FOR

Figure 1

CHAPTER 3

MEDICAL RECORD MANAGER

3.1 BASIC CONCEPTS

"When a patient receives healthcare, a record is maintained of the observations, medical or surgical interventions, and treatment outcomes. The medical record of the patient contains information that the patient provides concerning his or her symptoms and medical history, the results of examinations, reports of x rays and laboratory tests, diagnoses, and treatment plans. Medical records and health information technicians organize and evaluate these records for completeness and accuracy." [4] The Treating Doctor must document the following in the medical record on every patient's admission:

- History and Physical Exam, including assessment, orders and plan/recommendations;
- Doctor's Progress Notes for patients.
- Doctor's Order.
- Other special forms for special cases (e.g., informed consent, operative notes, anesthesia notes, labor record, etc.)

The Nurse in the clinic must document the following on every patient:

-
- Nurse's Notes.
 - Medication Sheet.

In medical record we have two cases:

Before starting a visit an appointment must be taken for the patient figure 2. The patient will be either a new patient or an old patient.

New Patients means that the patient was never seen/treated before in this clinic and/or that there was no medical record initiated before to the particular patient.

Old Patients means that the patient was seen/treated before and he is registered in the system.

DR. TOUFIC EID'S CLINIC

SMART CLINICS DIGITAL SYSTEM

Administration Area ADMINISTRATOR [1] | LOGOUT

SINGLE APPOINTMENT FORM

DATE: 04/06/2006

SERVICE: Pediatrics

APPOINTMENTS TABLE

TIME	AHS	PATIENT ID	PATIENT NAME	STATUS	APNID
01:00 AM	53				
01:30 AM	53				
02:00 AM	53				
02:30 AM	53				
03:00 AM	53				
03:30 AM	53				
04:00 AM	53				
04:30 AM	53				
05:00 AM	53				

SMART CLINICS

SEARCH [PATIENT ID] FOR [] GO

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DR. TOUFIC EID'S CLINIC
Specialty Clinics Center, Suite 78, Maamar St. Faouq Gefnor Center, Hamra
BEIRUT - LEBANON

[Patient Master Index](#) |
 [Appointment System](#) |
 [Change Password](#) |
 [Clinic Switcher](#)

Figure 2

The concerned doctor must document the following:

Patients with Surgical/Operative Procedures Done

- Informed Consent (Doctor performing the procedure);
- PreSurgical Checklist (Nurse).
- Anesthesia Record (Anesthesiologist).
- Operative Notes (Surgeon).
- Recovery Room Record (Anesthesiologist & Nurse).

Obstetrics Patients

- Labor Progress and Delivery Chart (Doctor & Nurse).

"Critical care nurses are called upon to assist with the care of critically ill obstetrics patients. Some of the most complex care is required for patients with pregnancy-induced hypertension or preeclampsia." [5]

Newborn

New Born Baby Case Sheet (Doctor & Nurse)

Plus other forms as may be defined by the Clinical Executive Board/Committee

Special Cases – admitted cases where a surgical/operative (Surgery at the spot) procedure is done and/or on special drug protocol and/or diabetic cases or newborn, etc.

"It's common knowledge that health care paperwork accounts for a significant percentage of the high cost of health care. As a result, new paperless, computer-based solutions that enable providers to collect, store, and securely transmit patient information are becoming increasingly popular as a means to cut costs and improve patient care." [3]

Authority:

Individuals authorized to document in the medical record are as follows:

PROGRESS NOTES:

Physicians

Nurses

Any other user providing care for the patient who has a need to communicate patient progress

PHYSICIAN'S ORDERS

Physicians

Nursing personnel accepting telephone or verbal orders from the caregiver

Any nurse wishing to create new forms, or revise any existing forms must submit new drafts, or revisions, to the Medical Records Department for approval. He/She must state the purpose of the form, justification for its use and if it is replacing an existing form.

3.2 Constraints:

"Technologically, the healthcare delivery system in the United States is considered to be among the best in the world. The U.S. has outstanding medical schools, prestigious medical research institutions, numerous local healthcare facilities, state-of-the-art medical technologies, and more well-trained healthcare professionals than in most other countries." [11]

The fax machine receiving medical information shall be located in a place where

ALL MEDICAL INFORMATION IS CONFIDENTIAL.

Facsimiled confidential medical reports and requests for medical information with patient's authorization shall be as acceptable as originals.

Provide following information to another medical facility or physician's office to obtain medical information of patients currently being treated.

A) Patient Information:

Name

Birth date

Date of treatment

Information to be faxed

B) Additional information to provide when requesting medical information:

Name of person requesting information

DR. TOUFIC EID'S CLINIC

Monday Jun 05, 06

SMART CLINICS DIGITAL SYSTEM

Administration Area ADMINISTRATOR [1] | LOGOUT

PRESENT HISTORY PAST HISTORY

ID: 2650 | Name: Abir Masri | Age: 35

Present Complaint: Coughing

Menarche

Para: [] + [] Last Period: []

Comment: []

Cycle: FIVE DAYS Cycle Length: From: [] To: []

Bleeding Duration: From: [] To: []

Cx Smear:

Cervical Smear Year: [] Type: NORMAL Next Due: []

Comment: []

Mamography Year: [] Type: NORMAL Next Due: []

Comment: []

Bondensity Year: [] Type: NORMAL Next Due: []

Comment: []

Update Cancel

SEARCH PATIENT ID FOR: [] Go

Figure 3

- All entries must be timed, dated and authenticated.
- Records shall be completed and authenticated within two (2) weeks.
- Records will be considered complete when all dictated reports are transcribed and all entries authenticated.
- Final diagnosis and complications must be recorded without abbreviations or symbols.
- History and Physical Examinations.
- Must include the following:
 - Chief complaint
 - Details of the present illness
 - Relevant past, social and family history

- Allergies
- Physical examination to include inventory of body systems and vital signs
- Pelvic, rectal, breast, and for diabetic patients, fundoscopic eye examination or reason for deferral, along with results, if done in the office
- Conclusions or impressions
- Course of action or plan
- Progress Notes:
 - Must be written on a daily basis.
 - Should give a pertinent chronological report of patient's course.
 - Should reflect any change in condition.
 - Should reflect the results of treatment; and
 - Must be timed and dated.
- Consultation:
 - Should contain written opinion reflecting actual examination of the patient and the patient's medical record.
- Operative Reports:
 - History and physical examination must be on the chart prior to the surgical procedure.
 - The operative report must be dictated or written immediately following surgery.
- The operative report must include the following:
 - Name of the procedure/operation
 - Preoperative diagnosis
 - Postoperative diagnosis
 - Name of primary surgeon and any assistants
 - Description of the findings
 - Technical procedures
 - Specimens removed
 - Condition after surgery
 - Estimated blood loss

- The operative report must be signed and in the chart as soon as possible.
- Any surgeon who has not dictated/written an operative report 24 hours following surgery may be subject to suspension of surgical procedures.
- Clinical Summary Reports:
 - Must contain the principal and associated diagnosis;
 - Must list all procedures performed;
 - Must be dated and authenticated;
 - Cannot contain any abbreviations or symbols; and
 - In the event of death, a summation statement shall be made as to the immediate cause of death.
- Discharge Summary:
 - Should be dictated within 24 hours following the patient's discharge except in unusual situations where pathology or autopsy findings are awaited.
 - Must include significant lab/history and physical findings.
 - Must include procedures performed and treatment rendered.
 - Must include the condition of the patient on discharge.
 - Must include any instruction relating to physical activity, medications, diet and follow-up care.
 - Must include final diagnosis; and
 - Must be dictated for all deaths.
- Final progress note may be substituted for a discharge summary if:
 - The patient had an uncomplicated obstetrical stay.
 - The patient was a normal newborn infant; and
 - Final progress note should include instructions to the patient and/or family.

The charts of patients who have not been seen at this facility in six (6) years or more have been sent to storage. Anyone not treated within the last ten (10) years

have had their medical records destroyed. Charts that have been destroyed have a perpetual record, which is located in the Medical Records Storage Disk. These are filed numerically and contain the patient's last face sheet and the most recent history, physician and discharge summary. Records of patients seen within ten (10) years, but more than five (5) years ago, may be obtained from the outside storage facility for a fee, if used. Charts of minors are maintained until the age of majority, but not less than ten (10) years after the most recent discharge.

The files rooms are located in the Medical Records Storage room according to type of record, i.e., Delivery room. The entrance to storage rooms remains locked at all times and accessed only by the Medical Records personnel, unit nursing managers for the purpose of patient care or educational studies.

CHAPTER 4

MEDICAL RECORD MANAGER CONSTRAINTS

"Medical informatics has expanded rapidly over the past couple of years. After decades of development of information systems designed primarily for physicians and other healthcare managers and professionals, there is an increasing interest in reaching consumers and patients directly through computers and telecommunications systems." [6] Due to the importance of the medical records many constraints must be taken into consideration. To facilitate patients' access to their medical records we may give access to the internet thru a username and a password for every patient who wants to see his record or by adoption of smart cards, or both.

4.1 CONSTRAINTS:

- Upon discharge, the medical record shall be reviewed for the patient's date of birth.
- Records of patients eighteen (18) years of age and above and emancipated minors shall be destroyed ten (10) years from the date of last discharge.
- Records of unemancipated minors shall be destroyed one (1) year after the date the minor reaches the age of eighteen (18).
- Medical records of women patients who gave birth shall be destroyed nineteen (19) years after the birth date of the child, but in any case, not less than ten (10) years from the most recent discharge date.
- All records shall be stamped on the outside front cover with "DO NOT DESTROY UNTIL _____". The proper year of destruction shall be handwritten in pencil.
- All records on patients treated within the last two (2) calendar years and assigned new medical record numbers are filed in the Medical Records Department.
- All records of "death" patients treated within the past five (5) years are filed in the Medical Records storage room.

- Records on patients not treated within the last five (5) years may need to be sent to an outside storage facility.
- All medical records that have been destroyed have a perpetual folder in the Medical Records Storage Room. The folders include: patient's most recent face sheet; discharge summary from last treatment rendered; operative report, if applicable; death summary, if applicable and most recent history and physical.
- Medical Records may be destroyed ten (10) years after the discharge date with the exception of unemancipated minors and mother charts. A medical record of an unemancipated minor and women patients who gave birth may be destroyed one (1) years after the child becomes eighteen (18) years of age (19 years after his/her date of birth), but not less than ten (10) years after the last discharge date.
- In the list following, the Date of Birth is followed by a colon and then the "Do Not Destroy Until..." year:

<u>DOB</u>	<u>"DO NOT DESTROY UNTIL..."</u>
1967	1986
1968	1987
1969	1988

1970	1989
------	------

<u>DOB</u>	<u>"DO NOT DESTROY UNTIL..."</u>
1974	1993
1975	1994
1976	1995

1977

1996

1978

1997

1979

1998

1980

1999

A comprehensive set of policies and procedures addressing the provision of health care services to patients. It covers a wide area, from the annual review of the changing needs of immigrant communities in a clinic service area to the procedures for clinic signage. The following, however, highlight and elaborate on some of the most important elements of these Clinics Policies and Procedures for Language Access:

- The history and physical examination is recorded in the medical record at the time of the patient's admission. It shall be obtained from the patient when possible and include:
 - Chief Complaint;
 - History of Present Illness;
 - Relevant Past Medical History, Family and Social History
- Review of Systems, including a minimum review of the cardiovascular, respiratory, genitourinary and gastrointestinal systems;
- For a child or adolescent, there is mention of developmental age factors, consideration of educational needs and daily activities, height, weight, as appropriate, patient's immunization status, family's and/or guardian's expectations for, and involvement in, the assessment of, treatment and continuous care of the patient;
- Obstetrical records including all prenatal information, which may be a copy from the physician's office;

- A report of the physical examination, which must include all body systems, pelvic, rectal and breast exams, when applicable. If these are deferred, there must be statement by the physician as to the plans for follow-up or results of a recent exam;
 - A Statement of the Impression;
 - Treatment Plan; and
 - Signature of the physician (which authenticates the history and physical exam).
- There is evidence of informed consent in the patient's medical record.
 - Consultation reports contain a written or dictated opinion by the consultant that reflects an actual examination of the patient, when applicable, and the patient's medical record.
 - Nursing notes and entries by non-physicians contain pertinent and meaningful information and observations, documented on the respective forms as approved.
 - Opinions requiring medical judgment are written and authenticated only by the medical staff members in the progress notes or on consultation reports.
 - All reports of procedures, tests and their results are documented and authenticated in the medical record.
 - For those patients who are receiving continuing outpatient (ambulatory) services, a list of the following will be made upon initial presentation if possible, however, no later than the third visit (third visit - when more complete information can be listed due to continuing care):
 - Known diagnoses (significant and secondary)
 - Known or observed conditions
 - Prior procedures
 - Drug allergies
 - Medication
 - The discharge summary or final summary shall include:

- Final Diagnosis and any associated diagnosis
- Consultants
- History
- Pertinent physical findings
- All procedures performed
- Discharge medications
- The condition of the patient on discharge
- Discharge instructions, which include activity, diet, medications and follow-up appointments
- A copy of the discharge instructions given to the patient is filed in the medical record.

4.2 Patient Medical Record access:

Everyone has the right to have a copy their medical records under the Data Protection Act 1998. They have a right to view medical records if they have been amended in the last 40 days. The records should be presented in a format which a patient will understand. "As the United States becomes increasingly diverse, American hospital systems face an enormous challenge in providing quality health services to limited English speaking patients. Increasing attention to quality improvement and medical error reduction initiatives cannot overlook the critical element of effective communication between physicians and patients in ensuring successful health outcomes."[7]

Example I

PATIENT MEDICAL RECORD ACCESS FORM

PLEASE READ THE FOLLOWING:

- All requests for medical records must be made in writing.
- If the requester is not a patient, copies of supporting documents allowing access to the requested health records must be available and identification shall be verified.
- The health care provider may prepare a summary in lieu of allowing access to or copying of the entire record.

I hereby consent to the release of any and all records containing ALCOHOL/DRUG ABUSE/AIDS/PSYCHIATRIC DIAGNOSES under the same consideration as above. I understand that such information cannot be released without my specific consent, except under a Court Order.

Patient's Name (Please Print): _____ Date of Birth: _____

Address: _____

Phone #: _____

Dates of Service Needed: _____

Specific Portions Only (List): _____

Signature: _____ Date: _____

If signed by other than patient, indicate relationship: _____

WITNESS: _____

Example II

ADDITIONAL INFORMATION REQUIRED FOR
MEDICAL RECORD RELEASE FORM

Date: _____

Patient Name: _____

_____ We are unable to identify this patient. Please furnish additional information such as: birth date, maiden name, social security number and/or verification of name.

_____ We must have the ORIGINAL patient's signed and dated consent for release of specifically stated information.

_____ Blanket authorization pertaining to medical records is not acceptable.

_____ The purpose for which the records are needed must be stated.

_____ The consent for release of information must be directed to our Hospital.

_____ The consent for release of information must state the name and address of the person or agency who is to receive the records.

_____ We can only accept ORIGINAL signatures dated within 30 days from date of signature.

_____ Other: _____

Sincerely,

CHAPTER 5

PATIENT MEDICAL INFORMATION

Protected Health Information is information about a patient, including demographic information that may identify a patient that relates to the patient's past, present or future physical or mental health or condition, related health care services or payment for health care services. "Today, healthcare information systems are beginning to demonstrate that they can potentially improve quality and lower costs at the same time." [10]

5.1 Release of patient medical information:

- The medical record shall not be used in any manner that will jeopardize the interests of the patient, except when the clinic interests are a priority when necessary to defend itself, or its agents, against accusations made by patients or others.
- Medical records shall not be taken outside of the clinic, except upon receipt of a court order, specific written authorization of the administrative offices, or for record completion when accompanied by Medical Records personnel except as otherwise provided by law.
- Release of information to attorneys and insurance company investigators:
- Medical records may be inspected, or copies furnished, only upon receipt of written authorization signed and dated by the patient; guardian, next of kin, administrator, or executor, in case of death. The authorization and a statement as to date and type of information furnished shall be filed with the patient's medical record.
- Identification must be shown by the party wishing to inspect the medical record.

- A minimum charge may be made to insurance companies and attorneys wishing copies of the medical record with an additional fee per page of the medical record that is copied.
- Release of Information to Medical Staff Physicians
- Members of the medical staff may request that copies be sent to a referring physician, for which no charges will be made.
- When a patient revisits the clinic under the care of another physician, all previous records will be made available to the present attending physician on the case.
- Release to Federal Agencies
- It is not required that confidential information be released to governmental agencies without a subpoena or a written, signed authorization from the patient. (Country law prevails).
- If a person desires to inspect medical records in the name of the above agencies, and has proper authorization, identification must be verified. The requestor will also need to sign and date the authorization which has been signed by the patient. If copies are requested, there shall be no charge.
- Release of Information to Other clinics

5.2 CONFIDENTIAL INFORMATION:

Confidential information is any information that is related to a person on the understanding that this information will not disclose to others. The law assumes that whenever people give personal information to health professionals caring for them, it is confidential as long as it remains personally identifiable. The confidentiality is applied on sensitive information. The term "sensitive" is used in this guide to highlight the need for extra care in using information about mental health, sexuality and other areas where revealing confidential information is especially likely to cause embarrassment or discrimination.

Data in Clinical Studies

A Report can be issued according to the doctor's need that summarizes all the work that is done in the clinic. A doctor can issue a report according to a certain criteria (e.g How many patients he has seen during a week) figure 4.

"In small scale clinical studies, which involve frequent reference by research and medical staff to current patients' conditions, encoding and decoding information can present a significant obstacle to effective team work, and increases the risk of an error that could affect the patient's care. Use of weaker codes (such as initials) in processing research data is acceptable where patients have already given consent to the use of their information in research as well as for their care, and when it can be guaranteed that only a small number of research staff will have access to the information."[8]

DR. TOUFIC EID'S CLINIC

SMART CLINICS DIGITAL SYSTEM

Administration Area ADMINISTRATOR [1] | LOGOUT

REPORTS

Reports List

1 of 1 100% Find | Next

Select a format Export

Clinic Patients F

DR. TOUFIC EID'S CLINIC

Patient ID	First Name	Second Name	Family Name	Gender
PA0001	Abbae		Tout	Male
44	sdf	sdfsdf	sdfsdf	Male
45	sdfs	sdfsdf	sdfsdf	Male
45	Mohammad	Ali	Tabbarah	Male
48	Mohammad	Jamil	Abdel Moati	Male
PA0002	Ali	Jamil	Toutayo	Mala
50	Tarek	Ahmad	Kabbani	Male

SMART CLINICS

SEARCH PATIENT ID FOR

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DR. TOUFIC EID'S CLINIC
Specialty Clinic Center, Suite 78, Maanan St. fadng Gafnor Center, Hamra,
BEIRUT - LEBANON

Patient Master Index | Appointment System | Change Password | Clinic Switcher

Figure 4

- Data or information from a record is considered confidential if it may have adverse effect upon an individual's family. It may be information that:
 - Could be prejudicial to a person's mental or physical health.
 - An individual could not be expected to fully understand or accept because it is contrary to his/her own views.
 - Contains implications requiring explanation or interpretation to assist in its acceptance and assimilation in order to preclude misinterpretation, adverse reaction, or retaliatory consequences toward reaction, or retaliatory consequences toward others, or
 - Could be construed as personally embarrassing to an individual or a member of his/her family.
- The four (4) principal categories of confidential information are as follows:
 - Medical information including information concerning alcohol abuse, drug abuse, social diseases, sickle cell anemia and/or HIV.
 - Psychological/psychiatric information.
 - Information in criminal, civil or administrative records.
 - Child abuse information for those patients considered to be a minor.
- Medical records meeting any of the above criteria will be flagged with a confidential sticker.
- All correspondence is logged upon receipt in the Correspondence Log. This will enable ease of answering telephone inquiries without pulling the patient's medical record. The information logged would be the patient name, clinic number, the requestor's name, and the date of receipt of inquiry, the material sent and the date mailed. This log shall be an alphabetical file in a notebook, for ease of access.
- The request is then verified for validity; signatures, dates, etc. If valid, the chart and request will be forwarded to the copy service for processing.
- The original request and consent to release information is filed in the patient's chart. It shall contain the date, the information released and the signature of the person releasing the information.

5.3 Violation of confidentiality:

Violation of confidentiality related to dishonest work which describes a variety of unacceptable behaviors that are inconsistent with the health professions' educational process whether in academic matters or clinical education, experience has shown that persons indulging in one form of dishonest behavior are likely to extend these behaviors and attitudes into all spheres of their work. Dishonest work includes the following clinical behaviors: shortage of honesty in medical record-keeping and in the reporting of patient care events, improper or dishonest handling of medical records, treatment records, procedure films, radiation exposure records and clinical education records. When data or information confidentiality/security becomes breached by an individual in the employ of the clinic, the following processes will be followed:

- Any staff member witnessing another staff member breaching data/information confidentiality will report the incident to the Doctor's clinic.
- A meeting will be held between the responsible staff member and the Doctor. Records to determine the nature of the breach of confidentiality. Dependent upon the nature of the breach (intentional/unintentional) the appropriate discipline policy will be followed.
- Any staff member who knowingly/willingly breaches confidentiality/security of data or information may receive at a minimum a written disciplinary warning, at a maximum, possible termination.
- If the breach of confidentiality was committed accidentally, with no intent to violate confidentiality or security of data/information, all efforts will be made to provide education to the responsible staff member in the clinic to eliminate repeat incidents.
- Any staff member who obtains knowledge that data or information confidentiality or security has been breached will report the incident to the Doctor.
- The Doctor will research the incident to determine causative factors in an effort to problem solve and plan for future prevention.

CHAPTER 6

THE PATIENT FLOW STEPS AT THE CLINIC

- Patient willing to be examined at the clinic
 - Book-in for appointment with a specialist clinic
 - Get an ID card with the clinic
 - Cash money or Insurance papers.
 - The patient will be examined, investigated when necessary and treated with medication and if needed with a surgical procedure by appointment, then discharge home
 - The patient will be examined, investigated when necessary and treated with medication and if needed with a surgical procedure by appointment then follow up in the clinic
 - The patient will be examined, investigated when necessary and treated with medication and if needed with a surgical procedure by appointment then refer for consultation to another physician
 - The patient will be examined, investigated when necessary and treated with medication and if needed with a surgical procedure by appointment then refer to another physician at another clinic from these polyclinics or elsewhere

- Patients referred from a hospital to the clinic
 - Same procedure as first seen in the clinic

- Patients referred from private clinic of this polyclinic to the smart clinic
 - The patient needs to have his ID and the insurance papers, or cash money.

Patients referred from a non-BGUH physician for use of Investigation facilities or Admission.

- The patient needs to have an investigation orders slip from the physician
- The patient needs to have his ID and the insurance papers, or cash money.
- In case of admission; through OPD, Private clinic, or ER.

- Patient referred from a hospital

- The patient needs to have a copy of his medical file or detailed report from the referral hospital arranged by his physician in that hospital
- The patient needs to have his ID and the insurance papers, or cash money.

Example I

STATEMENT OF CONFIDENTIALITY

It is the purpose of the clinic to protect the confidentiality of the medical records and privacy of all patients.

The patient has a legal right to privacy concerning his/her medical record. It is the obligation of the Medical Records Department Personnel to uphold that right. For this reason, no member of the clinic, or any person to whom medical records and patient information are available, may in any way or to anyone violate this confidentiality except with the written consent of the patient and his/her physician and in accordance with the clinic policy.

I have read the above statement and agree to abide by it wholeheartedly.

CONTRACTOR

DATE _____

WITNESS

DATE _____

FUTURE WORK AND CONCLUSION

This project employs virtual reality techniques to improve the ability of elderly individuals at high risk for falling to step over obstacles. Recently, polyclinics and other outpatient services as well as the workload of public sector doctors in Rafic Hariri University Hospital have been discussed and highlighted on various occasions by the media, doctors and even the government lately. Are doctors overworked? Are waiting times too long? Are patients going to clinics unnecessarily? The polyclinic is perhaps the simplest health care institution to examine. Here polyclinic will facilitate the work of doctors as well as the benefits for patients. Data will be backed up according to a certain schedule and the paperless clinics will be initiated. Harness IT improves staff productivity and enhances patient care. The user-friendly design has won over all the staff.

Future work in this project area could include employing this simulation technique with walking aids such as canes and crutches. Other potential areas of research include the study of improvements in fitness and gait through simulation of walking situations for ambulatory nursing home patients and teaching environmental factors and modifications to avoid falls. The system could provide an enjoyable and safe environment for general exercise, a safe setting for "wanderers", or a simulated practice session for way finding and familiarization of nursing home patients with their facility. Moreover, future work includes medical imaging which is often thought of as a way of viewing anatomical structures of the body. Indeed, x-ray computed tomography and magnetic resonance imaging yield exquisitely detailed images of such structures. It is often useful, however, to acquire images of physiologic function rather than of anatomy. Such images can be acquired by imaging the decay of radioisotopes bound to molecules with known biological properties. This class of imaging techniques is known as nuclear medicine imaging. Healthcare stands today poised on the brink of an IT revolution. Improvements in software and hardware, combined with greater affordability, mean that both hospital doctors and researchers now have unprecedented access to a vast range of data generated by a seemingly ever-increasing palette of imaging techniques. Add to that the increasing

information that will soon begin to flow from the human genome project and the magnitude of the imminent overload becomes clear

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