

HOSPITAL MANAGEMENT SYSTEM

Abstract - The purpose of the project entitled as "Hospital Management System" is to computerize the front office management of hospital to develop software which is user friendly simple, fast, and cost effective. The main function of the system is register and store patient details and doctor details and retrieve these details as and when required and also to manipulate these details meaningfully. Traditionally, it was done manually. The Hospital Management System can be entered using a username and password. It is accessible by an Admin, Doctor, & Receptionist. Only they can add data to the database. The data can be retrieved easily. The data are well protected for the personal use and makes the data processing very fast.

Government of India has still aimed at providing medical facilities by establishing hospital. The basic working of various hospitals in India is still on paper as compared to hospital in European countries where computer have put in to assist the hospital personals their work. The concept of automation of the administration and management of hospital is now being implemented in India also, with large hospital like APPOLO and AIIMS in Delhi, ESCROTS in Chennai, having automated their existing system.

Computers are not only used to increase the efficiency in all fields ranging from fixing the appointment with the Doctor to keeping the records of the patient.

I. INTRODUCTION

Health of citizen is the wealth of nation. India has contributed the most ancient medical science "ayurveda" to the world besides other medical sciences. this field has witnessed a rapid metamorphosis in all of its sections. hospital management system is designed to improve the quality and management of hospital in the areas of clinical process analysis and activity-based costing. Hospital management system enables you to develop your organisation and improve its effectiveness and quality of work. Managing the key processes

efficiently is critical to the success of the hospital helps you manage your process.

The hospital management system can be entered using username and password. it is accessible by an admin, doctor & receptionist. Only they add data to the database. The data can be retrieved easily. The data are well protected for personal use and makes the data processing very fast. Hospital management system is powerful, flexible, and easy to use and is designed and developed to deliver real conceivable benefits to hospital.

The project hospital management system includes registration of patients, storing their details into the system using database. The software has the facility to give a unique id for every patient and stores the details of a patient using the name id.

Hospital management system is designed for multi specialist hospital, to cover a wide range of hospital administration and management processes. The system also provides excellent security of data at every level of user system interaction and also provides robust and reliable storage facilities.

II. BACKGROUND

The provision of high-quality, affordable, health care services is an increasingly difficult challenge. Due to the complexities of health care services and systems, investigating and interpreting the use, costs, quality, accessibility, delivery, organization, financing, and outcomes of health care services is key to informing government officials, insurers, providers, consumers, and others making decisions about health-related issues. Health services researchers examine the access to care, health care costs and processes, and the outcomes of health services for individuals and populations.

The field of health services research (HSR) is relied on by decision makers and the public to be the primary source of information on how well health systems in the United States and other countries are meeting this challenge. The "goal of HSR is to provide information that will eventually lead to improvements in the health of the citizenry."¹ Drawing on theories, knowledge,

and methods from a range of disciplines,² HSR is a multidisciplinary field that moves beyond basic and applied research, drawing on all the health professions and on many academic

disciplines, including biostatistics, epidemiology, health economics, medicine, nursing, operations research, psychology, and sociology.

Health services research is the multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and

personal behaviors affect access to health care, the quality and cost of health care, and ultimately our health and well-being. Its research domains are individuals, families, organizations, institutions, communities, and populations.

More specifically, HSR informs and evaluates innovations in health policy. These include changes in Medicare and Medicaid coverage, disparities in access and utilization of care, innovations in private health insurance (e.g., consumer-directed health plans), and trends among those without health insurance. The health care industry continues to change, and HSR examines the impact of organizational changes on access to care, quality, and efficiency (e.g., growth in for-profit hospital systems). As new diagnostic and treatment technologies are introduced, HSR examines their impact on patient outcomes of care and health care costs.

The definition of HSR also highlights the importance of examining the contribution of services to the health of individuals and broader populations. HSR applied at the population level is particularly important in understanding health system performance and the impact of health policy on the public's health. In the United States, the National Healthcare Quality Report, National Healthcare Disparities Report, and Healthy People Year 2010 exemplify our capacity for monitoring quality and assessing change. These reports tell us that the American quality of care is inconsistent and could be substantially improved. The associated cost of health care services is monitored by the Centers for Medicare & Medicaid Services (CMS). CMS reports tell us that American health care is the most expensive in the world, consuming approximately 16 percent of America's gross domestic product.

Beyond health policy, HSR examines the process of care and the interactions of

patients and providers. For example, HSR methods have been developed to describe doctor-patient communication patterns and examine their impact on patient adherence, satisfaction, and outcomes of care.

III. DATASET AND DATA MANIPULATION

Healthcare information systems typically reflect a process- and patient-oriented view of the business. The raw inputs of healthcare data often exist in different settings and systems, such as administration, clinics, laboratories, financial, operational, research and so on. The architecture uses a host of independent systems on different platforms, which share information in a limited way, if at all. As growth, mergers and acquisitions reshape information networks, it's common to see multiple, incompatible platforms even within a single functional area.

Health Database Organizations (HDOs) hold considerable promise as a reasonably comprehensive source of the information needed to:

- assess the health of the public and patterns of illness and injury;
- identify unmet regional health needs;
- document patterns of health care expenditures on inappropriate, wasteful, or potentially harmful services;
- find cost-effective care providers; and
- improve the quality of care in hospitals, practitioners' offices, clinics, and various other health care settings.

The term database embraces many different concepts: from paper records maintained by a single practitioner to the vast computerized collections of insurance claims for Medicare beneficiaries; from files of computerized patient encounter forms maintained by health plans to discharge abstract databases of all hospitals in a given state; from cancer and trauma registries maintained by health institutions and researchers to major national health survey data of federal agencies. As commonly used and meant in this report, a

database (or, sometimes, data bank, data set, or data file) is "a large collection of data in a computer, organized so that it can be expanded, updated, and retrieved rapidly for various uses" (Webster's New World Dictionary, 2nd ed.).

Although databases may eventually be linked (or linkable) to primary medical records held by health care practitioners, this report addresses databases composed of secondary records.² Secondary files are generated from primary records or are separate from any patient encounter (as in the case of eligibility or enrollment files for health plans and public programs). They are not under the control of a practitioner or anyone designated by the practitioner, nor are they under the management of any health institution (e.g., the medical records department of a hospital). Furthermore, they are not intended to be the major source of information about specific patients for the treating physician. Secondary databases facilitate reuse of data that have been gathered for another purpose (e.g., patient care, billing, or research) but that, in new applications, may generate new knowledge.

MODULES OF HOSPITAL MANAGEMENT SYSTEM

The entire project mainly consist of 5 modules, which are:-

•ADMINS

1. Admin activity
2. Receptionist management
3. Doctor management

•DOCTORS

1. Appointment
2. Add doctor
3. Delete doctor
4. Doctor activity
5. Patient details
6. Search doctor
7. Update doctor
8. View doctor

•MAIN

1. Admin
2. Connector
3. Doctor
4. Hospital
5. Receptionist

•PATIENT

1. Delete patient

2. Add patient
3. Patient activity
4. Search patient
5. Update patient

•RECEPTIONIST

1. Receptionist activity
2. Add receptionist
3. Choose doctor
4. Choose patient
5. Delete receptionist
6. New patient
7. Patient management
8. Search receptionist
9. View receptionist
10. Update receptionist

IV. VISUALIZATION OF DATA

Healthcare visualizations are similar to today's popular infographics except the data they show is specific to healthcare. With their easy-to-understand graphical representation of complex data, healthcare visualizations can be used by anyone involved in healthcare improvements. In specific, their format can be used as a spark to help the leaders of health systems move from a passive understanding of the data to active support of data-driven quality improvement recommendations. But simply showing the visualizations won't be enough. Instead, those who are using the healthcare visualizations need to be taught, shown, and involved to fully understand their value.

The visualization we came up with to meet this goal is an interactive web application with a map on which individual message's geolocation can be shown, with a section on the left that contains a word cloud for each of the clusters that are generated by the data processing part of the system. As new message group is processed, the display is refreshed with new word clouds, and the corresponding geolocation pins for the messages also change.

1.

Health informatics systems are evolving with an aim to revolutionize health and healthcare programs worldwide. However, turning this hope-filled vision into a reality will take

enormous effort from thousands of designers, analysts, software engineers, usability specialists, and medical professionals. Albeit challenging, the role of information visualization and visual analytics processes is gaining importance. These algorithms, interactive designs, and analytic processes support exploration, monitoring, insight discovery, professional collaboration, and comprehensible presentations to patients, clinicians, policy makers, and the general public.

Data visualization is the art of representing data in a pictorial or graphical format. Analyzing patterns and trends from large data sets can be a herculean process. Data visualization helps in simplifying this process and allows decision-makers to derive analytical results from information presented visually. Patterns, trends and correlations that might go undetected in text-based data can be exposed and recognised easier with data visualization.

Critical building blocks of healthcare analytics are data analytics and visual analytics. Both consist of systematic.

Today, data visualization solutions can be found everywhere in healthcare systems from hospital operations monitoring and patient profiling to demand projection and capacity planning. However, recent technological developments have made it easier to work with data than it has ever been in the past in case of business intelligence as well. Business Intelligence (BI) can be described as “a set of techniques and tools for the acquisition and transformation of raw data into meaningful and useful information for business analysis purpose”.

Now, it's not necessary to work with complex data sets that take a long time to sort and make sense of. Contemporary data dashboards allow users to access data in a visual manner that allows for faster and more accurate business decisions to be made. The payoff from joining the big-data and advanced-analytics management revolution is no longer in doubt.

1. Make the reports/visualizations relevant based on the user's role, identity and concerns. Each set of users—clinical, financial, executive, IT, marketing, etc.—requires different metrics. The more specific the visualizations are, the more actionable they will be. In many cases, business users will be looking to answer a specific question or set of questions. For example, management might want to understand the financial and clinical impact of standardizing on a particular brand of knee replacement components. A visualization designed to answer that question can demonstrate the risks, rewards and success rates of various components currently being used to help the organization make the right decision.

2. Begin with the end in mind. This may seem an obvious piece of advice, but be sure to communicate with business users what they need to see or want to accomplish *in advance* of structuring the report. And as a general rule, aim for no more than three to five key performance indicators.

3. Make visualizations easily accessible by users. Circling back to our observations about today's mobile healthcare landscape, this is especially important for physicians and nurses who are constantly on the move. While they may occasionally be at a PC or laptop, today there is a high likelihood that they will be using a tablet or smartphone to access the dashboard/report. Incorporating responsive design techniques that recognize the type of device being used will generate far better results and satisfaction than a “one size fits all” approach.

V. CONCLUSION

Since we are entering the details of the patients electronically in the "Hospital Management System", data will be secured. using this application, we can retrieve patient's history with a single click. Thus, processing information will be faster. It guarantees accurate maintenance of patient details. It easily reduces the book keeping task and thus reduces the human efforts and increases accuracy speed.

Hospital management system is essential for maintaining details about the doctor, patient, etc we understand by using of hospital management system project the work become very easy and we save lot of time. Hospital administrator would be able to significantly improve the operational control and thus streamline operations. This would enable to improve the response time to the demand of patient care because it automates the process of collecting, collating and retrieving patient information. Accounting sometimes becomes awfully pathetic and complex. This product will eliminate any such complexity.

REFERENCES

