

HMS—A Mouse Click Away

Increase in quality consciousness and to provide superior patient care, an HMS system is the most basic application needed in a hospital

■ Shreedevi Menon

TILL about five to six years ago, there were just a handful of IT providers who saw the boon that IT and various allied systems would bring to the healthcare industry. And the number of hospitals implementing such systems was fewer. Today, IT is as much a part of a healthcare system/hospital, as is a doctor or a nurse. The management of healthcare today, is driven by the need to balance quality of care and efficiency. One approach to operational and clinical productivity is through the adoption of best practices. Traditional Hospital Management System (HMS) was designed to streamline financial management and automate manual processes, resulting in an administrative

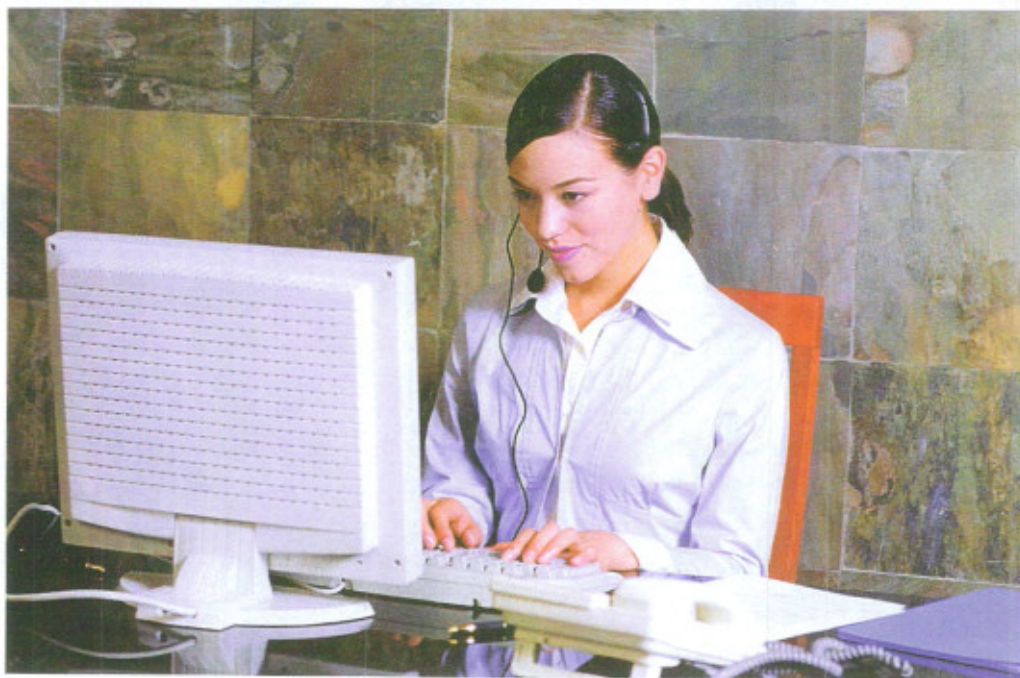
system with limited benefits. Since managing the key processes efficiently was critical to the success to the hospital, there was a need for better models of IT systems that would balance quality of care, services and costs.

Just as the nervous system is important to the human body, HMS is central to any hospital. As hospitals come under fierce competition and as customer's demand for better service delivery standards increases, information systems play a vital role with respect to patient care. A basic installation for any hospital, HMS is an automating complex administrative, financial and clinical process system that provides

for better management and patient care. It offers comprehensive patient care, in a systematic and transparent manner, with an emphasis on capturing clinical data for research and analysis. Moreover, it provides commercially viable solutions and integrates them with the existing IT infrastructure to offer better healthcare through optimum utilisation of resources.

Why HMS?

The biggest strength of such a system is that it bridges the gap between the healthcare provider and receiver. Implementing an HMS is not only useful but also essential to provide prompt and accurate information as well as service to patients and relatives, help doctors, nurses and paramedic staff to take decisions based on correct patient medical records. Dr Ashish Dhawad, CEO, Medsynaptic Pvt. Ltd, Pune says, "HMS allows for personalised attention by staff, delivery of correct medicines and reports as well as precise billing, which thus reduces the chaos and trauma of the hospital visit." Large multi-speciality and super specialty hospitals cannot be run based on adhoc decisions and policies and require clear cut management strategies and policies, which are driven with the help of good integrated HMS and well trained and



■ HMS allows for personalised attention by hospital staff



motivated staff.

The hospital management benefits by better controls despite higher volumes, higher responsibilities/accountability at all levels. The hospital staff benefits as IT helps them carry out their SOPs more efficiently. There is no need to 'remember' important things, which affect patients; all important transactions are recorded systematically on the computer, which can reduce tedious and duplicate paperwork. Pradeep Saha, Head- IT Operations, Max Healthcare, Delhi remarks, "We got rid of lot of cumbersome paperwork by putting the HMS in place. With e-communication, intra and inter department co-ordination work gets quick and most of the times is just a 'mouse click away'."

Additional features of an HMS are as follows:

- The system's registration module records the registration of each patient during the first visit to the hospital and generates a unique patient identification number. Maintenance of single ID helps in better understanding the progress of the patient
- Out patients are directed to the concerned doctors for consultation. OPMR tracks clinical data records
- In-patients are directed to the respective wards
- The wards module maintains in-patient records. An in-patient may undergo various tests and avail services such as drug administration, diet administration, surgical procedures, etc. The case sheet is prepared and maintained by this module
- During his stay in the hospital, a patient may move from one ward to another, ward to OT and back, ward to ICU and back, etc. The wards module tracks this movement
- The casualty module handles cases of medical emergencies and accidents
- Patients and their families stand to gain when a hospital is HMS enabled as the facilities (like web-based appointment bookings, web based reporting) and prompt information (availability of doctors, beds, cost estimates, etc.) greatly reduces the nuances of making appointments on the phone and checking the availability of the doctors
- The diet module handles the diet requirements of the patient as well as the instructions to the kitchen for preparation of the diet
- The labs module handles requests for various tests and makes the results available after verification. Reports can also be prepared
- The OT scheduling module handles the booking of the operation theatre and its resources. This information is made available to all the locations to facilitate convenient booking of the OT
- The billing module prepares the patient's bills, taking into account the tests undergone by the patient and the hospital services availed
- The rosters module handles the duty scheduling of the hospital staff.
- The system administration module aids the EDP department of the hospital in keeping the system running

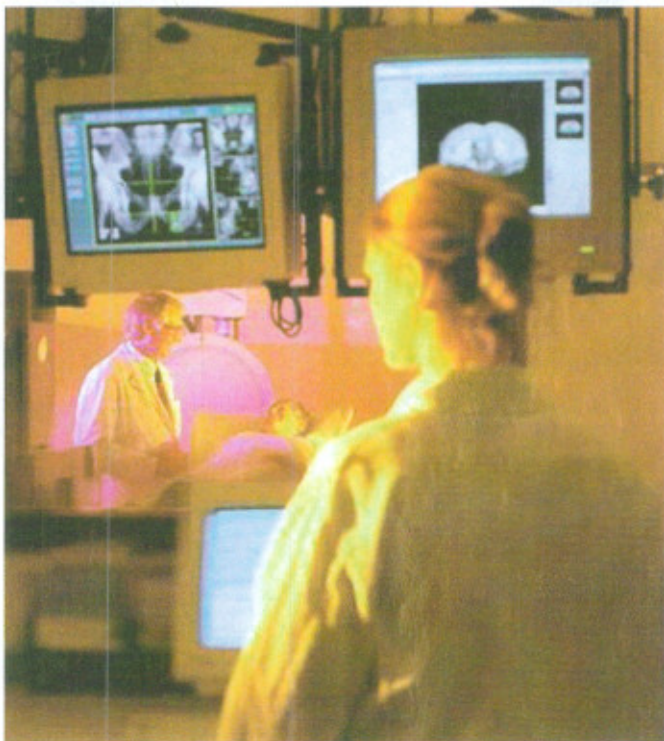
Advantages of HMS

- Improvement in patient care and hence profitability
- Improvement in administration and control
- Streamlining operations, hence greater organisational flexibility
- Elimination of revenue loss due to late/wrong billing
- Minimal inventory levels
- Promotion of collection through better follow up
- Improvement in maintaining medical records
- Provision for timely and reliable information, hence improved response time
- Reduced paper work
- Reduction in waiting time
- Lower staff turnover



Growth factors

Implementing proper HMS system in a hospital will yield benefits to the hospital management, clinical staff, non-clinical staff as well as patients. The most important factor for driving the growth of HMS in the Indian hospitals is the need to be more patient sensitive, efficient and get more productivity from high cost resources like



■ An HMS systems helps in proper scheduling of various sections and smooth working

specialists/surgeons, imaging and pathology equipment, operation theatres and ICUs and hospital infrastructure. Saha states, "This system plays a crucial role in integrating the stand-alone hospitals of Max and actually creating what is known as 'the network of hospitals'. For instance, data sharing is a vital component - patient records and prescription entered at one location can be accessed by doctors from all the locations."

Another important driver is the need to comply with quality standards and norms set by medical insurance companies, TPAs and corporates who have clear contracts and conditions for treating their members. Informs Satish Kini, Chief

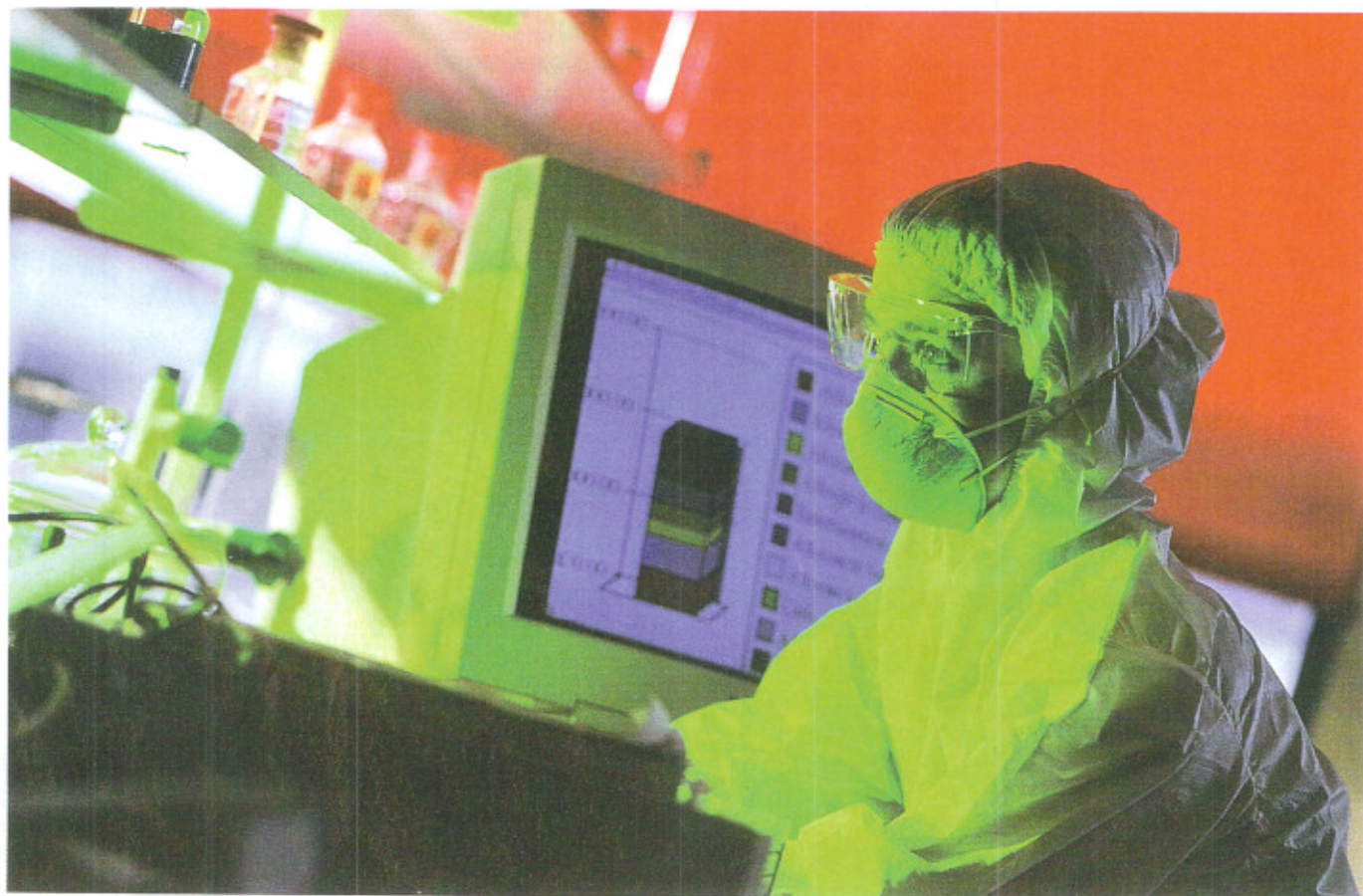
Mentor & Director, 21st Century Healthcare Solutions, "With an increasing number of people getting insured, the insistence on quality healthcare services and transparency, hospitals have no choice but to improve their patient administration and billing processes as well as make the entire treatment process more transparent and accountable."

Any hospital management, which expects to benefit from the growing trends in healthcare, must understand and implement a good HMS system. Suyash Borar, CEO, BM Birla Heart Research Centre, Kolkata says, "Our HMS addresses all the major functional areas required for hospitals. The package

has been developed on the relational database systems technology and hence, has the portability to run on virtually all standard hardware platforms. The technology also ensures data security and also offers advanced recovery features in case of failure."

Earlier the better

An HMS systems must set off right from the day the hospital commences and hence its implementation should be taken at least six months before the hospital launches its operations. Typically, a 500-bed hospital could have anything from 1,200-1,800 nursing, technical and administration staff and 250 doctors working 24x7. To co-ordinate the work of so



■ A proper HMS systems enables connectivity between all departments of a hospital



many people with different skills and provide personalised services to every patient, each day is a gargantuan task. In addition, the OTs, diagnostics, labs, etc. also have to be properly scheduled to deliver smooth medical services. In such a scenario, HMS is critical to harmonise the work of all the people, thus improving productivity of the staff and doctors, improving the quality of treatment, reducing wastages and provide accurate billing to the patients. It is therefore very obvious that HMS can significantly contribute to higher profitability.

The most important factors to be considered when implementing an HMS are:

- It should be from a recognised healthcare consulting company and not just any software development. It should be from professionals who have proven experience and expertise not only of the technical development of HMS but also of having the necessary expertise to implement it successfully in different kinds of hospitals
- The HMS should not focus or be limited to only the billing and administration and materials aspects of hospital management but should be addressing the core areas used by medical fraternity like electronic medical records in consulting rooms OTs, ICUs and wards, pathology and laboratory workflows, imaging protocols, etc. The company implementing the system must have a clear roadmap of the planning stages, the disruptions and cost of the HMS
- Having a right HMS and making it work for the hospital are two different things. Hence the HMS consulting company should be able to guide the hospital on the change management issues, as well as help in re-engineering processes so that the hospital gets the benefits of implementing these new technologies
- Besides having the right HMS consulting company, the hospital should prepare its staff, doctors and management to be ready to improve its policies and practices. The onus of making an HMS work is as much the responsibility of the hospital management and users as the HMS consultants. Hence it is important for the management to stay engaged with the HMS consultants throughout the period of implementation and not only at selection stage
- Making available the key people, taking policy decisions and ensuring that the right IT infrastructure is made available is also the duty of the management. Dr. Dhawad states, "Proper IT infrastructure must be in place to avoid breakdowns and manpower and also to correct problems when required."

Cost impact to a hospital

In hospital projects, at least three to five per cent of the cost of the project should be earmarked for an HMS. Rajesh Acharya, Zudha Tech India, points out, "For implementing the HMS it is important to

Advanced features that HMS should have

- Role based screens and security
- Multiple hospitals/sites support
- Normalised business processes
- Scalable and easily maintainable
- Database Independent
- Object oriented component based design
- Multiple session support
- Web-based features
- Interface with medical equipments/devices
- Digitised medical/patient records



know the requirements from the hospital and only when the final requirements are specified, can the actual cost of the HMS system be specified clearly." A basic version of an HMS would cost anywhere between Rs 4-5 lakhs. The cost varies from case to case and depends on factors such as the modules that needs to be included; the number of work stations; off line process/on line process; difference in cost in case there's a change in the implementation plans and lastly, the user maturity level.

The total investment on HMS can be broken up broadly into IT infrastructure costs and HMS software and implementation. Kini informs, "Typically a 200-300 bedded hospital would require about Rs 1.5-2 crores for a comprehensive HMS system. It would require deploying approximately 75-100 terminals (printers and other devices like barcode readers, epens etc.) across the hospital." The investment for this IT infrastructure including the system software like Windows, databases, etc. should be in the region of Rs 75 lakhs to 1 crore.

Similarly the investment on

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HMS depends on the kind of modules required and opted for—patient administration, hospital administration, EMR, LIS, RIS/PACS, equipment interfaces, etc., the level of sophistication of usage and the number of users. HMS costs are basically license fees, implementations fees and customisations charges. This should also be in the region of Rs 75 lakhs to 1 crore. Large amounts (Rs 2-3 crores) are required if a hospital goes in for traditional PACS for imaging.

Precautions

HMS is not purely a technical product, but also largely involves management processes of the hospital. The importance of investing into HMS is not so much about putting in the funds but about using the HMS effectively. The management must be involved in the entire process of the selection, installation and running of an HMS and not just delegate IT manager or IT consultant. Most management think they

have to understand IT to decide on an HMS; in reality they have to understand hospital management more than IT to be able to evaluate a good HMS.

Its best if the hospital doesn't think of developing an HMS in-house or with any software company, however good it is. Deal only with experienced and professional HMS companies, whose software have been successfully implemented in at least four to five similar hospitals over the last four to five years. A proper budget in terms of money, time and management responsibility is essential as also is the spending on stable hardware, networking and printers. Acharya points out, "One must keep note of important matters such as integration issues with existing equipment might be there and there may also be difficulty in training the staff to utilise the full potential of the system." But the single most important factor is the

management attitude and seriousness in implementing HMS as a mission critical part of the hospital management and planning.

Future direction

The HMS market in India though in its virgin state, is being explored. Max Healthcare is looking at exploiting the full potential of an HMS system by using telemedicine to network with the smaller hospitals from remote areas. This would help in extending the benefits of the hospital's medical expertise to the patients from urban, semi urban and rural areas.

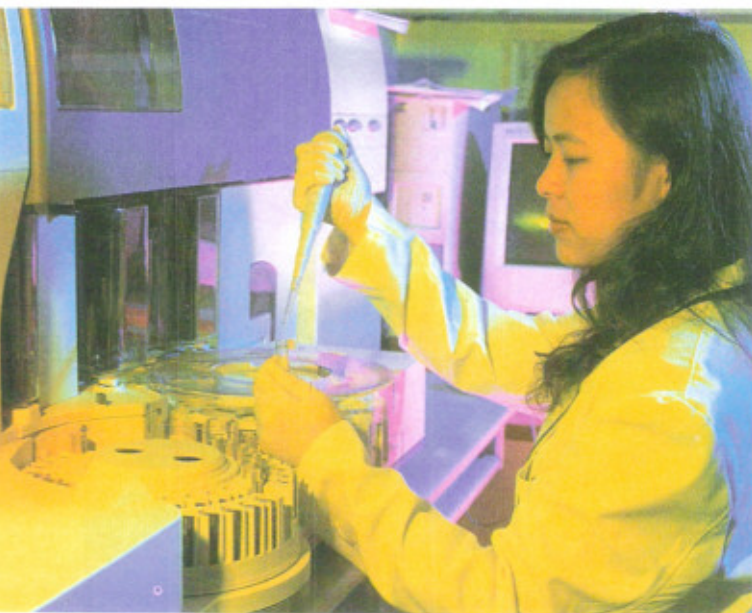
Due to increasing competition amongst private players and with corporate hospitals coming up, the existing hospitals have to clean up their act and deploy professional management systems. Medical insurance and medical tourism are the two major business drivers, which will change the face of hospital management in India. To ensure quality and improved processes, hospitals will need to install integrated HMS.

In order to run a hospital smoothly and to deliver quality healthcare services as per the philosophy and policies of the management, it is essential to have a well-oiled HMS running. With expanding network and increasing patient base, storing and sharing patient data will soon be a bigger challenge. To cope, we will have to increase our bandwidth size and bring in better systems to ensure quality patient care.

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HMS is the crux of any successful hospital



A successful HMS depends upon the modules used in various areas such as labs, OTs, etc.