

# Analysis on the Improvement and Application Effect of the Logistics Safety Guarantee Management Scheme in Modern Traditional Chinese Medicine Hospitals Based on JCI Standards

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## Abstract

**Objective:** This paper aims to construct a logistics safety guarantee management scheme for modern traditional Chinese medicine hospitals based on JCI standards, analyze its application effect, and provide a feasible path for improving the logistics safety management level of traditional Chinese medicine hospitals. **Methods:** The literature research method was used to deeply sort out the connotation of JCI standards and their application points in hospital logistics safety management. Taking Baise Hospital of Traditional Chinese Medicine as a specific case, methods such as on-site inspection and interviews were comprehensively adopted to collect the current situation data of hospital logistics safety management. Furthermore, a management scheme was constructed, covering system construction, procurement management, material management, equipment management, environmental health management, satisfaction management, work safety and emergency management, etc., and a scientific and reasonable assessment index system was set. **Results:** After the implementation of the new scheme, various logistics safety management indicators of the hospital were significantly optimized. The timeliness rate of material procurement increased from 72% to 90%, the inventory accuracy rate increased

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from 82% to 93%, the equipment intact rate increased from 80% to 92%, the timeliness rate of maintenance increased from 72% to 90%, the intact rate of fire safety facilities increased from 75% to 96%, the incidence of food hygiene and safety incidents decreased from 3 times a year to 0 times, the staff satisfaction increased from 75% to 90%, and the satisfaction of patients and their families increased from 72% to 88%. **Conclusion:** The management scheme based on JCI standards has a significant effect on improving the logistics safety guarantee management level of traditional Chinese medicine hospitals, has a high promotion value, and is expected to promote the logistics safety management of traditional Chinese medicine hospitals to a more scientific and efficient direction.

### Keywords

JCI Standards, Traditional Chinese Medicine Hospitals, Logistics Safety Guarantee, Management Scheme

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## 1. Introduction

In the process of the continuous development and improvement of the modern medical system, traditional Chinese medicine hospitals, as an important part of medical services, the importance of their logistics safety guarantee has become increasingly prominent, which can be regarded as the solid cornerstone for the smooth development of medical services. Logistics safety guarantee covers all aspects of hospital operation, from the supply of materials, the maintenance of equipment, to fire safety, food safety, etc. Each link is closely related to the quality and efficiency of medical services, as well as the vital interests of patients and medical staff (Li et al., 2023a; Zhang et al., 2023a; Zhao et al., 2023a).

However, with the progress of society and the increasing demand for medical services, the traditional logistics safety management model of traditional Chinese medicine hospitals has gradually exposed a series of problems that cannot be ignored. At the management system level, some hospitals have obsolete and incomplete systems, resulting in chaotic management processes and unclear division of responsibilities (Chen et al., 2023). For example, the material procurement process lacks standardization, and problems such as long procurement cycles and uneven material quality often occur, affecting the normal progress of medical work; the equipment maintenance system is imperfect, resulting in equipment aging, frequent failures, and untimely maintenance, which not only reduces the service life of medical equipment, but may also affect the accuracy of medical diagnosis and treatment (Wang et al., 2023a).

As a globally recognized authoritative standard for medical service quality and safety assessment, JCI standards, with their unique patient-centered fine-management concept and the principle of continuous improvement, provide new ideas and directions for the optimization and innovation of logistics safety management

in traditional Chinese medicine hospitals. JCI standards emphasize that in every management link, the needs and safety of patients should be fully considered, and the refinement and scientific nature of management should be pursued (Li et al., 2023b). By introducing JCI standards, traditional Chinese medicine hospitals can comprehensively sort out and standardize the existing logistics safety management processes, clarify the responsibilities of various departments and positions, optimize work processes, and improve management efficiency. At the same time, JCI standards put forward strict requirements for safety prevention and control, prompting hospitals to strengthen management in aspects such as fire safety and food safety, improve emergency plans, and improve emergency response capabilities, creating a safer and more reliable medical and working environment for patients and medical staff (Liu et al., 2023a; Sun et al., 2023; Liu et al., 2023b).

This research closely focuses on the core of constructing a logistics safety guarantee management scheme for traditional Chinese medicine hospitals based on JCI standards. Taking Baise Hospital of Traditional Chinese Medicine as an actual case, it deeply analyzes the application path and implementation effect of JCI standards in the logistics safety management of traditional Chinese medicine hospitals. Through the combination of theory and practice, it not only provides targeted improvement strategies for the logistics safety management of Baise Hospital of Traditional Chinese Medicine, but also provides a theoretical basis and practical reference with reference value for other traditional Chinese medicine hospitals in the modern transformation of logistics safety management, helping to improve the logistics safety management level of the entire traditional Chinese medicine medical industry.

## 2. Materials and Methods

### 2.1. Research Materials

To comprehensively explore the construction of a logistics safety guarantee management scheme for modern traditional Chinese medicine hospitals based on JCI standards and its application effect, this study takes Baise Hospital of Traditional Chinese Medicine as a sample and collects materials from multiple dimensions.

In terms of text materials, the research team delved into the logistics safety management department of the hospital and sorted out various relevant documents, including past management plans, work summaries, and rectification reports, to understand the development history of logistics safety management. The existing systems, such as material procurement, equipment maintenance, and safety management systems, were studied to analyze their rationality and deficiencies. Statistical data focused on key indicators of logistics operation, such as material procurement volume and equipment failure rate, laying the foundation for quantitative analysis.

The interviews adopted a semi-structured form. Interview outlines were developed for different objects, covering various aspects such as material procurement and supply, equipment maintenance and repair, warehouse management, the abil-

ity of logistics services to support clinical medical work, catering services, the medical environment, and safety perception. Discussions with the management focused on logistics strategic planning and its compatibility with JCI standards; conversations with logistics staff explored daily work processes and problems; medical staff were asked about the impact of logistics services and improvement suggestions; and patients and their families were invited to share their medical experiences and expectations. A total of 10 management representatives, 10 logistics staff, 20 medical staff representatives, and 20 patients and their family representatives were interviewed. The entire process was recorded and the materials were sorted out to uncover the deep-seated views of all parties on logistics safety management.

## **2.2. Research Methods**

### **2.2.1. Literature Research Method**

To fully understand the cutting-edge trends and theoretical basis in the research field, this study used a scientific literature retrieval strategy to deeply search authoritative academic databases such as CNKI (Wang et al., 2023b). Core search terms such as “JCI standards”, “hospital logistics safety guarantee management”, and “traditional Chinese medicine hospital management” were set, and more than 30 relevant literatures published in the past 10 years with high relevance and great academic value were accurately selected for in-depth study. Through systematic review and analysis of these literatures, relevant theoretical frameworks, practical experiences, and research results were summarized, providing a solid theoretical support for constructing a logistics safety guarantee management scheme for modern traditional Chinese medicine hospitals based on JCI standards.

### **2.2.2. Field Investigation Method**

The research team went deep into key logistics departments of Baise Hospital of Traditional Chinese Medicine to carry out detailed field investigation work. The whole process of material procurement, from demand submission, supplier negotiation, contract signing to material acceptance, was observed on-site. Approval procedures, communication mechanisms, and potential risk points in the procurement process were recorded in detail. At the equipment maintenance site, the operation procedures of equipment maintenance personnel, the use of maintenance tools, and the implementation progress of the maintenance plan were observed, and the operating status of equipment, common failure types, and maintenance efficiency were understood. At the same time, a field investigation was carried out in the safety monitoring room to check the operation of monitoring equipment, the coverage of the monitoring area, and the response speed of the safety early-warning mechanism (Zhang et al., 2023b). Through field investigations, the actual operation of hospital logistics safety guarantee management was comprehensively and intuitively grasped, and first-hand research materials were obtained.

### **2.2.3. Interview Method**

A semi-structured interview method was adopted, and personalized interview

outlines were developed for different groups such as hospital management, logistics functional department staff, medical staff, and patients and their families (Zhao et al., 2023b; Liu et al., 2023c). The interviews revolved around existing problems in logistics safety management, the degree of understanding of JCI standards, and expectations and suggestions for constructing a new management scheme based on JCI standards. During the interview process, the interviewers maintained a neutral and objective attitude, actively guided the interviewees to express their views in depth, and recorded the entire process. After the interview, the recordings were transcribed into text materials in a timely manner, and content analysis was used to code and analyze the text to uncover the deep-seated views and potential needs of all parties on logistics safety guarantee management.

### 2.3. Data Analysis Methods

This study used a variety of tools to analyze data. Excel was used to input and initially sort the original data obtained from field investigations and interviews. Functions such as sorting and screening were used to clean the data. SPSS 27.0 was used to conduct descriptive statistics and correlation analysis on the questionnaire data, presenting data characteristics and exploring variable relationships. NVivo 12 was used to code and summarize the interview texts, uncovering the views and suggestions of all parties on logistics safety management.

## 3. Results

### 3.1. Current Situation of Logistics Safety Guarantee Management

Through systematic questionnaires and in-depth interviews, this study comprehensively analyzed the current situation of logistics safety guarantee management in Baise Hospital of Traditional Chinese Medicine. The survey results showed that the satisfaction rates of hospital staff and patients with logistics safety guarantee management were only 75% and 72% respectively. They generally believed that the hospital workplace and medical environment were not friendly enough. In terms of fire safety management, 25% of the respondents believed that there were deficiencies in fire training and fire-fighting facilities, which undoubtedly posed a hidden danger in dealing with emergencies such as fires. In the field of food safety management, 20% of the respondents pointed out that the food hygiene situation needed to be further improved, which was related to the diet health of patients and medical staff. In terms of equipment maintenance, 28% of the medical staff complained that the equipment maintenance was not timely enough, which seriously affected the normal progress of medical work.

### 3.2. Implementation Effect of the New Scheme

Six months after the implementation of the new logistics safety guarantee management scheme based on JCI standards, remarkable results were achieved (see **Table 1** for details). The timeliness rate of material procurement increased significantly from the initial 72% to 90%. By independent-samples t-test,  $P < 0.05$ , in-

dicating that the timeliness rate of procurement was significantly improved after the implementation of the new scheme, and the difference was statistically significant, effectively ensuring the timely supply of medical materials. The inventory accuracy rate increased from 82% to 93% ( $P < 0.05$ ), indicating that the new scheme significantly improved the inventory accuracy rate and reduced the situations of material overstock and shortage. The equipment intact rate increased from 80% to 92% ( $P < 0.05$ ), and the equipment intact rate was significantly improved after the implementation of the new scheme, reducing the interference of equipment failures on medical services. The timeliness rate of maintenance increased from 72% to 90% ( $P < 0.05$ ), indicating that the timeliness rate of maintenance was significantly improved, greatly improving the response and resolution efficiency of equipment failures. The intact rate of fire-safety facilities increased from 75% to 96% ( $P < 0.05$ ), indicating that the new scheme significantly improved the intact rate of fire-safety facilities and enhanced the hospital's fire-safety guarantee ability. The incidence of food hygiene and safety incidents decreased from 3 times a year to 0 times. By non-parametric test (because the accident incidence was count data) ( $P < 0.05$ ), it showed that the new scheme effectively reduced the incidence of food hygiene and safety incidents, and the difference was significant, effectively ensuring the diet safety of hospital staff and patients. At the same time, the staff satisfaction increased from 75% to 90%, and the satisfaction of patients and their families also increased from 72% to 88% ( $P < 0.05$ ), indicating that the new scheme significantly improved the satisfaction of hospital staff and patients, fully reflecting the positive role of the new scheme in improving the quality of hospital logistics safety services and optimizing the medical experience.

**Table 1.** Comparison of the implementation effects of the new scheme.

Assessment Items	Assessment Indicators	Before Implementation	After Implementation	<i>P</i> -value of Independent-samples t-test
Material Management	Timeliness Rate of Procurement (%)	72	90	$P < 0.05$
	Inventory Accuracy Rate (%)	82	93	$P < 0.05$
Equipment Maintenance	Equipment Intact Rate (%)	80	92	$P < 0.05$
	Timeliness Rate of Maintenance (%)	72	90	$P < 0.05$
Safety Management	Intact Rate of Fire-Safety Facilities (%)	75	96	$P < 0.05$
	Incidence of Food Hygiene and Safety Incidents (times/year)	3	0	$P < 0.05$
Satisfaction	Staff Satisfaction (%)	75	90	$P < 0.05$
	Patient Satisfaction (%)	72	88	$P < 0.05$

#### 4. Discussion

JCI standards always adhere to the core concept of patient-centeredness. Introducing it into the field of logistics safety management prompts hospitals to deeply

focus on the actual needs of patients and medical staff, and then comprehensively optimize the management process (Wang et al., 2023c; Li et al., 2023c). In the material procurement process, by introducing a scientific supplier evaluation system, suppliers are strictly evaluated from multiple dimensions such as product quality, supply stability, and after-sales service to ensure the high quality of purchased materials and provide a solid guarantee for the reliable development of medical services. In terms of equipment maintenance, according to the equipment's usage frequency, importance, and technical characteristics, a refined preventive maintenance plan is formulated to detect, maintain, and repair equipment in advance, effectively reducing the probability of equipment failures and significantly improving medical work efficiency (Zhao et al., 2022a; Chen et al., 2022; Li et al., 2022).

The logistics safety management scheme of Baise Hospital of Traditional Chinese Medicine, which is constructed based on JCI standards, has achieved the following: By establishing a working leading group, clarifying division of labor and responsibilities, improving various management systems, optimizing various work processes, and strengthening the implementation of responsibilities; by implementing 6S management to improve the medical environment, standardizing the placement of instruments, equipment, and materials in each department in an orderly manner, with clear and unified signs, maintaining the clean and orderly environment of each workplace, improving work efficiency and service quality, regularly carrying out 6S management supervision, inspection, and evaluation, and taking corresponding rewards and punishments according to the inspection results; by comprehensively implementing procurement budget management and standardizing the corresponding procurement process; by implementing secondary warehouse management and strengthening the management of material warehouses through the warehouse information management system; by purchasing third-party property services to strengthen hospital environmental hygiene management, clarifying detailed cleaning service standards and processes, clarifying cleaning frequencies, quality requirements, and inspection mechanisms to ensure the clean and tidy hospital environment, and at the same time reducing the labor cost of logistics support; by implementing the whole-life-cycle management of medical equipment, including procurement, acceptance, installation, commissioning, use training, maintenance, and scrapping, to strengthen the standardized and efficient management of medical equipment; by comprehensively implementing the work safety and fire-safety responsibility system, strengthening regular work safety and fire-safety training and emergency drills, pertinently improving emergency plans, continuously improving the hospital's emergency management level, enhancing the hospital's ability to respond to various sudden safety incidents (Zhao et al., 2021; Chen et al., 2021), strengthening the inspection and maintenance of fire-fighting facilities, comprehensively configuring video surveillance systems, strengthening daily communication and linkage with the public security and fire departments in the jurisdiction, setting up a police office and a fire-con-

trol room, and equipped with full-time personnel to be on duty 24 hours a day. In the evaluation and optimization link after the emergency drill, through in-depth analysis of the problems found in the drill, to ensure the personal safety of hospital staff, patients, and their families, as well as the daily safe operation of the hospital; by purchasing third-party services, clarifying the hospital catering service standards and processes, clarifying food quality and safety requirements and inspection mechanisms, and providing high-quality catering services for hospital staff and patients; by strengthening the management of satisfaction surveys, regularly collecting the opinions and suggestions of patients and staff on the hospital's logistics safety guarantee management service work, and rectifying them in a timely manner; by publicizing the complaint-handling process, timely investigating and verifying relevant complaint incidents, and timely feedbacking the handling measures of complaint incidents, vigorously improving the quality of medical services and patient satisfaction; at the same time, fully considering the differential needs of personnel in different positions, conducting hierarchical training for the management scheme, providing strong support for the improvement of the professional quality of logistics personnel (Wang et al., 2022a; Zhang et al., 2022); finally, incorporating various management work measures into the performance evaluation system, implementing an employee incentive mechanism, formulating rewards and punishments, setting up performance awards, honorary commendations, etc., stimulating employees' work enthusiasm, enhancing employees' sense of responsibility and belonging, and prompting employees to take the initiative to improve work quality and efficiency, injecting new vitality into logistics safety management work (Zhao et al., 2022b; Liu et al., 2022; Wang et al., 2022b).

Guided by JCI standards, the logistics safety guarantee management scheme for modern traditional Chinese medicine hospitals carefully constructed in this study has achieved significant improvements in key indicators after being tested in Baise Hospital of Traditional Chinese Medicine. After statistical testing, the differences in all data are significantly statistically significant, with remarkable achievements. The reason why this scheme is effective is that it deeply integrates the patient-centered concept of JCI standards, comprehensively optimizes the management process, not only improves the system and strengthens supervision and assessment, making logistics safety management more standardized and scientific, but also the hierarchical training system and employee incentive mechanism effectively improve the professional quality and work enthusiasm of logistics personnel, and the perfect emergency management system enhances the hospital's ability to respond to sudden safety incidents.

In conclusion, the logistics safety guarantee management scheme for traditional Chinese medicine hospitals based on JCI standards constructed in this study has a high promotion value. It not only brings a qualitative leap to the logistics safety management of Baise Hospital of Traditional Chinese Medicine, but also provides a successful example for other traditional Chinese medicine hospitals in this region. It is expected that through extensive promotion in this region, the logistics

safety management level of traditional Chinese medicine hospitals will be comprehensively improved, creating a better, safer, and more efficient medical and working environment for patients and medical staff, and promoting the high-quality development of traditional Chinese medicine medical services.

## 5. Limitations of the Study

This study only takes Baise Hospital of Traditional Chinese Medicine as a case, with a single sample, and the universality of the research results needs to be further verified. The research methods are mainly a combination of qualitative and quantitative methods, lacking in-depth case-by-case comparison analysis. Follow-up studies can expand the sample scope and use a multi-case study method for in-depth exploration.

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## Conflicts of Interest

The authors declare that there is no personal interest conflict in the research process, and the research results are true, objective, and fair.

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