

Information Technology Helps Achieve Efficient Management of Day Surgery Wards

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Abstract: Changes in the management of day surgery wards have been driven by information technology. With the help of electronic medical record systems, surgical scheduling software, remote monitoring equipment, etc., the surgical process can be improved, the working efficiency of medical staff will be enhanced, and the waiting time for patients will be reduced. Information technology can organise the medical resources properly and distribute them fairly. An Information Platform can be introduced to improve communication among doctors and patients and enhance the medical services available to the public. Information technology can be used to improve the management efficiency of day surgery wards and enhance the quality of medical services.

Keywords: information technology; day surgery ward; efficient management

1. Introduction

With the continuous development of medical technology, many types of day surgery have been gradually added to the list of available options. However, how to realise efficient management of day-surgery wards has become a problem of great importance. Now, with the development of information technology, data can be collected and spread at a faster pace. With the help of advanced information systems and technology, all sorts of problems in surgery, patient management, resource allocation, etc., can be addressed, improving the efficiency and quality of management, meeting the rising demand for day surgery, and providing significant practical value.

2. Application of Information Technology in Surgical Process Management

2.1 Use of Electronic Medical Record System

After the full implementation of the electronic medical record system, the diagnosis and treatment information of inpatient surgeries can be fully digitised and transmitted at all times. The main information of the preoperative examination results, anesthesia assessment report, surgical plan and postoperative recovery conditions is combined to form a complete diagnosis and treatment information loop, and there will be no loss or error of paper medical records during transmission. Medical staff can quickly access all the diagnosis and treatment data to save time on preoperative preparation and improve the accuracy of diagnosis and treatment. At the same time, the electronic medical record system can also share diagnosis and treatment data in real time to promote better cooperation among all medical staff, unify the process of diagnosis and treatment, reduce the occurrence of medical errors, and provide strong data support for the smooth operation of inpatient surgery.

2.2 Optimisation of Surgical Scheduling Software

Optimisation and improvement of the surgical scheduling software have solved the problems of traditional manual scheduling and achieved intelligent and reasonable management of inpatient surgery schedules. The software will automatically create an optimised schedule based on the types of surgeries, the duration of the surgeries, the professional level of the medical staff, and resource allocation in the operating room; thus, it can effectively arrange the time and operating-room use of the surgeries to meet the aim of reducing the length of long-term surgeries and the high usage rate of operating rooms[1]. If there are any unforeseen circumstances, such as the need to postpone the surgery temporarily or perform extra emergency surgeries, the software will promptly adjust the schedule plan and inform the relevant medical staff of the updated schedule in time for the smooth progress of the surgery. The improved scheduling software will also collect and analyse the statistics of the schedule to see how the resources are being used, and then adjust the schedule accordingly.

2.3 Real-Time Monitoring of Surgical Operations

A real-time monitoring system for surgical operations is based on the Internet of Things and data transmission technology, and it can show the pictures of all stages of in-patient surgery. The system can obtain various information in

real time, such as the start and end times of surgeries, key stages during surgeries, and end times, send it to the medical staff workstation and monitoring system, and have managers immediately know the operation status of each operating room. If there is a delay in surgery or any other issue during the operation, an early warning will be sent to help the doctor deal with it promptly and avoid losses caused by a prolonged process. At the same time, the monitoring data will be stored for later reference and quality analysis of the surgical process to enhance the connection with surgery and improve the operational efficiency of inpatient surgery.

3. Information Technology Optimises the Distribution of Medical Resources

3.1 Information Management of Equipment Resources

The equipment resource information management system can be linked to all IoT terminals of the medical equipment to manage the whole life cycle of the equipment in a hospital. The system can monitor the usage status, operating conditions, maintenance history and idle time of equipment in real time, know how the equipment resources are distributed and used, and prevent the equipment from being idle or overused. According to the surgical schedule, the allocation of special equipment for surgery can be prepared in advance, and it will be available at the time of the operation. The system will automatically issue equipment maintenance alarms and release maintenance work at a certain time to create a good working environment for the equipment, prevent damage or malfunction, and ensure the stable operation of equipment in the operating rooms of the hospital[2].

3.2 Reasonable Scheduling of Medical Staff

The Reasonable Scheduling of medical staff is based on the information-based scheduling system. According to the volume of inpatient surgeries, the professional qualifications of the medical staff, workload, rest time, etc., reasonable allocation of human resources has been achieved. According to the surgery schedule, the system will automatically assign doctors, anesthesiologists, nurses, etc., set task and working hours for each position, avoid problems of wasted or missing human resources, and ensure that there are no gaps in medical staff.

The intelligent management system of medicines and materials can achieve all-encompassing intelligent management of all medicines and materials used in day surgery. Keep track of the inventory and expiration dates of medicines and other supplies in real time, send early warning notifications for procurement and replenishment, and thus prevent both shortages and waste of these goods. Essential items for surgery, such as anaesthetic drugs and sterile consumables, have been tracked meticulously to know when they were collected, used and disposed of, etc., in order to ensure the safety of material use. Based on the data of surgical volume, the system can predict the demand for medicines and materials and thus optimise the inventory structure to reduce the cost of material management and ensure a timely and standardised supply of medicines and materials for day surgery. Electronic integration of patient information can achieve cross-departmental and cross-process sharing of materials and information, reduce the number of times patients need to submit materials, improve the quality of patient medical services, and provide data support for whole-process management of day-surgery patients. All the diagnostic systems in the hospital can be connected to the platform for automatic data collection, and there will be no manual entry errors. It can also carry out classified search and screening of patients based on their personal information to help healthcare providers quickly find relevant patient information and improve the accuracy and efficiency of patient management.

4. Innovative Informationisation of Patient Management

4.1 Electronic Integration of Patient Information

Organize the patient's personal information, preoperative examination results, treatment plan and postoperative rehabilitation instructions in a standardised way on the electronic integration platform for patient information and save them in the patient's information file. Patients can fill in their personal information via the Internet, and also view related medical service information and other content. Medical staff can access all the patient's information on the platform, get a full picture of the patient's health and treatment requirements, and thus improve the accuracy and efficiency of diagnosis and treatment. Electronic integration of patient information can promote sharing among different departments and at various times, reduce the number of documents patients need to submit, improve the quality of medical services for patients, and provide data support for the full process management of day-surgery patients. All the diagnostic systems in the hospital can be connected to the platform for automatic data synchronisation, and the problem of human error will be reduced[3]. It can also carry out classified search and screening based on the patients' personal information to help healthcare providers quickly find the relevant patient's information and improve the accuracy of patient management.

4.2 Implementation of Remote Medical Services

Build an information platform for remote medical services to provide preoperative examination and postoperative rehabilitation guidance for day-surgery patients and solve the problems of distance and time. Immobile patients or those living in the countryside can have a video consultation before surgery at home to avoid the long journey back and forth. Medical staff can use the remote platform to learn about the present situation of patients in rehabilitation, quickly answer all kinds of questions from patients, and provide personalised rehabilitation advice. Remote medical services can increase people's access to healthcare, improve the utilisation of medical resources, reduce the number of people needing to come to the hospital, and help patients recover faster after day surgery. Collect the post-operative rehabilitation data on the platform, obtain the real-time physical condition data of the patients, issue early warning alerts when there are any abnormalities, and have healthcare providers promptly modify the treatment according to this information. Remote multi-disciplinary consultation can be arranged to help develop an appropriate treatment plan for serious illness. Save the record of the remote diagnosis on the platform, retrieve and analyze it later, create a private remote rehabilitation file for the patient, continuously monitor the progress of remote rehabilitation, and thus improve the accuracy and efficiency of remote medical services. Statistics on how satisfied the patients are with the service will be published, and problems in the service process will be addressed. Based on the analysis report, managers will strengthen the optimisation of the service process and thus improve service quality[4]. Problems reported by patients can be dealt with in the system, and at the same time, a closed-loop management system for collection, analysis, correction and feedback will be established to continuously improve patient satisfaction with medical services.

5. The Role of Informationisation in Doctor-Patient Communication.

5.1 Establishment of Online Consultation Platform

An online consultation platform has been set up to allow people with day surgery to speak with doctors conveniently. The following are examples of the types of issues that patients can query on the platform: pre-operative preparation, post-operative care, cost settlement, etc. Medical Staff Answer Patients' Questions Online to Ease Anxiety. The platform will release some health education materials and precautions for day surgery to help the patients better understand their treatment. Online consultation platforms have overcome the time and place limitations of traditional doctor-patient communication, sped up the speed of communication, solved problems caused by poor communication, and established a good doctor-patient relationship. An intelligent customer service module can be added to the platform to answer frequently asked questions automatically, reduce the burden of communication on medical staff, support various forms of communication such as text, images and voice, meet different communication demands from patients, and improve the convenience of communication and the patient experience.

5.2 Electronic Push of Health Education

The electronic push system for health education will send personalised health education information to patients based on their health conditions, type of operation and recovery period, etc. The pushed content includes preoperative diet education, postoperative rehabilitation training, complication prevention and medication precautions, etc. They take the form of text, pictures, videos, etc., and are easy for patients to learn. Patients can view the educational materials on their mobile phones, computers, and so on, and learn the health knowledge independently. Electronic push can offer more personalised and frequent health education, solve the problems of traditional teaching, help patients recover better after surgery, and reduce the risk of post-operative complications. Based on the reading feedback from patients, the system can also change the frequency and method of pushing health education content, collect patients' opinions on the health education content, and thus improve the implementation of health education and the quality of the patients' experience[5].

5.3 Information Management of Postoperative Follow-up

The management system of postoperative follow-up will organise the follow-up of patients after day-surgery operations in an organised and effective way. According to the type of operation and the patient's condition of recovery, the system will create follow-up plans that specify the time, content and method of follow-up. Medical staff can use the online follow-up system to monitor the health of the patients after surgery and promptly find any problems that have arisen. The following data will be saved automatically for later analysis and optimisation of the treatment effect. Information-based follow-up can improve the efficiency of follow-up work and ensure that all aspects of the follow-up work have been covered to help patients recover well after surgery. Set a follow-up reminder in the system, ensure the consistency of reminder information in all areas for both medical staff and patients to avoid missing any follow-ups, conduct an all-round analysis of the collected

follow-up data, provide data support for optimizing the postoperative rehabilitation plan, and improve the quality of medical service.

6. Conclusion

Information technology has many applications in the management of day-surgery wards and is very promising. By applying all of the above in the operation of hospitals and coordinating different links such as operations, resources, patients and doctors, the efficiency and quality of medical services can be improved. To make better use of it, some continuous training for staff, reliable systems and stricter organisational management are needed. In the future, we will continue to explore how information technology can be applied in various aspects of the management of day-surgery wards, provide new momentum for the management of these wards, enable more patients to enjoy efficient and high-quality medical services, and promote the informatisation of the medical industry.

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