

Utilizing Quality Control Circles (QCC) to reduce the incidence of postoperative pain scores ≥ 4 points in patients undergoing laparoscopic liver or gastrointestinal tract surgery.

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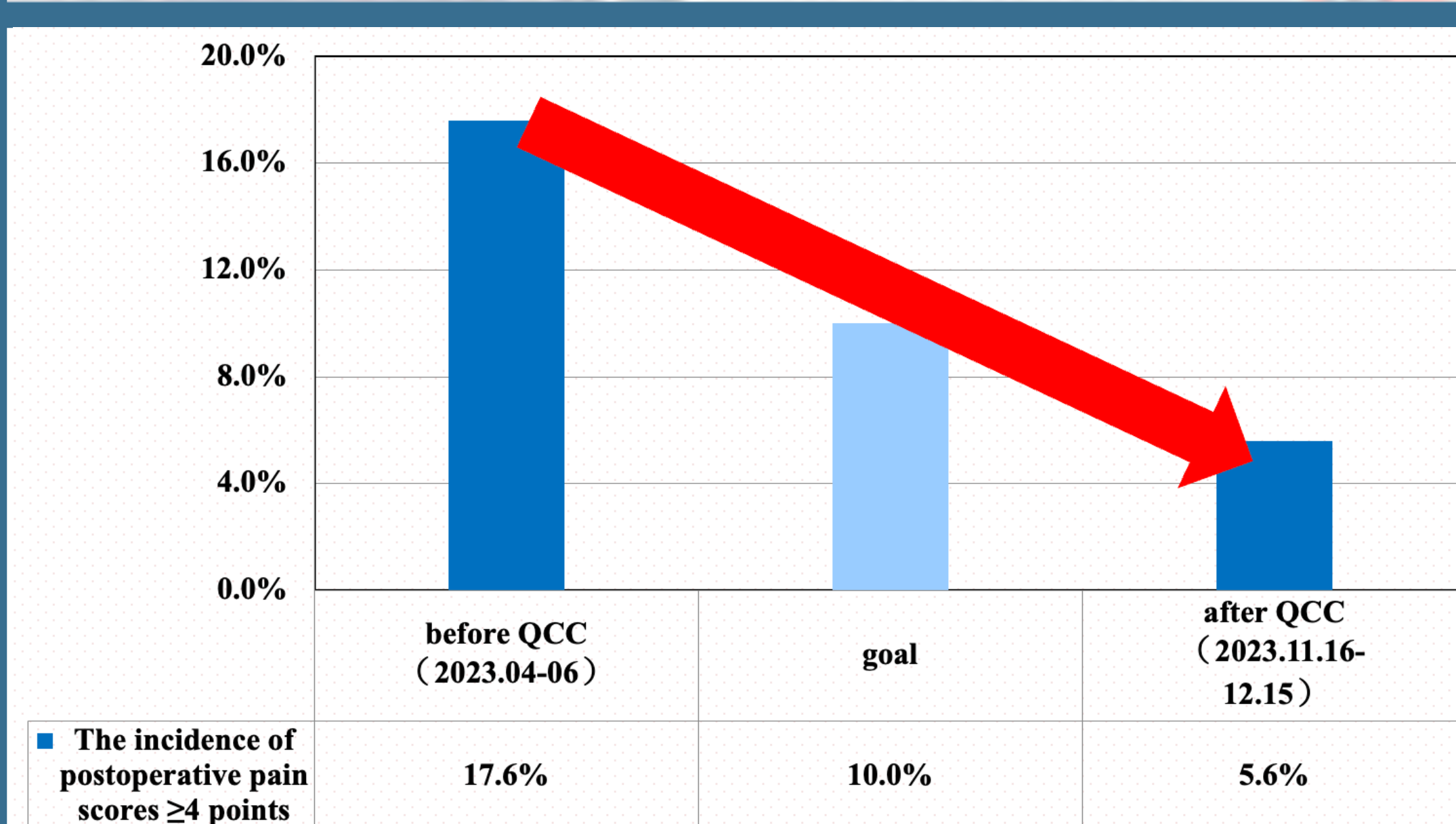
INTRODUCTION

Postoperative pain is a major issue, with about 75% of surgical patients experiencing it, and nearly 30% facing moderate to severe pain. This pain not only impacts patients' physiological well-being but also exerts profound effects on their psychological state and overall postoperative recovery. **Effective perioperative pain management**, which encompasses **multimodal analgesia** and **non-pharmacological interventions**, is imperative for ensuring optimal pain control and facilitating enhanced recovery following surgery. In Q2 2023, we observed a notably high incidence of postoperative pain scores ≥ 4 points among patients undergoing laparoscopic liver or gastrointestinal tract surgery, reaching 17.6%. Our purpose is to explore the factors that critically influence postoperative pain. By doing so, we aim to create a safer and higher-quality perioperative care environment for surgical patients.

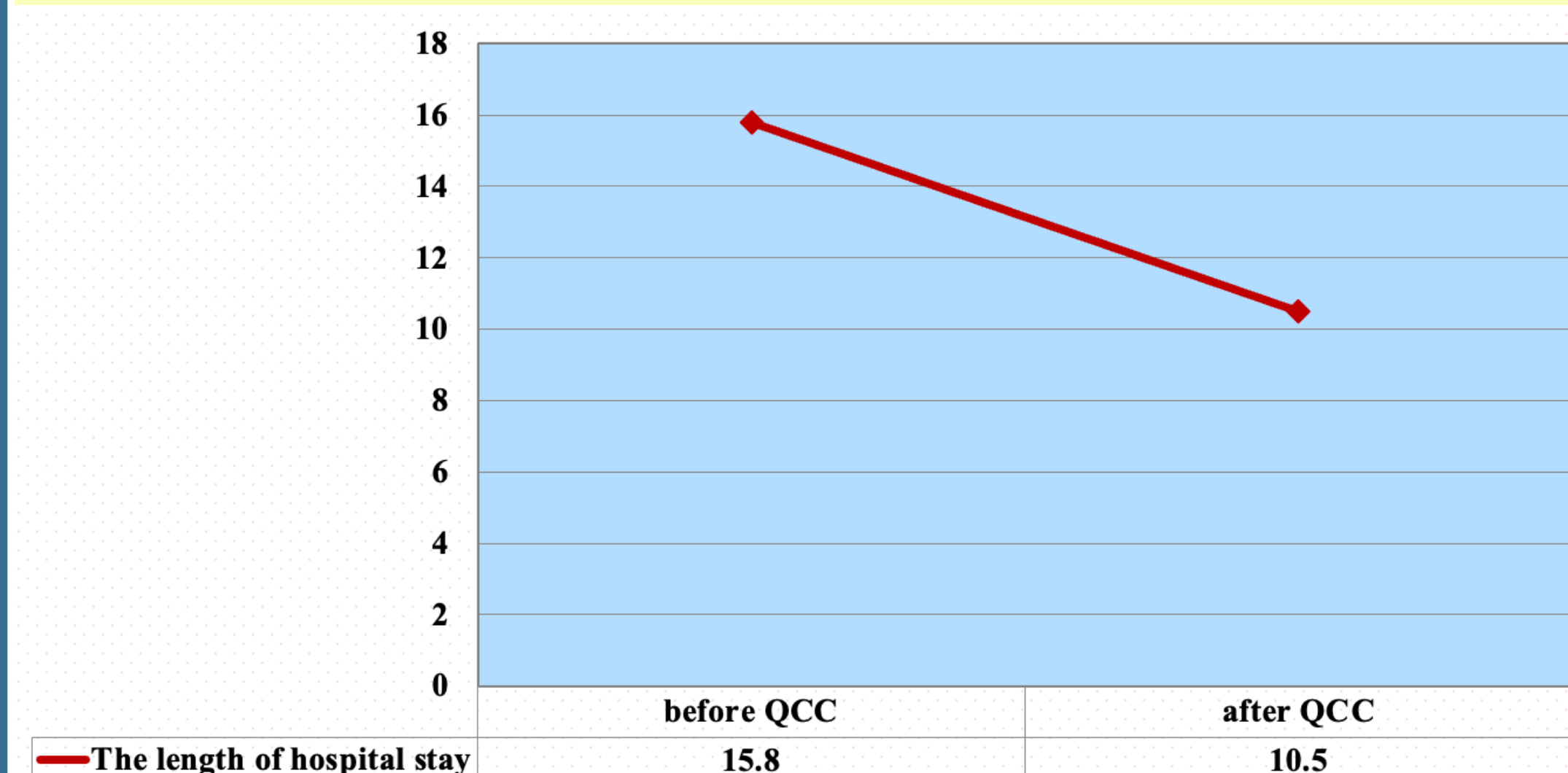
QCC TEAM

- QCC Team Name: Hao-Shu Circle
- Event Timeframe: **March 1th-December 31th, 2023**
- Unit Characteristics: The **Surgical Ward** under the Department of Nursing at Tri-Service General Hospital in Taiwan
- QCC Team Members: The Quality Control Circle (QCC) was composed of seven **registered nurses**, a **pharmacist**, a **surgeon**, and a **pain management physician**.

RESULTS



The incidence of postoperative pain scores ≥ 4 points among patients undergoing laparoscopic liver or gastrointestinal tract surgery decreased significantly from 17.6% to 5.6%.



Additionally, there was a notable reduction in the length of hospital stay following these surgeries, decreasing from an average of 15.8 days to 10.5 days.

CONTACT INFORMATION



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METHOD

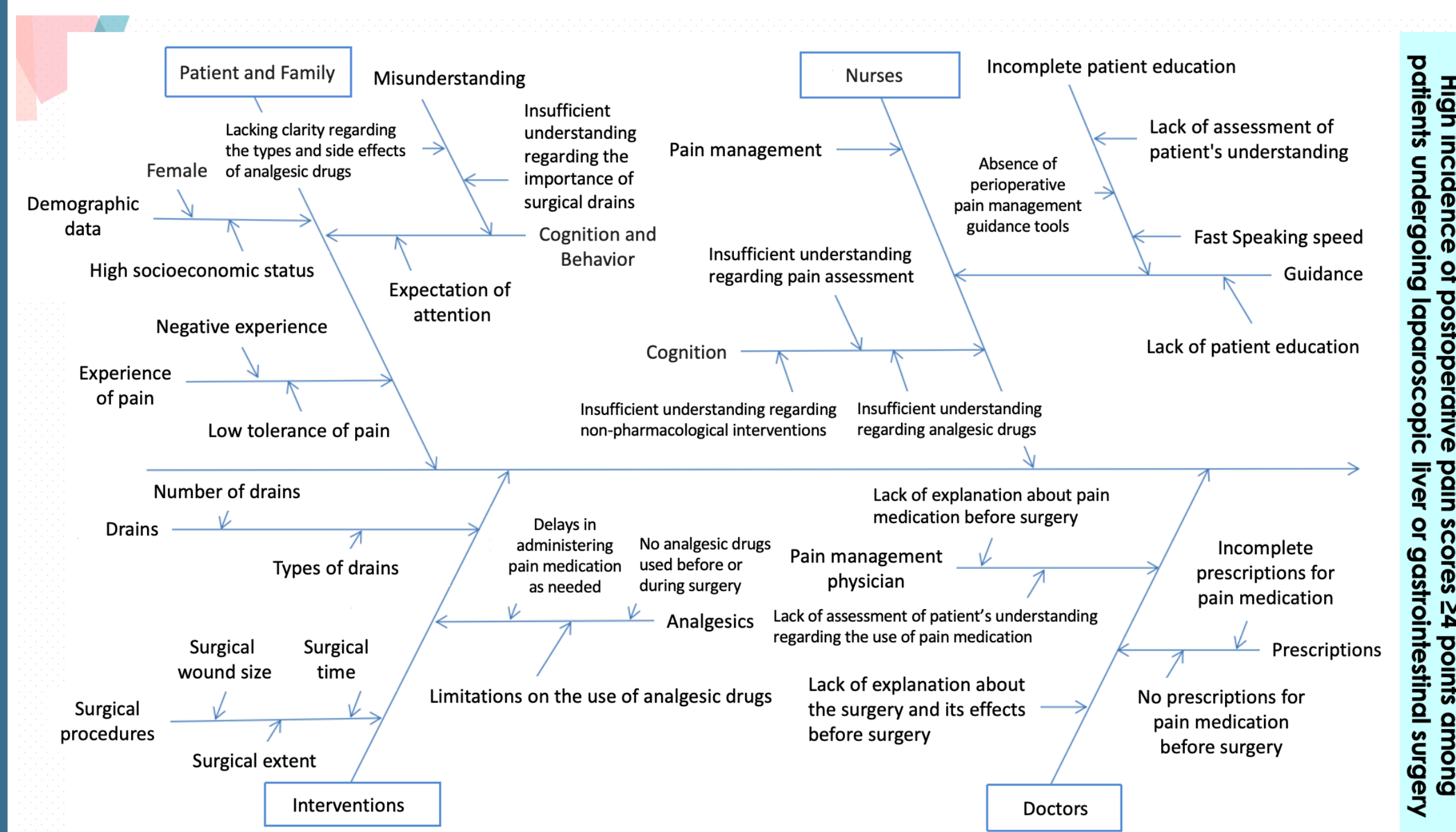
The incidence formula of postoperative pain scores ≥ 4 points

$$\frac{\text{Number of patients undergoing laparoscopic liver or gastrointestinal surgery with pain scores } \geq 4 \text{ points within 24 hours}}{\text{Number of patients undergoing laparoscopic liver or gastrointestinal surgery}} \times 100\%$$

Current situation

Time	Number of patients undergoing laparoscopic liver or gastrointestinal surgery	Number of patients undergoing laparoscopic liver or gastrointestinal surgery with pain scores ≥ 4 within 24 hours	The incidence of postoperative pain scores ≥ 4 points (%)
2023/03 2023/06	34	6	17.6%

Fishbone diagram



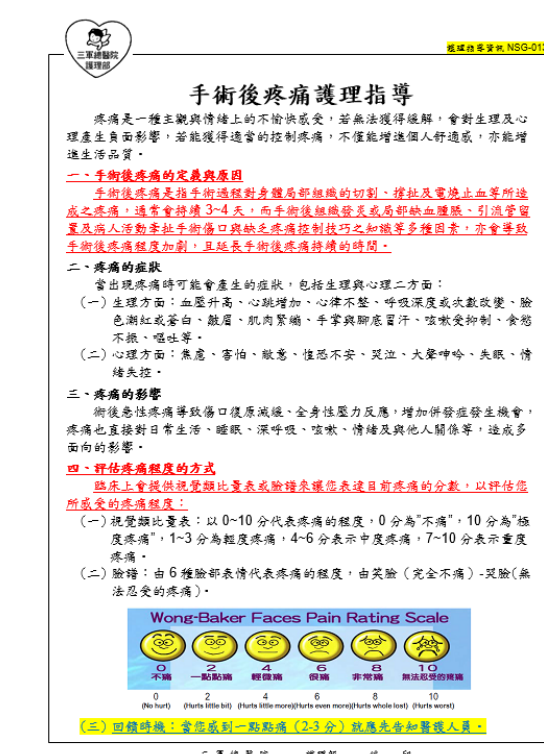
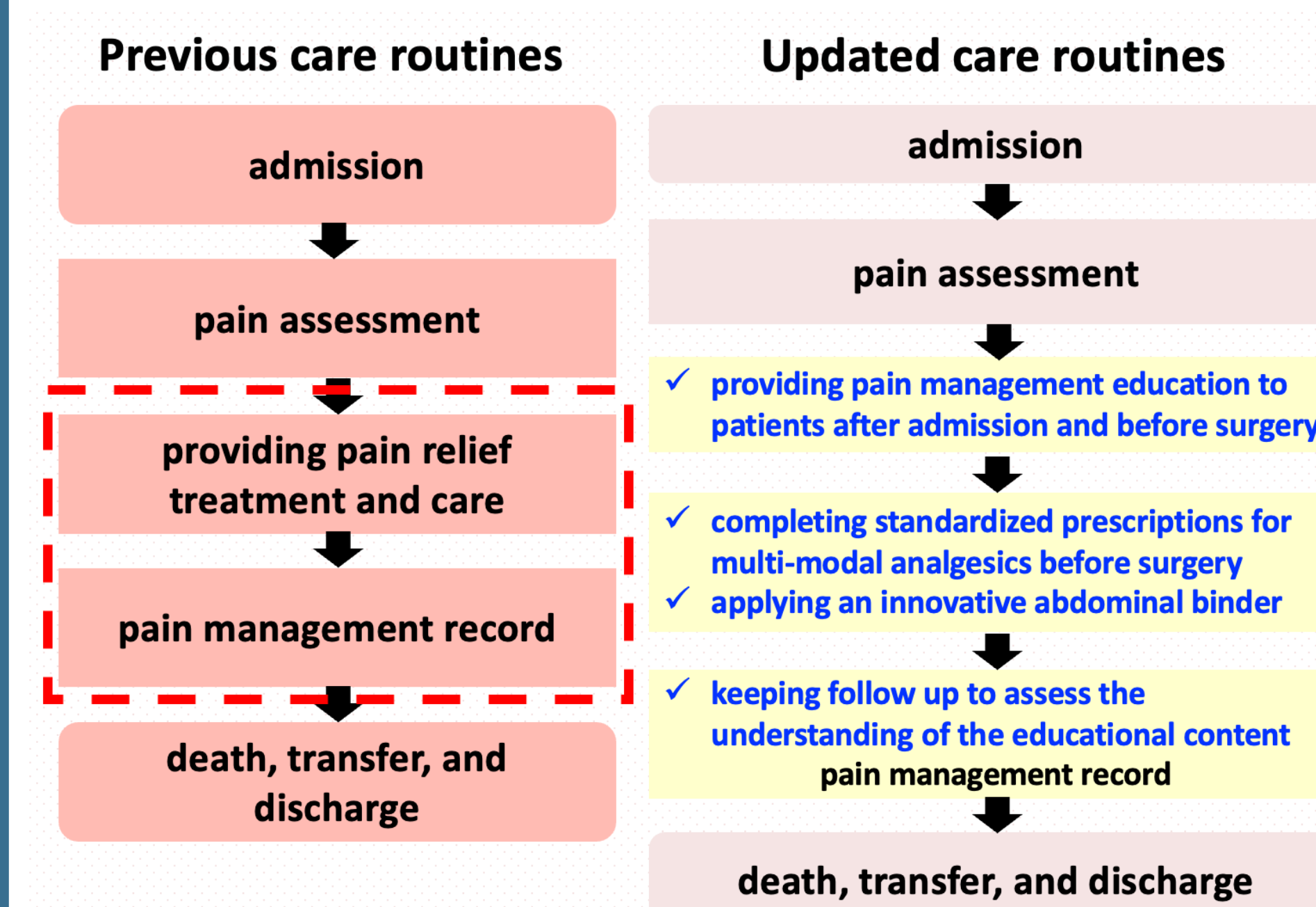
High incidence of postoperative pain scores ≥ 4 points among patients undergoing laparoscopic liver or gastrointestinal surgery

Factor Verification

Key factor		On-site case investigation (collecting cases from 7/1 to 7/31, total of 5 people)	Is it a true factor?
1	Lacking clarity regarding the types and side effects of analgesic drugs	60% of patients are unclear about the effects and side effects of analgesic drugs. Among them, 2 people (66.7%) believe that using analgesic drugs will prolong recovery time, and 3 people (100%) believe that using analgesic drugs will cause liver and kidney damage.	✓
2	Insufficient understanding regarding the importance of surgical drains	80% of patients with J-P drains postoperatively are unclear about the importance of the drains, and 60% of them experience pain due to pulling on the drains during movement.	✓
3	Incomplete prescriptions for pain medication	60% of pain medication prescriptions were incomplete within 30 minutes after surgery. Additionally, 0% of nurses who noticed the incomplete pain medication prescriptions failed to remind the physician to complete them.	✓
4	No prescriptions for pain medication before surgery	40% of physicians did not complete pain medication prescriptions within 30 minutes before the patient returned to the ward after surgery. After being reminded by nurses, 100% of them were able to complete one type of PRN pain medication prescriptions.	X
5	Lack of explanation about pain medication before surgery	100% of the anesthesiologists informed the patient about the option of using PCA (Patient-Controlled Analgesia) before the surgery.	X
6	Delays in administering pain medication as needed	80% of patients reported that pain medication as needed cannot be administered immediately. Additionally, a review of nursing records revealed that, when patients were in pain, 0% reported receiving medication within 15 minutes, 40% reported receiving it within 30 minutes, and 60% reported receiving it only after more than 30 minutes.	✓
7	Fast Speaking speed	Using the same educational materials to measure speaking speed, 38.8% of nurses completed patient education within 3 minutes, 22.2% completed it within 5 minutes, 27.7% completed it within 10 minutes, and 11.1% took more than 10 minutes to complete.	✓
8	Lack of assessment of patient's understanding	The questionnaire used to test patients' understanding of the educational content consists of 6 questions. 0% of patients fully understood the educational content, 80% of patients partially understood it (i.e., answered 3-5 questions correctly), and 20% of patients did not understand it at all (i.e., answered fewer than 2 questions correctly).	✓
9	Insufficient understanding regarding analgesic drugs	Using the analgesic drugs knowledge assessment form to evaluate nurses' understanding, 91.6% of nurses scored above 60 points, while only 8.3% scored below 60 points.	X
10	Insufficient understanding regarding non-pharmacological interventions	Using the non-pharmacological interventions knowledge assessment form to evaluate nurses' understanding, 100% of nurses scored above 60 points, and 0% of nurses scored below 60 points.	X

STANDARDIZATON

Updated care routines



The 'Multimedia Pain Management Guidance Tool' and 'Postoperative Pain Management Instructions' educational materials have been concurrently implemented in the general surgery specialty ward and colorectal surgery specialty ward.

