

# Analysis of the Implementation of Integrated Healthcare Management in Preoperative Preparation

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**Abstract:** *Objective:* To strengthen preoperative preparation management and reduce preoperative preparation defects. *Methods:* We set up a special medical care management team to investigate the preoperative preparation in surgical departments, analyze the causes of the shortcomings in preoperative preparation, and propose countermeasures. The medical staff jointly formulated plans related to preoperative preparation management including clear outline of responsibilities, strengthening of training, integrated medical care, timely feedback, and continuous improvement. Besides, the preoperative preparation of patients before and after the improvement measures were compared using statistical analysis. *Results:* The rate of inadequate preoperative preparation was 11.14 per thousand before the integrated management model was implemented. After the implementation of the integrated management model, the rate of inadequate preoperative preparation decreased to 2.99 per thousand, and the difference was statistically ( $P < 0.05$ ). *Conclusion:* The integrated management of preoperative preparation can help reduce the rate of preoperative complications and ensure the safety of surgery.

**Keywords:** Integrated healthcare; Preoperative preparation; Rate of inadequate preoperative preparation

*Online publication:* May 31, 2023

## 1. Introduction

Preoperative preparation is one of the important parts of the perioperative period, and the quality of the perioperative preparation very much depends on the preoperative preparation, which will also affect the effect of the surgical treatment <sup>[1]</sup>. For surgical patients, preoperative anxiety, panic, and inadequate preoperative preparation will increase the risks and affect the quality of surgery, causing serious physical, psychological and financial burdens, which can easily cause medical disputes <sup>[2]</sup>. For the safety of the patients and staff of the surgical department, an integrated management of the preoperative preparation is crucial, so that the preoperative preparation process can be more refined.

## 2. Information and methods

### 2.1. General information

A total of 12970 patients who underwent surgery in the large operating room between January 1, 2020, and December 30, 2020, in The First Affiliated Hospital of Jinan University were selected and divided into two groups according to the time of operation. The control group consisted of 5296 patients who underwent surgery between January 1 and June 30, 2020. On July 1, 2020, the integrated management of preoperative preparation was initiated, so 7674 patients who underwent surgery between July 1 and December 30, 2020,

were included in the observation group. Inadequate preoperative preparation meant the nurses in the operating room did not complete their tasks when the patient was sent to the operating room from the ward, . The preoperative preparation items included wrist straps, surgical consent forms, safety checklists, risk assessment forms, and preoperative checklists of 5 categories of defects, covering a total of 22 items. Preoperative preparation defect rate (per thousand) was defined as follows: Number of cases of inadequate preoperative preparation /Total number of patients × 1000 (only patients who were operated in the large operating room).

## **2.2. Method**

The preoperative preparation management team was led by the Director of Surgery and the Chief of Surgical Nursing and consisted of a chief nurse and a head surgical nurse. The Director of Surgery was responsible for supervising the implementation of preoperative preparations and surgical care. The members of the team were responsible for refining the preoperative preparation and implementing relevant countermeasures. The surgical nurse was responsible for supervising the registration and feedback of patients that experienced inadequate preoperative preparation, and the surgical caregiver was responsible for supervising each patient associated with inadequate preoperative preparation for cause analysis and propose improvement measures.

## **2.3. Status survey**

Through a retrospective analysis of 5296 items involved in preoperative preparation for patients who were operated in the main operating room between January 1 and June 30, 2020, it was found that 59 patients were affected by inadequate preoperative preparation, with 7 cases related to wristband, 20 cases related to surgical consent forms, 9 cases related to safety checklists, 9 cases related to risk assessment forms, 14 cases of preoperative checking of unilateral defects. The rate of inadequate preoperative preparation was 11.14 per thousand.

## **2.4. Causal analysis**

Through brainstorming and drawing a fishbone diagram, the team members identified the main reasons for the inadequate preoperative preparation: (1) insufficient understanding of preoperative safety management.

## **2.5. Improvement measures**

(1) The Director of Surgery urged the medical staff to implement the integrated management system and reaffirmed the need for clear communication regarding the person responsible for signing, the time of signing, and other related requirements. (2) The Director of Surgery reiterated that the surgical site must be indicated by the main surgeon or other relevant doctors before surgery by marking the surgical site on the patient with a “plus” sign for identification. (3) The operating room immediately provided feedback on inadequate preoperative preparation to the section director who is responsible for rectification. (4) Steps were taken to refine the preoperative inspection process, where the time and site inspection, person in charge, and the content and order of inspection were defined. (5) Further steps were taken to standardize the procedure of inspection and establish the sequence of medical record keeping regarding patient information to ensure that the inspection was done well.

In addition to the above measures, there was a consensus that patients could not undergo surgery without a doctor’s signature, surgical site identification, or a wristband.

## **2.6. Statistical analysis**

In this study, SPSS 22.0 software was used to analyze and process each set of data, counting the number of

cases of inadequate postoperative preparation. Items of inadequate preoperative preparation included wrist straps, surgical, safety checklist, risk assessment form, preoperative check unilateral defects, a  $\chi^2$  test was performed, with  $P < 0.05$  indicating differences that are statistically significant.

### 3. Results

The rate of inadequate preoperative preparation of the observation group was 2.99 per thousand (23/7674), which was significantly lower than the control group, which was 11.14 per thousand (59/5296), and the difference was statistically significant ( $P < 0.05$ ) as shown in **Table 1**.

**Table 1.** Comparison of preoperative preparation defect rates between the two groups of patients

Group	Number of patients	Number of inadequate preoperative preparation	Rate of inadequate preoperative preparation
Control group	5296	59	11.14
Observation group	7674	23	2.99
<i>P</i>			< 0.05

The incidence of inadequate preoperative preparation of the two groups of patients were compared based on the five categories mentioned. The rate of incidence of preoperative preparation of observation group was significantly lower than that of the control group, and the differences were statistically significant ( $P < 0.05$ , as shown in **Table 2**).

**Table 2.** Comparison of the incidence of preoperative preparation defect categories in the two groups of patients

Group	The number of cases	Wrist strap	Surgical consent form	Security checklist	Risk assessment forms	Preoperative checklist
Control group	5296	7 (1.32)	20 (3.78)	9 (1.70)	9 (1.70)	14 (2.64)
Observation group	7674	1 (0.13)	1 (0.13)	2 (0.26)	2 (0.26)	8 (1.04)
<i>P</i>		0.007	0.0000003	0.006	0.006	0.029

### 4. Discussion

Healthcare integration is a kind of interpersonal relationship between physicians and nurses. It is not simply a matter of doctors and nurses working together, it is also about effective communication, where each party contributes their own strength to enhance medical security [3]. Preoperative preparation is not only the work of nurses, but also all medical and healthcare staff [4]. In this study an integrated medical care management model was implemented. Although the implementation of improvement measures only lasted for 6 months, the results of the study show that the rate of inadequate preoperative preparation significantly decreased, indicating that the management model is applicable to the management of surgical preparation.

Surgery is an important method of treatment, and good preoperative preparation is an important part ensuing a successful surgery [5].

The preparation of surgery is performed in the treatment of various diseases, and it involves not only technical aspects but also management due to its complexity and the number of medical personnel involved [6]. Only by strengthening the preoperative preparation can the rate of inadequate preoperative preparation be reduced. An orderly medical system requires adequate preoperative preparation, and this study reaffirmed use of medical instruments and surgical identification. The director of the section was

responsible for supervising the implementation of the medical system. The occurrence of inadequate preoperative preparation was recorded by the nurses in the operating room and sent back to the relevant department in time for immediate rectification to avoid the recurrence of similar situations, and the rate of inadequate preoperative preparation after the implementation of this model was reduced to 6.07 per thousand (8/1319).

Patient safety is the priority of hospital management. In this study, preoperative preparation management was effectively implemented, and the feasibility of the preoperative preparation process was assessed <sup>[7]</sup>. In this study, the preoperative preparation process was refined from the procedure of preoperative inspection to the language used in preoperative inspection so that the preoperative process can smoother. According to the statistical report released by Joint Commission on Accreditation of Healthcare Organizations (JCAHO), sending patients to the wrong surgical department ranks second in in the causes of serious medical accidents. Therefore, it is important to correctly identify the surgical to prevent performing the wrong surgery on the wrong patient <sup>[8]</sup>. The logo of the operating room is a crucial detail. In addition, there was a lack of coordination and cooperation between the medical staff, and there was also an imbalance of power between physicians and nurses, where nurses are like subordinates. Physicians direct the work of nurses, and nurses only carry out what they are told to do. Therefore, it is difficult for nurses to communicate with physicians effectively, develop a consensus on medical care, and draw out the responsibilities and rights of nurses in the preoperative process. Besides, it is also important to come up with comprehensive preoperative inspection content that includes both the roles of doctors and nurses. Preoperative preparations, whether by doctors or nurses, may or may not be complete, and inspection nurses have the right to request perfect work before sending patients into the operating room for surgery. After the implementation of this consensus, surgical site identification rate in patients reached 100%, and mistakes in medical documents also decreased sharply.

## 5. Conclusion

Integrated healthcare management promotes the cooperation between healthcare and medical staff so that preoperative preparation can be more standardized and institutionalized. In this way, the goal “correct patient, correct operating part, and correct surgery” can be achieved and the patient’s safety can be ensured.

## Disclosure statement

The authors declare no conflict of interest.

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