

Application of Electronic Information Engineering in Hospital Management

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Abstract: To further enhance the overall service quality of China's hospitals and improve the trust of the majority of patients in hospitals, this paper takes intelligent hospital management as the object of study, analyzes the importance of electronic information engineering technology applied in hospital management, and discusses the specific application methods of electronic information engineering in hospital management. This aims the existing problems in the current hospital management, such as insufficient degree of informatization, data sharing difficulties, lack of professionals, etc. Corresponding improvement measures are proposed, including strengthening the construction of informatization, promoting data sharing, and cultivating professionals. It is hoped that this study will enable the majority of hospital managers to make better use of electronic information engineering technology to effectively solve the current problems faced by hospitals and to continuously improve the comprehensive competitiveness of China's hospitals.

Keywords: Electronic information engineering; Hospital management; Intelligence

Online publication: July 17, 2024

1. Introduction

The traditional hospital management mode has been unable to meet people's needs, especially in the face of sudden epidemics and emergencies, the drawbacks of traditional management methods are more obvious. Therefore, it is of great practical significance to strengthen the research of electronic information engineering applications in hospital management. In today's society, the rapid development of Internet technology and computer technology has brought great changes to all walks of life, and the medical industry is no exception. As an organization providing medical services, the hospital's management mode must keep pace with the times. However, due to the limited resources of hospitals, to ensure the interests of patients and the quality of medical care, hospital managers need to optimize the management of hospitals^[1]. To improve management efficiency, reduce costs, and ensure that patients receive high-quality medical services, this goal can be achieved by introducing electronic information engineering technology. Electronic information engineering is a comprehensive discipline involving communication, electronics, information, and other fields, and this

technology, with digitalization, networking, and intelligence as its main features, can help hospitals achieve efficient, convenient, and safe medical services ^[2]. Therefore, the application of electronic information engineering technology in hospital management can not only improve the management efficiency and service quality of hospitals but also protect the privacy and safety of patients ^[3]. With the popularity of Internet technology, hospitals can use the Internet platform to establish online consultation, booking registration, online payment, and other services, which greatly facilitate patients' medical treatment. In addition, the electronic medical record system, remote consultation system, intelligent diagnostic system, and other technical means, can improve the diagnosis treatment level and serviceability of hospitals, and provide patients with a better medical experience.

2. The importance of electronic information engineering in hospital management

2.1. Reducing medical risks and improving medical quality

With the continuous development of China's economy, computer technology and network communication technology are more widely used in all walks of life. However, due to the large amount of information within the hospital, if the traditional way of management is used, it will lead to inefficient information transfer and is prone to problems such as misinformation. This will not only affect the diagnosis and treatment work of doctors but also affect the efficiency of the hospital. Through the introduction of electronic information engineering technology, these problems can be effectively solved to ensure that the hospital can timely access the patient's health status and treatment needs, to provide more accurate and efficient medical services. Additionally, electronic information engineering technology can also help hospitals to carry out scientific and reasonable procurement and storage of drugs and medical equipment, to achieve the optimal allocation of resources, which can not only improve the efficiency of the hospital but also reduce the medical risk and improve the quality of medical services, to meet the needs of the majority of patients.

2.2. Improve the management level of the hospital

With the continuous development of the Internet era, at present, most hospitals have established their websites and public numbers to promote their business and service content. However, due to the lack of professional operators in the hospital itself, it is difficult to present these contents effectively. Currently, the application of electronic information engineering is particularly important ^[4]. Electronic information engineering can integrate all kinds of information in the hospital to form a complete database so that the hospital can quickly query the required information through the database and use it as a basis for developing a more scientific and reasonable management strategy. For example, through electronic information engineering technology, hospitals can realize functions such as remote consultation and electronic medical records, thus improving the management level of hospitals.

2.3. Improve the economic efficiency of the hospital

Presently, China's hospitals generally face the problem of financial constraints, and this problem has become one of the main factors restricting the development of hospitals. Therefore, how to improve the economic efficiency of hospitals is a problem that every hospital manager must seriously think about. This problem can be solved effectively by introducing electronic information engineering technology. Firstly, electronic information engineering technology can provide hospitals with information technology infrastructure, such as hospital websites, WeChat public numbers, etc., which can effectively expand the hospital's popularity and increase the hospital's income sources. Secondly, electronic information engineering technology can also help

hospitals save manpower costs, for example, through online booking registration, mobile payment, and other ways, it can reduce the number of people queuing in the outpatient hall, thus saving a lot of manpower costs^[5]. Finally, electronic information engineering technology can also help hospitals achieve intelligent management, such as intelligent medical guide systems, intelligent logistics systems, etc., which can improve the operational efficiency of hospitals, thus maximizing the economic benefits of hospitals.

3. Specific application of electronic information engineering in hospital management

3.1. Remote diagnosis

In the current hospital management, doctors will carry out various examinations on patients and feedback on the results to relevant personnel in time. With the help of electronic information engineering, remote diagnosis can be achieved through the network, which can reduce the distance between the hospital and the patient, and also improve the patient's trust. For example, when patients are sick in other cities, they can go to the local hospital directly and then be diagnosed by local doctors. Of course, if the patient wants further treatment, they can also contact the hospital's experts for consultation, to obtain the most scientific and professional treatment plan. The telemedicine system supported by electronic information engineering technology can realize services such as remote consultation and remote surgery between experts and patients, reduce medical costs, and improve medical efficiency.

3.2. Application of intelligent medical equipment

With the continuous development of China's economy, more high-tech is applied to medical services. These technologies can not only help patients to quickly complete the diagnosis of the disease, but can effectively alleviate the contradiction between doctors and patients, and reduce the probability of disputes. Therefore, in the management of hospitals, we can make full use of electronic information engineering to introduce advanced intelligent medical equipment, such as computed tomography (CT) scanning systems, magnetic resonance imaging (MRI), etc. Through these advanced equipment, doctors can more accurately determine the specific condition of the patient and formulate a more appropriate treatment plan. Concurrently, these advanced equipments can also significantly shorten the waiting time of patients, to be treated as soon as possible, and improve the overall efficiency of the hospital. The application of electronic information engineering technology also promotes the development of intelligent medical devices, such as wearable devices and mobile medical devices, which can monitor patients' physical conditions in real-time and transmit the data to the doctor's computer, which facilitates the doctor's diagnosis and treatment^[6].

3.3. Information management platform

In the actual operation of the hospital, various data and information are very complicated, which is a great challenge for hospital managers. To solve this problem, a comprehensive information management platform can be constructed to facilitate the unified management and monitoring of various data and information in the hospital. Through this platform, hospital administrators can understand the work of each department in real-time and can find and solve existing problems promptly^[7]. Furthermore, the platform also has good compatibility and scalability and can meet the needs of different sizes and types of hospitals, to improve the overall operational efficiency of the hospital.

3.4. Digital management

In the process of hospital management, digital management is one of the essential links. Through digital management, the daily operation of the hospital can be data processing, to achieve all-round supervision and guidance of the hospital. Moreover, digital management can also provide doctors with a clear reference basis so that they can better understand the development of the patient's condition and provide personalized services. Electronic information engineering technology can help hospitals achieve digital management, including electronic medical records (**Figure 1**), image archiving pathological tests, etc. These data can be shared among different departments to improve work efficiency, and it is also convenient for doctors to follow up and manage their patients in the long term ^[8]. Digital management is an indispensable part of current hospital management, which can help hospitals better adapt to the needs of the new era and improve the comprehensive competitiveness of hospitals.

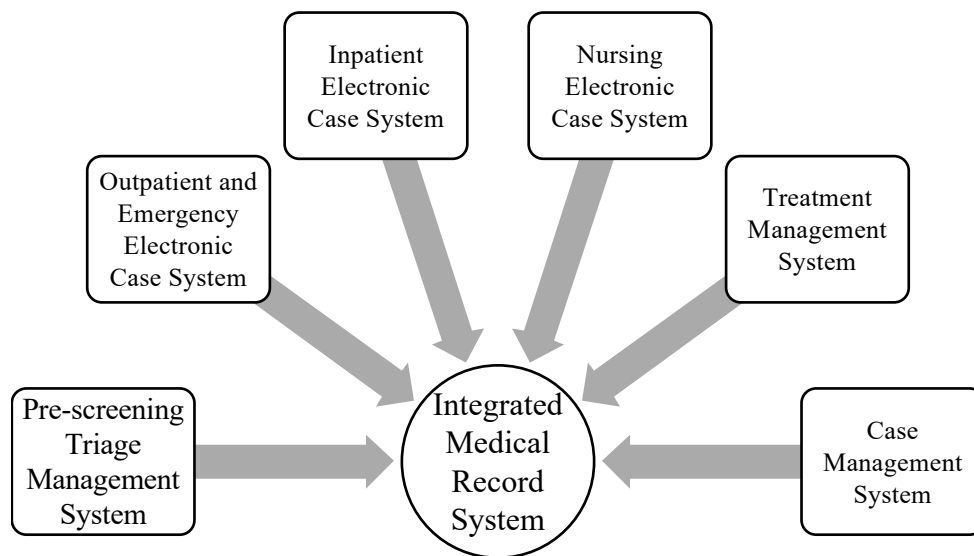


Figure 1. Integrated electronic case system

3.5. Information system construction

Electronic information engineering provides strong support for information management in hospitals. Hospitals can establish a perfect information system to achieve the integration of medical resources, patient information and diagnosis and treatment processes, and improve management efficiency and medical quality.

3.6. Data management

Electronic information engineering technology can effectively process and store a large amount of medical data to help doctors better understand the patient's condition and treatment. Simultaneously, hospitals can also predict disease development trends and preventive measures through big data analysis to improve hospital management.

4. Problems and improvement measures in current hospital management

4.1. Existing problems

Although the application of electronic information engineering in hospital management has achieved certain results, there are still some problems. Firstly, the degree of hospital informatization is insufficient. Many hospitals are still using traditional management methods and lack effective information system support. Secondly,

data sharing is difficult. Due to the imperfect information-sharing mechanism between different departments, it is difficult to integrate and utilize data, which affects the efficiency of hospital management. Thirdly, there is a lack of professional talents ^[9]. With the rapid development of electronic information engineering technology, hospitals need professionals with appropriate knowledge and skills to promote its application.

4.2. Improvement measures

Given the above problems, the following improvement measures can be taken:

- (1) Strengthen the construction of hospital information technology. Through the establishment of a unified hospital information system, we can realize the comprehensive management of each department, division, and business process and improve management efficiency. At the same time, strengthen the construction of hospital information technology infrastructure, improve network security and data backup capacity, and guarantee information security.
- (2) Promote data sharing. Formulate perfect information-sharing mechanisms and norms, clarify the responsibilities and authorities between departments, and ensure that data can be timely and accurately accessed and utilized ^[10]. Concurrently, doctors and medical personnel are encouraged to use the electronic medical record system to better manage and preserve patients' medical information.
- (3) Cultivate professional talents. Strengthen cooperation with colleges, universities, and research institutions to cultivate a group of high-quality talents with advanced concepts and professional skills to provide strong support for the application of electronic information engineering in hospitals.

5. Advantages and future development trends of the application of electronic information engineering in hospital management

The application of electronic information engineering in hospital management has many advantages. Firstly, it can improve the management efficiency and service quality of hospitals. By establishing a perfect information system, hospitals can realize the efficient use of medical resources and improve work efficiency and service levels. Secondly, it can improve patients' medical experience. Through technical means such as telemedicine and electronic medical records, patients can obtain medical information and treatment advice more conveniently, reducing waiting time and the number of round trips. Finally, it can promote the innovative development of the medical industry. With the continuous progress of technology, hospital management will be more intelligent and personalized in the future, providing patients with more accurate and humane medical services.

Looking ahead, the application of electronic information engineering will continue to penetrate all aspects of hospital management. On the one hand, with the continuous development of artificial intelligence, big data, and other technologies, hospitals will pay more attention to data analysis and decision-making support to improve the science and accuracy of management decisions. On the other hand, with the application of emerging technologies such as the fifth generation of mobile networks (5G) and the Internet of Things (IoT), hospitals will achieve more comprehensive informatization and improve the accessibility and convenience of medical services. Furthermore, with the implementation of the Healthy China strategy, hospital management will pay more attention to public health and safety issues, and actively promote the construction of a universal health protection system.

6. Conclusion

With the continuous development of information technology, electronic information engineering has become

an important support for hospital management. By strengthening information construction and data sharing, hospital management efficiency and service quality can be improved. Simultaneously, the application of new technologies such as telemedicine and electronic medical records also provides patients with more convenient and safe medical services. In the future, electronic information engineering will continue to promote the development of hospital management, including the integration and application of artificial intelligence, the Internet of Things, and other technologies. The application of these technologies will further enhance the management level and medical service capacity of hospitals and provide patients with more high-quality and efficient medical services. However, some issues need to be noted when applying electronic information engineering technology. For example, data security, data privacy protection, and so on. Therefore, in the process of promoting the application of electronic information engineering, the formulation and improvement of relevant laws and regulations should be strengthened to ensure the security and privacy protection of medical information. Only in this way can electronic information engineering technology better support hospital management and realize the sustainable development of the medical industry.

Disclosure statement

The authors declare no conflict of interest.

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