

Application of Intelligent Storage System on the Management of High Value Consumables of Operating Room

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Abstract: This paper introduces intelligent storage systems into the process control of the operating room consumables library. Methods Informatized digital bar code is used to control the seamless connection of all kinds of consumables in the operating room, such as storage, access, addition, charging, and outbound, and optimize the management mode of the operating room consumables library. The results effectively reduce the cumbersome inventory and validity check of the consumables warehouse management personnel, reduce unnecessary loss or property loss, optimize the consumable warehouse management mode, and save manpower and management costs. Conclusion The intelligent warehousing system is used for the management of consumables in the operating room. It is an effective measure to implement integrated management of informationization, lean, automation, high efficiency, precision and convenience.

1. Introduction

With the rapid development of surgical procedures, the high-value consumables used in surgery are becoming more and more expensive, and the variety is increasing. How to scientifically and effectively manage the high-value consumables used in the operation, standardize the use process, and realize high-value consumables. The traceability of the whole process is of great significance for improving the quality of hospital management, and plays an important role in the management of operating rooms. The Eye Vision Hospital of Wenzhou Medical University is a tertiary hospital with three levels of eye specialists. It has always attached importance to the development of hospital information technology and has a powerful information platform. In 1998, it independently developed the "Ophthalmology Information Management System", which includes outpatient services, fees, and On the basis of surgery, materials, administrative management, etc., the operation center cooperated with the information center in 2013, and independently developed the "operating room high-value consumables management system" and applied it to the clinic to build inventory files for high-value consumables. Through the distribution, use of the warehouse registration, confirmation, inquiry and other operations, complete the monitoring of the whole process of high-value consumables, achieve traceable management, and improve the quality of operating room care management. The development system is now reported as follows for reference.

2. System Structure and Graphic Design and Information Docking

It adopts a horizontal rotary warehouse management system, covering an area of about 65 square meters. It is equipped with two lanes as standard, with a total of 752 storage spaces. The height of the equipment is between 2.2 and 4.1 meters, and the engine inside the equipment can work in multiple layers, just like a miniature version of the three-dimensional playground. The brackets are self-lubricating, so the equipment is robust, reliable and requires little maintenance. The cradle can carry 900 kg, the Horizongtal system has a storage height between 1.8 and 3.65 meters, and the

conveying speed can reach 24 meters per minute, which greatly shortens the waiting time. The storage of consumables is classified according to their brand, specifications and functions, and each specification has an independent barcode. Consumables of the same specifications are ordered and stored in order according to batch, expiration date and quantity.

The HIS system in the consumables linkage hospital received the operation notice and passed the approval to enter the hand hemp system. After the operation is arranged, the intelligent storage system automatically receives the information of the patient, showing the patient's identity and the name of the operation. The nurse can take the order to take the consumables through the display screen. The computer system in the operation room can be installed with linkage shortcuts to facilitate the temporary addition of consumables. The system will receive and calculate the type and quantity of consumables. After the operation of the unused consumables is completed, the system settles and completes the charge. The HIS system can receive the billed consumables information, and the consumables library directly performs the outbound processing and displays the real-time data.

The minimum inventory quantity warning system is used for each specification of the consumables, and the minimum inventory quantity is set according to the storage period and the time period of use. The system controls the inventory amount in real time, and the timed voice broadcast is performed below the specification of the inventory quantity, prompting the administrator to perform the audit processing. The medical office will receive basic information on the demand for consumables, call the distribution directly on the relevant platform, and the administrator will perform the replenishment management.

The near-effect early warning system control system monitors the effective period of various consumables in real time, less than three months of consumables, and a regular voice report, prompting the administrator to perform the effective period in advance.

The consumables of the authority docking operating room are the key control items, and the control personnel must enter and exit. The access authority of the surgical behavior management system is matched with the information of the intelligent storage to realize the function of accessing the authority.

3. Daily Access and Consumables Management

The nurse can find the corresponding surgical patient information on the warehousing display at any time, brush the permission card, and the system recognizes, then the consumables can be placed, the submitted order is successfully displayed, and the order is printed. Click on the display of each roadway, the bracket of the roadway automatically identifies the consumables of the nearest consumables, and performs retrograde or antegrade rotation to the access window. The corresponding number of consumables are taken at the bracket of the indicator light, and the system barcode is checked to confirm. If the access is correct, the system will rotate the next consumables location, and the same method will be used for all the consumables. When the operation needs to be temporarily added, the order is placed on the computer during the operation, and the administrator receives the order, takes it and delivers it to the corresponding operation room. After the operation, the unused consumables are returned to the warehouse, the order is generated, the system automatically transfers to the corresponding location, the consumables are placed, the code is confirmed, and the HIS system automatically associates and settles the billing.

The intelligent replenishment system periodically reminds the minimum inventory, the administrator reviews, and adjusts according to the circulation and cycle, and the system automatically generates the replenishment order. The administrator receives the consumables from the medical office, prints the in-house barcode according to the batch, and enters the validity period and quantity to complete the storage. The management of consumables for the period of validity requires monthly inspections, and regular warnings for effective periods can be used to deal with consumables in a timely manner. And the system can check the validity period and quantity of the consumables in the library at any time, and play the function of the regular library.

4. Process Discussion

Optimize the process and improve the management level: After the development of the high-value consumable management system, the operation process is simplified, and the special administrator is set up. Every morning, the special manager issues surgical consumables to each operation room according to the operation condition. After the operation, the tour nurse will use the surplus. The surgical consumables are returned to the special management staff, which avoids the phenomenon that the nurses get together to collect consumables in the consumables warehouse, which reduces the error rate when the nurses take the consumables themselves, and makes the department management more scientific and standardized. Change the registration process, improve work efficiency, and reduce the workload of nurses: The use records of consumables before system development are manually registered by the nurses in the operation room. Due to the fast pace of surgery, they are generally registered after the end of surgery, and manual statistics are performed at the end of the month. Deng, wrong, and statistical errors. After using the management system, the administrator issues the consumables to each master name in the system. The nurse only needs to select the patient name and complete the registration on the computer, which reduces the manual operation and changes the handwriting to computer operation. It is accurate and fast, and the work efficiency is obviously improved. At the same time, the error rate of operation is reduced, and the defects of manual registration caused by uncontrollable factors such as the registration of nurses, the forgetting registration during busy or the incomplete registration items are also avoided. After using the management system, there is still a phenomenon of missed and missed, mainly due to the fast pace of ophthalmic surgery, the patrolling nurse did not check again, and the wrong is mainly due to the wrong selection of the batch number, but after the administrator's check Can be corrected. Detailed records, which facilitate the accounting query and realize the traceable management of high-value consumables. Before the application of the management system, only the number of consumables used is registered every day, and the patient's information is not recorded. If the nurse does not record the consumables in time and record them, then bill will be missed. After using the management system, the biggest role is to realize the traceability of consumables]. The system records the information of the patient and the high-value consumables used in detail. The administrator can directly query whether the goods have been booked according to the disbursed materials, so as to be at the root cause. check.

Specialized management, red warning, double guarantee of consumable safety: generating batch number and expiration date is important information for high value consumable safety monitoring. Numerous varieties and batches, coupled with various complicated situations in circulation, make the safety monitoring of medical consumables more difficult, and the occurrence of high-value consumables expired. After the development of the high-value consumables management system, the high-value consumables are managed by special personnel at the same time. The special managers input the consumables. They are placed in order according to the system prompts during storage, so that the principle of the first effective period is used first, and the system is valid for the next 3-6 months. The consumables are given a red warning to remind you to use or return to the company in time to avoid the expiration of consumables. Set up the base of consumables: Regularly count all consumables with a certain base. At the end of the month, the special administrator and a nurse check the inventory and validity period of consumables according to the system report, and purchase in time to avoid out of stock, out of stock and consumables expired to ensure normal operation. Carry out. Realize information management: it is good for data statistics. Before the system is used, the statistics of consumables at the end of each month is a huge task. It is necessary to check the quantity of consumables in each operation room. It takes at least 2 days to complete. After applying the management system, click on the report, select the time and corresponding management. The library can generate and export data within 5 minutes. The development of the management system enables the high-value consumables to be incorporated into the information management. It can keep abreast of the use of high-value consumables, keep abreast of the collection, use and inventory of various high-value consumables in the department, and facilitate the summary of the use of high-value consumables. Statistics, draw usage ratio maps and trend

graphs, provide a reference for managers to grasp the use of various high-value consumables.

The PDCA cycle management method is a scientific, standardized, and procedural basic management method, which is a management mode that uses information feedback as a working principle. The quality management of the hospital disinfection supply center is the top priority of daily work. Therefore, the quality management of the disinfection supply center is a long-term, uninterrupted process. In the process of nursing management, through the continuous discovery, feedback and treatment of existing problems, we summarize and improve in the process of continuous circulation to achieve high-quality disinfection supply center care management. As the most advanced management mode at present, the PDCA cycle method can find and solve problems in time during the implementation. Through the continuous summarization of experience and the feedback of other departments in the management process, the problems in the management process are timely and effective. Understanding. From the results of this study, after the implementation of PDCA management, the quality of the work of cleaning, packaging, sterilization and other key aspects of the equipment is better than before management, and the correctness of the staff's operation is also improved, indicating that the development is The plan and quality standards can standardize the daily operation of the staff, ensure the uniform operation and evaluation standards, and greatly improve the quality of the equipment disposal. The quality and efficiency of the disinfection supply center have also been significantly improved; the quality control team members are stepping up in perfection. In the process of implementation, personally supervise and supervise, be able to keep abreast of the implementation and effectiveness of the plan, discover and formulate solutions in a timely manner; summarize the experience and pay attention to it, make the daily work process more standardized, and solve the problem continuously to make the work quality Continuous improvement, as can be seen from the results of this study 2.3, after the implementation of PDCA cycle management, sterile items were timely and correctly supplied to meet the needs of clinical departments, and also improved the satisfaction of the work of the disinfection supply center.

5. Conclusion

Hospital information system is the symbol of modern hospital management, and is also the best tool to improve the quality of hospital management and comprehensive management level, and the scientific management of high-value consumables has become the focus of hospital management. After the development of the high-value consumables management system, through the information management, you can understand the use of high-value consumables at any time, implement traceable management, and control the department's expenditures, so as to ensure timely replenishment and ensure the orderly property of the operating room. Reflecting the quality, low-cost, and efficient cost management model.

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