**CS640 – ADVANCED DATABASE SYSTEM**

**PROJECT PHASE 1**

**BY,**

**RAMTEJ GAJULA**

**JANGAM RAJIV ROY**

**RAVI KRISHNA TEJA JALLA**

**NEERAJA KARETI**

**RAVI KRISHNA TEJA JALLA**

**Overview of Project:**

To develop a database system to manage the information regarding the patient who visits in the emergency care.

**Background:**

1. Hospital Database Management System:

Healthcare database is collection and storing data related to patients treatment, associated persons & accessories. The data stored in database with the ease of retrieval, update and analyze whenever needed. Since healthcare database differs from other database which includes types of diseases, nature of medicines, methods of treatments, billing procedures and many. It is bit challenging to develop appropriate database. Moreover, the database administrator should know more about medical records, methods and healthcare schemes. One should be trained as per requirements in healthcare and has bit different responsibility other than core database administrator. Different methods and techniques are implemented for the best in healthcare industry, still it needs everyday review and continuous amendments in the technology.

1. Comparing Paper-based with Electronic Patient Records: Lessons Learned during a Study on Diagnosis and Procedure Codes:

In this papers objective measures are required to evaluate the quality of documentation in an EPR. Standard set of assessment criteria has been approved or adopted, and a gold standard for comparisons currently is missing. It is extremely difficult pragmatically to take the patient per se as the gold standard for interpretative coding and abstraction entities such as diagnoses. Thus, parallel use of electronic and paper-based patient records can lead to inconsistencies in the medical documentation.

1. Managing your patients' data in the neonatal and pediatric ICU [electronic resource] : an introduction to databases and statistical analysis / Joseph Schulman

Clinicians manage a lot of data - on assorted bits of paper and in their heads. The technical methodology to make this crucial aspect of good clinical practice understandable and usable for all health care workers. Computer technology has been relatively slow to transform the daily work of health care, the way it has transformed other professions that work with large amounts of data. Each day, we do our work as we did it the day before, even though current technology offers much better ways. Here are much better ways to document and learn from the daily work of clinical care. Here are the principles of data management and analysis and detailed examples of how to implement them using computer technology. To show you that the knowledge is scalable and useful, and to get you off to a running start, the book includes a complete point of care database software application tailored to the neonatal intensive care unit (NICU). With examples from the NICU and the pediatric ward, this book is aimed specifically at the neonatal and pediatric teams. The accompanying software can be downloaded on to your system or PDA, so that continual record assessment becomes second nature 8211; a skill that will immeasurably improve practice and outcomes for all your patients.

1. Hospital discharge and readmission

The decision whether or not a hospitalized patient is appropriate for discharge requires evaluation of multiple factors involving medical, as well as psychosocial, logistic, and economic considerations. Instruments for determining suitability for discharge that have been appropriately validated are not available.

1. Research Using Emergency Department–related Data Sets: Current Status and Future Direction.

Data sets contain much data collected directly from health care facilities, individual patient records, and multiple other sources that have significant potential impact for studying and improving the health of individuals and the population. These data sources have been used for multiple epidemiologic, health services utilization, and other research studies.

1. Emergency Medical Services (EMS) Data Integration to Optimize Patient Care

This resource features how emergencies medicinal administrations (EMS) and wellbeing data trade (HIE) associations can cooperate to improve information sharing. A patient's history is basic to fitting consideration in the field. EMS offices progressively give planned non-developing consideration in association with neighborhood local health care systems. Passing on data accumulated at the scene can be essential to the accepting office and can impact quiet mind choices.

EMS is a basic piece of the medicinal services systems. The 2011 National EMS Assessment uncovered that the more than 825,000 credentialed EMS specialists in the United States react to an expected 36.5 million calls for administration and transport 28 million patients to medical clinics every year.

1. The Effect of Emergency Department Crowding on Patient Outcomes

Emergency department (ED) crowding has been depicted as the most significant issue that jeopardize the dependability of human services framework around the world. The ordinarily examined reason for swarming is interest for ED care. Somewhere in the range of 1997 and 2007 the expansion in complete yearly ED visits in USA was practically twofold and between 2001-2008 was 60% quicker than would be normal from populace development. Overcrowding was also associated with increased door-to-balloon and door-to-needle times for the treatment of acute ST-Elevation [Myocardial Infarction](http://www.imedpub.com/articles/the-effect-of-prodromal-angina-pectoris-on-shortterm-prognosis-of-acute-st-elevation-myocardial-infarction.pdf) (STEMI). Further research is expected to completely comprehend the exact system through which crowding adversely influence understanding consideration. Approaches should likewise be focused to adjust of crisis care framework in the vacillation of contributions for better consideration that converts into better results for patients visiting EDs.

1. Research Using Emergency Department–related Data Sets: Current Status and Future Directions

This article speaks to the procedures from that session, basically concentrating on crisis division (ED)- related informational indexes and incorporates instances of the utilization of an informational index dependent on ED visits for research purposes. ED-related informational indexes can be ordered by their information accumulation strategies. The essential accumulation techniques are 1) finished specification, 2) populace based and supplier based example overviews, 3) non– populace based libraries, and 4) connected information. These information sources have been utilized for different epidemiologic, Health services, and other research contemplates and have huge potential for use by crisis medicine researchers in the near future.

# Data Resources in the Health Sciences

# This guide gives a prologue to the universe of information in the Health sciences. On the Find Data tab, you will discover inks to a few Health sciences related storehouses where you can get to information for your own examination.

[**Preserve/Store Data**](http://guides.lib.uw.edu/content.php?pid=376631&sid=3084693) - find resources to assist researchers in identifying host sites to store data

[**Describe Data**](http://guides.lib.uw.edu/content.php?pid=376631&sid=3084704) - find resources to help researcher’s process data in preparation for storage or sharing

[**Visualize Data**](http://guides.lib.uw.edu/content.php?pid=376631&sid=3084692) - find resources that help researchers visualize data

[**Share Data**](http://guides.lib.uw.edu/content.php?pid=376631&sid=3234722) - find resources that help researchers think through the considerations of sharing data; includes links to NIH Data Sharing Policy

[**Cite Data**](http://guides.lib.uw.edu/content.php?pid=376631&sid=3084694) - find resources that provide examples of ways to cite data.

The most flawless kind of electronic clinical information which is obtained at the purpose of consideration at a therapeutic office, medical clinic, facility or practice. Frequently alluded to as the electronic restorative record (EMR), the EMR is commonly not accessible to outside scientists. The information gathered incorporates authoritative and statistic data, analysis, treatment, physician

Endorsed drugs, research center tests, physiologic observing information, hospitalization, tolerant protection, and so on.

1. A Conceptual Data Model for Health Information Systems

The improvement of Health Information Systems in view of double models enables changes to be led in the layer of paradigms, diminishing conditions on programming designers. In any case, we distinguished an absence of reasonable models to speak to two-level database elements. This paper proposes a novel applied information show, called ArcheER, which is a double demonstrating methodology and means to diminish repetitive substances and assurance the making of one of a kind electronic wellbeing records. ArcheER is an augmentation of the Substance Relationship display and depends on paradigms. A case displaying instrument dependent on ArcheER is sketched out.

ArcheER is an expansion of the ER information show on the grounds that this model has been perceived in writing as a basic and effective methodology for the information prerequisites, giving the deliberation required to speaking to the ideas of paradigms through its graphical documentation. As primary commitments, we feature a decrease in the portrayal of excess substances and an addition concerning the demonstrating of substances portraying learning.

**Reference:**

1. <https://www.ijcsmc.com/docs/papers/April2016/V5I4201602.pdf>
2. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3744773/>
3. <https://www.uptodate.com/contents/hospital-discharge-and-readmission>
4. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC212784/>
5. <http://semoencore.iii.com/iii/mobile/record/C__Rb1564646__Shealth%20care%20database%20system%20%20__P0,2__Orightresult__U__X1?lang=eng&suite=def>
6. <http://worldcomp-proceedings.com/proc/p2016/SER3430.pdf>
7. <http://guides.lib.uw.edu/hsl/data/findclin>
8. <http://www.hsj.gr/medicine/the-effect-of-emergency-department-crowding-on-patientoutcomes.php?aid=3798>
9. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3744773/>
10. <https://www.healthit.gov/sites/default/files/emr_safer_knowledge_product_final.pdf>

**Project Idea:**

|  |  |
| --- | --- |
| **Database users** | **Functionalities** |
| Patient Database | * Retrieving patient prescription and payment details. * Adding additional information to their patient profile. * Modifying the patient record when needed. * Deleting the patient record when not needed. * Providing read only access while viewing the prescription. * History of patient records should be maintained. |
| Nurse Database | * Accessing to the patient records. * Updating the patient records with comments. * Removing the nurse record when they no longer exist in hospital. * Maintaining the time log for nurse. * Providing read and write only access to the patient records, but should restrict the write option for patient profile (Patient details) |
| Doctor Database | * Accessing to the patient records. * Updating the patient records by uploading the prescription to patients. * Removing the doctor record when they no longer exist in hospital. * Maintaining the patient log details for a particular doctor. * Providing read and write only access to the patient records, but should restrict the write option for patient profile (Patient details) |
| Payment Database | * Maintaining the payment details for each patient. * Updating the payment details of patients after every visit. |
| Insurance Database | * Keep track of insurance details for each patient. * Update the insurance record for each visit of the patient. |
| Hospital Admin | * Add the patient details when patient arrives first time to hospital or any non-register patient. * Retrieve the details of patient who already registered or taken treatment from hospital. * Maintain all the patient, doctor and nurse details. * Modify any of the patient, doctor and nurse record when needed. * Delete any of the patient, doctor and nurse record if necessary. |