WHIOCE PUBLISHING PTE. LTD.
PROVIDING FIRST-CLASS SCIENTIFIC INFORMATION FOR TOP SCHOLARS

2026 Volume 11, Issue 1
Journal of Medicines Development Sciences
ISSN: 2382-6371(Online) ISSN: 2382-6363(Print)

Refining the Application Effect of Pharmacy Management Model in Hospital Inpatient Pharmacy Management and Its Impact on the Comprehensive Skill Level of Pharmacy Staff

Jing Zhou*
Taizhou Third People's Hospital, Taizhou 225321, Jiangsu, China

**Author to whom correspondence should be addressed.*

Abstract: *Objective:* To analyze the effect of applying the detailed pharmacy management model in hospital inpatient pharmacy management, and to explore the impact of its application on the comprehensive skill level of pharmacy staff. *Methods:* 10 staff members were selected to participate in the study from July 2023 to June 2024 in the hospital's inpatient pharmacy as the control group, and the conventional management model was implemented. 10 staff members from the same group were selected to participate in the study from July 2024 to June 2025 in the hospital's inpatient pharmacy as the research group. A refined pharmacy management model was implemented to compare data between groups. *Results:* Compared with the control group, the study group's time for unilateral prescription and treatment of drug deficiency was significantly shorter, the daily dosage was significantly higher, and the overall skill level was significantly higher, $P < 0.05$. *Conclusion:* The application of a detailed pharmacy management model in hospital inpatient pharmacy management has ideal results, especially the comprehensive skill level of pharmacy staff has been significantly improved.

Keywords: Refined pharmacy management model; Hospital inpatient pharmacy management; Application effect; Comprehensive skill level of pharmacy staff

Online publication: March 16, 2026

1. Introduction

In clinical medication protection, the core link is inpatient pharmacy management, and its management quality is directly related to patient medication safety, therapeutic effects, and the overall medical service level of the hospital. As the clinical medical system reform continues to deepen, clinical diagnosis and treatment needs have become increasingly diversified. Due to the complex conditions of inpatients, higher requirements have been put forward for drug dispensing accuracy, timeliness, and personalized services [1]. In the past, the conventional pharmacy management model was used to manage inpatient pharmacies in hospitals, which mainly involved process-based operations. However, there were

some problems, which resulted in low drug dispensing efficiency, untimely handling of drug shortages, and occasional errors, which affected the smooth clinical diagnosis and treatment work and caused potential drug safety risks. Clinical studies have concluded that the key factor that determines the management quality and service efficiency of hospital inpatient pharmacies is the comprehensive skill level of pharmacy staff. Their professional ability, operational proficiency, emergency response capabilities and sense of responsibility will have a direct impact on the accuracy and timeliness of drug dispensing [2]. In recent years, the medical field has gradually studied the concept of refined management in depth, and proposed the application of refined pharmacy management models, optimizing management processes, implementing responsibility systems, and targeted empowerment of skill training, which can effectively solve the problems encountered during the application of conventional pharmacy management models [3]. This study selected 10 pharmacy staff to analyze the effect of applying the refined pharmacy management model in hospital inpatient pharmacy management and explore the impact of its application on the comprehensive skill level of pharmacy staff.

2. Materials and methods

2.1. Information

In the hospital's inpatient pharmacy from July 2023 to June 2024, 10 staff members were selected to participate in the study as the control group and a conventional management model was implemented. In the hospital's inpatient pharmacy from July 2024 to June 2025, 10 staff members from the same group were selected to participate in the study as the research group and a refined pharmacy management model was implemented. 2/8 men and women, age 28–55 (39.62 ± 3.69) years old, working experience 6–30 (18.55 ± 4.15) years. Inclusion criteria: (1) Have a nationally recognized pharmacist or above professional technical qualification certificate; (2) Work continuously in an inpatient pharmacy for 1 year or more; (3) Be familiar with routine management procedures; and (4) Voluntarily participate and provide informed consent. Exclusion criteria: (1) Absence from work for more than 30 days due to maternity leave, sick leave, etc., during the research process; (2) Transferred or resigned midway; (3) Record of serious professional violations or history of major medical errors.

2.2. Method

The control group implements a conventional management model: regularly cleans the pharmacy to keep it tidy, stores drugs according to conventional classifications, manages special drugs (narcotic drugs, psychotropic drugs, etc.) separately, conducts monthly inventory checks, performs prescription review, drug deployment, ward distribution, etc. in accordance with traditional procedures, performs fixed shift work, conducts annual routine business training, and passively handles medication errors and clinical feedback issues.

The research team implemented a detailed pharmacy management model:

(1) Organizational structure optimization

A team was formed, with the team leader being the person in charge of the pharmacy and the deputy team leaders being three senior pharmacists. The division of responsibilities of each member was clear, and a three-level management system was established, involving team leader coordination, deputy team leaders in charge, and team members' execution. Weekly work promotion meetings were held to analyze problems in the management process, formulate targeted improvement measures, summarize work every month, and continuously optimize the management plan.

(2) Personnel skills improvement system

Special training is held twice a month, covering the key points of prescription review in inpatient pharmacies, special drug dispensing specifications, split drug management skills, identifying and handling adverse drug reactions, communication skills with clinical departments, etc. After the training is completed, theoretical and practical assessments will be conducted, and the results will be linked to performance. A lecture on cutting-

edge knowledge is held every quarter, and clinical experts and pharmacy professors are invited to give lectures, covering the clinical application of new drugs, medication guidance for special groups, drug interactions, etc., to ensure that staff update their professional knowledge in a timely manner. A job skills competition is held every six months, and competition items are set up, including prescription review speed and accuracy, dismantling of drug dispensing standards, emergency response capabilities, etc., to enhance staff's enthusiasm for learning.

(3) Refined environment and drug management

Formulate detailed environmental management rules for the pharmacy, clarify the cleaning standards and frequency of walls, floors, shelves, and operating tables. Wipe the floor twice a day and wipe the shelves once a week. Divide functional areas such as the drug preparation area, storage area, disassembly area, and delivery area. Clear signs will be set up. It is prohibited to place items unrelated to the work. Classified trash cans will be equipped. Regular cleaning and disinfection will be done. Smoking and storage of flammable and explosive items are strictly prohibited to ensure that the environment complies with GSP standards. When storing drugs, combine the properties of the drugs, including refrigeration (28 ℃), coolness (≤ 20 ℃), and normal temperature (10–30 ℃). Record the temperature and humidity once a day, in the morning and afternoon. If the range is exceeded, make timely adjustments, record the reasons, and place the drugs according to their action categories and dosage forms., use red warning signs that sound, look, and appear to be high warning drugs, store them separately in special shelves, implement the principle of recent first out, volatile first out, place drugs with an expiration date of ≤ 6 months in a conspicuous position on the outside of the shelf, establish a dynamic management ledger, and do weekly verification work. Communicate with various clinical departments on a weekly basis to grasp drug consumption needs, and dynamically adjust the procurement plan based on changes in hospital admissions and disease trends to avoid drug backlogs or shortages. Build an early warning mechanism for drug shortages. If the drug inventory is lower than the safety threshold, it can automatically remind you, report it to the procurement department within 2 hours, and complete the replenishment work within 48 hours. Conduct a comprehensive inventory every month, implement a double-signature system for checking accounts, ensure that the accounts are consistent, and promptly analyze the profit and loss situation and handle it properly.

(4) Work process closed-loop optimization

Establish a "dual-person review" system. One pharmacist is responsible for reviewing general prescriptions, and two senior pharmacists are responsible for cross-checking special drug prescriptions (narcotic drugs, psychotropic drugs, chemotherapy drugs, etc.), focusing on drug contraindications, incompatibility, dosage rationality, suitability of administration routes, etc., and reviewing unqualified prescriptions, promptly communicating with clinicians and making corrections to ensure prescription compliance and safety. A standardized dispensing process will be formulated, with clear operational specifications for weighing, packaging, labeling, and verification. One person will dismantle and verify the disassembled drugs to ensure that the name, dosage form, specification, and quantity of the drug are consistent with the prescription. After the deployment is completed, the second person will review it and sign for confirmation if it is correct. Provide door-to-door drug delivery services, complete classification and packaging work according to wards, and equip special delivery boxes. Together with the ward nurses, they should do a double check and handover work, including the name, specification, quantity, validity period, etc. of the medicine, sign the handover record sheet, accurately deliver the medicine, and do a good job in deployment, distribution, and handover.

(5) Shift scheduling and quality control system

Flexible scheduling will be done based on the peak hours of inpatient pharmacy work and the medication needs of clinical departments, and the manpower allocation will be increased during peak hours. Shift and shift preparation settings will be strengthened to respond to emergencies. Make the shift handover process clear, do a good job in written and oral handover work, and ensure that there are no omissions in the connection. Develop a comprehensive skills assessment scale for staff, conduct quantitative assessments by the team every month,

and establish a non-punitive error reporting system. Staff need to proactively report potential risks and error events discovered during work, analyze root causes, formulate improvement measures, and build a closed-loop management system to discover problems, analyze causes, formulate countermeasures, track implementation, and evaluate effects.

2.3. Observation indicators

(1) Compare the two groups' unilateral prescription time, time to deal with drug deficiency, and daily dosage.

(2) Compare the comprehensive skill levels of the two groups. There are 4 dimensions, each worth 100 points. The higher the score, the higher the level.

2.4. Statistical analysis

Data calculation was completed with the statistical SPSS 28.0 software. Measurement data were described with mean ± standard deviation (SD), t test, and count data were described with %, χ^2 test, $P < 0.05$, statistically significant.

3. Results

Compared with the control group, the study group's time for unilateral prescription preparation and treatment of drug deficiency was significantly shorter, the daily dosage was significantly more, and the overall skill level was significantly higher, $P < 0.05$ (**Table 1** and **Table 2**).

Table 1. Comparison of the unilateral dispensing time, time to deal with drug deficiency, and daily dosage between the two groups

Group	Unilateral adjustment time (min)	Time to deal with drug shortage situation (min)	Daily dosage (sheets)
Research group (n = 10)	1.91 ± 0.33	9.85 ± 1.86	489.31 ± 10.55
Control group (n = 10)	3.86 ± 0.67	14.24 ± 2.17	426.51 ± 9.81
t	8.2565	13.7851	4.8573
P	< 0.05	< 0.05	< 0.05

Table 2. Comparison of the comprehensive skill levels of the two groups (points)

Group	Review prescription	Mix medicine	Disposal of substandard drugs	Guide clinical medication
Research group (n = 10)	94.27 ± 4.96	93.66 ± 5.11	92.35 ± 4.77	92.88 ± 4.66
Control group (n = 10)	80.57 ± 6.71	79.88 ± 6.52	78.94 ± 6.42	81.22 ± 5.88
t	5.1920	5.2604	5.3020	4.9145
P	< 0.05	< 0.05	< 0.05	< 0.05

4. Discussion

The key hub of hospital drug management and clinical services is the hospital's inpatient pharmacy. Its management efficiency is directly related to clinical medication safety and the continuity of diagnosis and treatment [4]. In order to ensure the quality of management, attention should be paid to improving the comprehensive skill level of staff. The conventional management model has shortcomings and is difficult to adapt to the current diversified clinical medication needs. Therefore, this study proposes to adopt a refined pharmacy management model.

The research results show that the time for unilateral dispensing and the time for dealing with drug shortages in the study group are significantly shorter than those of the control group, and the daily dosage is significantly higher than that of the control group. Analysis of the reasons for the differences is that the refined pharmacy management model has achieved systematic optimization of work processes and also achieved precise adaptation of resource allocation. Carry out a detailed pharmacy management model, build a three-level management system, and clearly define the responsible parties in each link [5]. Management instructions can be implemented efficiently, standardized dispensing processes can be implemented, and systems such as “double review” and “one person, one split, one check” can be implemented. Repeated checks and operational redundancies can be reduced, and the dispensing efficiency can be significantly improved. In terms of product management, a dynamic inventory ledger and drug shortage early warning mechanism are constructed to organically integrate with clinical needs [6]. The procurement plan is dynamically adjusted to proactively prevent and control drug shortages. The time for processing drug shortages is greatly shortened. A flexible scheduling system is implemented to accurately match the manpower demand during peak hours, which can effectively increase the total daily dispensing amount.

In terms of improving the comprehensive skill level of staff, the scores of the research group in the four core dimensions of reviewing prescriptions, dispensing drugs, handling substandard drugs, and guiding clinical medication were all significantly higher than those of the control group. This is because a full-cycle, targeted skills improvement system was built during the implementation of the refined pharmacy management model [7]. A refined pharmacy management model has been carried out. The traditional training model has been broken. Special training is carried out twice a month. Practical content, such as prescription review points and special drug deployment are accurately covered. Assessment results and performance are linked to strengthen the driving force for learning. Experts are invited to give cutting-edge knowledge lectures every quarter to improve staff’s knowledge of new drugs, medication for special groups, and other fields, ensuring that professional knowledge keeps pace with the times. Job skills competitions are held every six months, and practical competitions are used to standardize staff operating procedures and improve staff emergency response capabilities. In addition, a non-punitive error reporting system has been established in the refined pharmacy management model, so staff can proactively sort out work loopholes [8], achieve self-improvement in analyzing problems and formulating countermeasures, and further consolidate their comprehensive skills foundation. What needs attention is that in the process of applying the refined pharmacy management model, the entire chain of organizational structure, personnel training, process control, and quality supervision has been coordinated to simultaneously improve management efficiency and personnel capabilities. By building a three-level management system and using standardized processes and precise management and control, human errors have been reduced, and work efficiency improved. In practice, targeted training and competition incentives have been carried out, which can continuously strengthen the professionalism of staff. This is why the research team has shown significant advantages in various efficiency indicators and skill dimensions.

5. Conclusion

In summary, the application of the refined pharmacy management model in hospital inpatient pharmacy management has ideal results. The time for unilateral dispensing and handling of drug shortages is significantly shorter, the daily dosage is significantly higher, and the comprehensive skill level of pharmacy staff has been significantly improved. It is worthy of clinical use and promotion.

About the author

Zhou Jing: female, Han, Jiangsu, undergraduate, pharmacist in charge, Taizhou Third People's Hospital, research direction: pharmaceutical management.

Disclosure statement

The author declares no conflict of interest.

References

[1] Li J, Lin HY, Mo XQ, 2025, Application of Refined Management in Inpatient Pharmacy Management. China Health Industry, 22(18): 89–92.

[2] Zhong YZ, Yu JQ, Qin YF, 2025, Discussion on the Role of Chain Quality Control Management Model in Improving the Work Efficiency, Work Quality and Patient Medication Experience of Inpatient Pharmacy Pharmacists. Chinese Prescription Drugs, 23(16): 38–41.

[3] Xu XX, 2025, Research on the Application of Refined Management Model in Reducing the Error Rate of Confusing Medicines in Inpatient Pharmacies. China Health Industry, 22(03): 110–113.

[4] Han YX, Du SF, Wang L, 2025, Observation on the Application of Non-punitive Drug Dispensing Error Reporting System Combined with PDCA Cycle Management in Drug Dispensing in Inpatient Pharmacies. Chinese Prescription Drugs, 23(12): 61–65.

[5] Ye SL, Ruan HQ, Kuang RZ, 2025, Application Effect of Optimizing Prescription Management Model in Inpatient Pharmacy Management. Medical Frontiers, 15(17): 140–143.

[6] Luo JC, Hu HL, Chen W, et al., 2025, Analysis of the Effect of PDCA Cycle Model Combined with Root Cause Analysis Method on Reducing Prescription Dispensing Errors in Inpatient Pharmacies. Chinese Prescription Drugs, 23(11): 36–39.

[7] Wang J, Ge WH, Xu RJ, et al., 2025, Constructing a Closed-Loop Management System and Effect Evaluation of Oral Drug Dismantling in Inpatient Pharmacies Based on SWOT Analysis. Chinese Pharmacy, 36(04): 401–406.

[8] Huang QH, Liang Y, Lai LC, 2025, Application Effect of 8S Lean Management Method in Inpatient Pharmacy Management. Chinese and Foreign Medical Research, 4(12): 154–156.