



Hospital Database Management System

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Abstract: A database is a collection of data in an organized manner so that its content can easily be accessed, retrieved, managed and updated as per need. It is think of electronic filing system. DBMS (Database Management System) is the keeper of database facilitating the creation & maintenance of database. It Provides fast secure access to the data in the database. A database contains objects which are: tables, views, Indexes, Sequences, Types, packages, procedures, Functions, Triggers, Database links, Materialized view and synonyms.

Introduction:

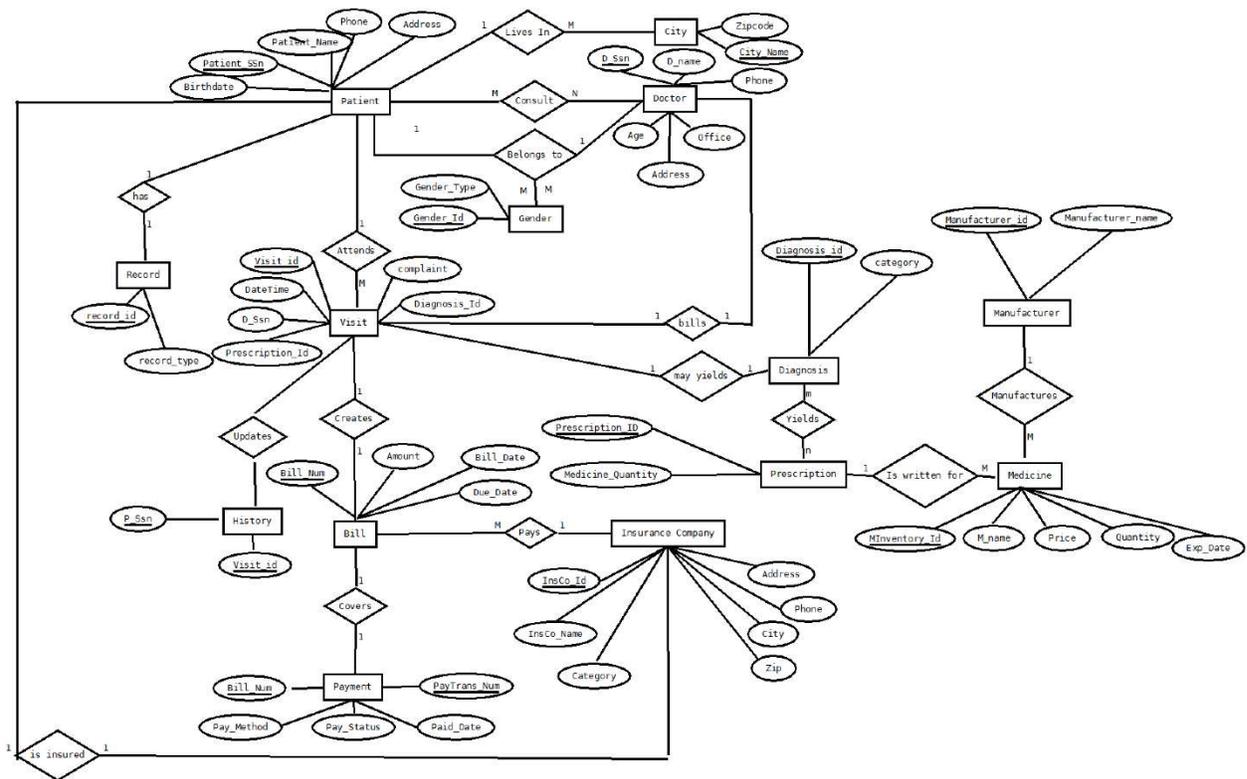
Hospital used to store their data in traditional file system like :Microsoft Excel (compatible with windows),Open office(compatible with windows/MAC/Linux),Google docs spreadsheets(need internet access any time).The main drawback of traditional file system is data definition is part of application program which works only with specific application. Files are design driven, they require change in design & Coding whenever new kind of data occurs.

Healthcare database differs from other database as it contains data records which include patients, treatment & Medical history .Few data records are as below:

- 1) Patients Personnel Information
- 2) Medical history
- 3) Details about life style and family medical history
- 4) Laboratory test results
- 5) Medication prescribed
- 6) Reports about result of operations and Medical Procedures
- 7) Disabilities and allergies
- 8) Records about health insurance or government programmers. etc. etc.

The database administrator is often called as _Medical Record Administrator_ who has additional responsibility of managing patient related information, accreditation and re- imbursement information too. The Entity of the database may be below:

- 1) Doctors
- 2) patients
- 3) Location
- 4) Gender
- 5) Visit
- 6) History
- 7) Insurance
- 8) Bill
- 9) Payments
- 10) Diagnosis
- 11) Prescription
- 12) Records
- 13) Medicines
- 14) Manufactures of Medical Equipment. etc. etc.



Challenges in Implementing Databases in Healthcare:

As per entity, Constrains key & Domain would vary. There are few barriers for acceptance for the implementation of database in healthcare. Main barriers for the implementation of database in healthcare can be pointed out below:

1. The reimbursement mechanism
2. There is broad interest in the capture of population data for those diseases which are so costly and prevalent, still health care policy does not cover for insurance for them. Hence treatment delivery are intertwined.
3. To match the patient need to the available services by comprehensive care, needs special type of database. In this scenario, Multi-dimensional view of the database is implemented using a Network type database called as IDMS (Integrated Database Management System).
4. The Vocabulary consists of the clinical terms embodied in the schema which is bit different than normal words. E.g. cancer treatment techniques, chemotherapy, Radiotherapy etc.
5. Within single healthcare database, Various departments persists which needs department specialty clinical database. E.g. cardiology, urology, Radiology, General surgery, gynaecology, haematology, maternity, nephrology, Neurology, ophthalmology, orthopaedics, Pharmacy, Physiotherapy etc.
6. It has to maintain patient status data for routine, emergency & monitoring visits. The database system should also help for scheduling appointments and billing purpose.
7. Academic Rheumatology Clinic at Stanford university has developed database where signs and symptoms of new patients can be compared with those of treated patients. The database structure of these two system differs drastically. The former reduces the patient's past history to a concise snapshots for an easy review whereas the later maintains a detailed time-oriented history for analysis. It concludes from these examples that the database model of healthcare is determined by their medical view ,rather than the facilities provided by the

database system. Feedback from the treatment history and method of treatment and its impact is very useful for research. For research statistical analysis and tabular format is preferred rather than general database type. Encoding of data is very much crucial. Data to be encoded includes diagnosis, stages of disease, Patient demographic characteristics etc.. Research always demands rapid access to large quantities of data. There is cost-effectiveness issue as the technology for the specific diseases needs to be altered accordingly. The information obtained from the database plays a vital role for decision making and planning process.

As per technology advancement, we can enhance the healthcare database better and efficient. The cost of microprocessor and computer memories has been drastically reduced. The mass storage device, storage disk & Solid state technologies are affordable. New Technologies like _data entry_ for instances can be accomplished using various methods:

1) Dictation & transcription 2) Free text typing 3) Forms for encoding of data 4) selection of items on menu presented on display screen.

Further advancement, Automatic scanned of typed documents and computer controlled management of video images are better technologies that are apt to affect medical data management soon.

Development in software advancement, many alternatives of information structuring are opted as below:

1)Categorized free text 2) Hierarchy structured data 3) Sequential files 4) Relational database 5) Network structured database

Most software professional are eager to opt for relational database as the technology has well trained professional and much expertise & user-friendly.

Conclusion:

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. Hence research & development is the core need and day to day improvements with amendment which is vital things for the healthcare database system.

-----The end-----

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