COMMENTARY

Hospital management system using web technology is a demand of time

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In today's busy healthcare environment, delivering top-notch patient care relies on effectively managed healthcare facilities. Historically, people kept records by hand. Then, there were individual software solutions. A big change came with the introduction of integrated Hospital Management System (HMS), a computerized setup tailored to oversee and manage daily hospital operations. It handles tasks like managing patients, records, pharmacy bills, and lab operations. Thereafter, HMS shifts to the web-based HMS and brought real-time access, the ability for different systems to work together, patient portals, the use of mobile apps, personalized health message service and telemedicine. This has started a new era in managing healthcare.[1]

Despite these developments, many hospitals in developing nations still rely heavily on paper-based processes for their operations which is inefficient and prone to errors, especially when records need to be retrieved promptly. Implementing personalized HMS could significantly improve information management and patient care quality. Apart from this, a web-based HMS offers a robust, adaptable, and user-friendly solution tailored to provide substantial benefits to hospitals. However, the decision regarding the adoption of personalized versus web-based HMS hinges on various factors such as available resources, long-term strategies, and sustainability goals. Notably, the optimal choice tends toward web-based HMS, indicating a paradigm shift in healthcare administration. In this commentary we describes the basic requirements, advantages and challenges associated with the implementation of web-based HMS.

In the current global landscape, a web-based system appears to be the optimal choice, offering sustainability, user-friendliness, even AI integration. This integrated

HIGHLIGHTS

1. Web-based Hospital Management Systems (HMS) is the most modern technology for real time information, sustainability, systems integration, patient management and telemedicine.

2. There are challenges of ensuring a strong infrastructure, establishment costs, strict security measures, and engaging stakeholders.

3. Successful integration of web-based HMS requires bringing the knowledge gaps and skill building of the end-users through training.

system offers both strategic decision support and clinical documentation systems. Clinical support systems within web-based HMS includes Laboratory Information Systems (LIS), Radiology Information Systems (RIS), and Computerized Order Entry (COE). Additionally, there are pharmacy information systems and personal data analysis systems, which feature messaging capabilities between providers and staff, along with the ability to exchange data with other healthcare facilities.[2]

Establishing a web-based HMS relies on the existing infrastructure within a healthcare facility. Developing nations need to invest significantly in infrastructure to support the adoption of web-based HMS. A broadband internet connection with high-speed capabilities is essential for efficient data retrieval and transfer. Uninterrupted power supply is also crucial to prevent data loss or system damage due to unexpected shutdowns. Additionally, well-trained healthcare workers and information system administrators are necessary.[3, 4] However, stringent security measures must be in place to safeguard patient data and comply

with regulatory requirements. This involves implementing encryption protocols, access controls, and regular security audits to mitigate the risk of data breaches or unauthorized access.[5]

Establishing web-based HMS enhances workflow and reduces the gap in patient care availability between urban and rural areas by improving access to healthcare.[3] It facilitate networking among physicians, enable online review of patient treatment, and support accurate prescriptions. They facilitate multi-site patient record review and enhance collaboration among physicians in inpatient care, while also reducing the time required for test result transmission.

Several challenges impede the effective adoption of web-based HMS. These include insufficient knowledge of available technology, fear of workflow disruption leading to clinicians resistance, uncertainties regarding investment returns, challenging approval processes for high-capital expenditures, database issues, and differences in information technology preferences between clinicians and administrators.[4, 6]

Despite the inherent challenges the transition to web-based HMS represents a crucial advancement in healthcare administration, offering unique opportunities to enhance patient care quality. Moving forward, addressing challenges such as technology knowledge gaps and clinicians resistance will be crucial to ensuring the successful implementation and sustained utilization of web-based HMS, ultimately revolutionizing healthcare delivery.

Author contributions

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