Istanbul2024

Health for People and Planet

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40th International Conference

24 - 27 September

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ISQua International Society for Quality in Health Care

REPUBLIC OF TÜRKİYE MINISTRY OF HEALTH

TÜSEB TÜSKA TÜRKİYE HEALTH CARE QUALITY AND ACCREDITATION INSTITUTE

A Comprehensive Solution for Better Patient Safety: TMUH Surgical Complication Classification Template and Automated Surgical Complication Dashboard

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FINAL ID: P055

INTRODUCTION

Surgical complications are crucial for hospital management, reflecting patient safety and care quality. They impact treatment effectiveness, recovery, and can lead to death. Thus, a dependable classification template for self-reporting and an automated dashboard for analysis can enhance medical quality by improving completeness, consistency, and insight into inpatient surgical complications.

AIM

This research aims to establish a TMUH Surgical Complication Classification Template and an Automated Surgical Complication Dashboard that are suitable for our hospitals and can be referred to by clinical departments at any time.

METHOD

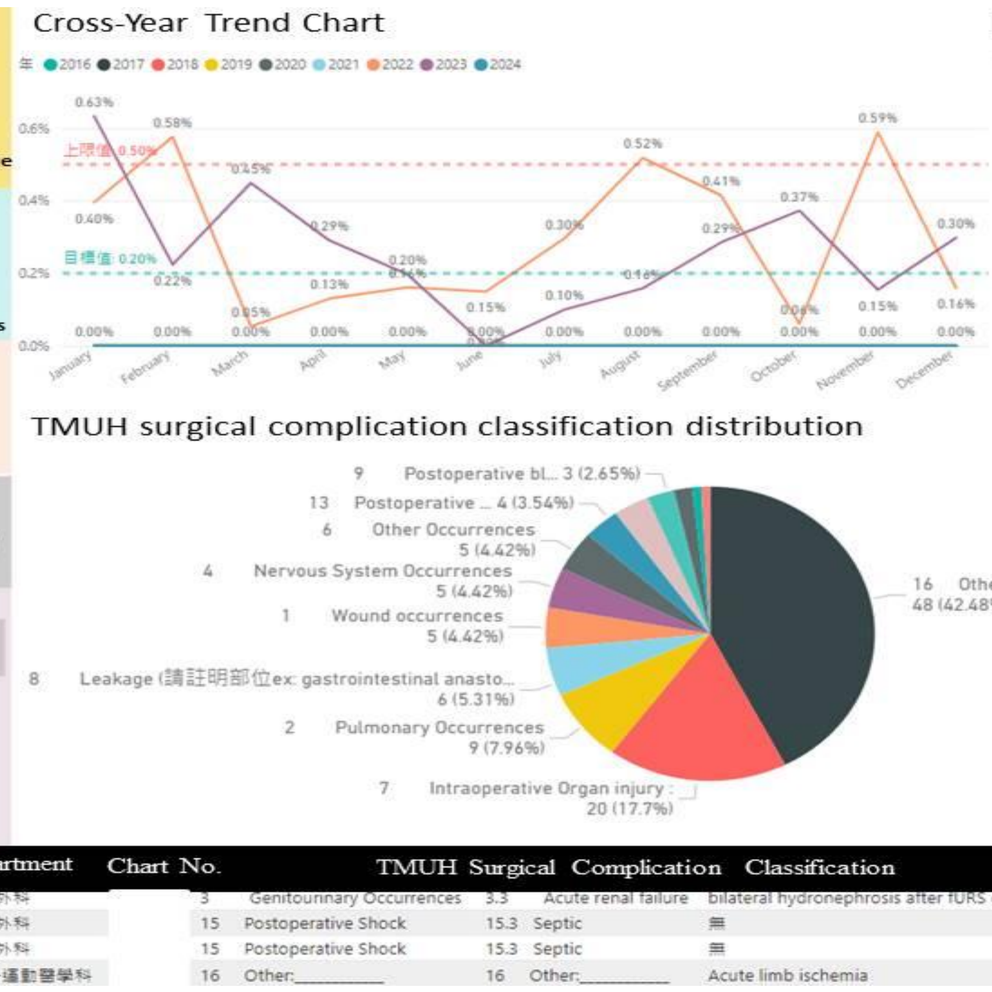
1. The TMUH Surgical Complication Classification integrates NSQIP and TMUH's 5-year data into 15 categories with 56 items. Developed and tested by two medical consultants, it gathered input from clinicians through WalkRounds. Starting January 2022, it's integrated into the clinical department's monthly report for surgical complications.
2. The Automated Surgical Complication Dashboard provides cross-year analysis, departmental distribution, and real-time detailed case information. It supports departmental discussions, improving reporting completeness and surgery quality, and enhancing patient safety.

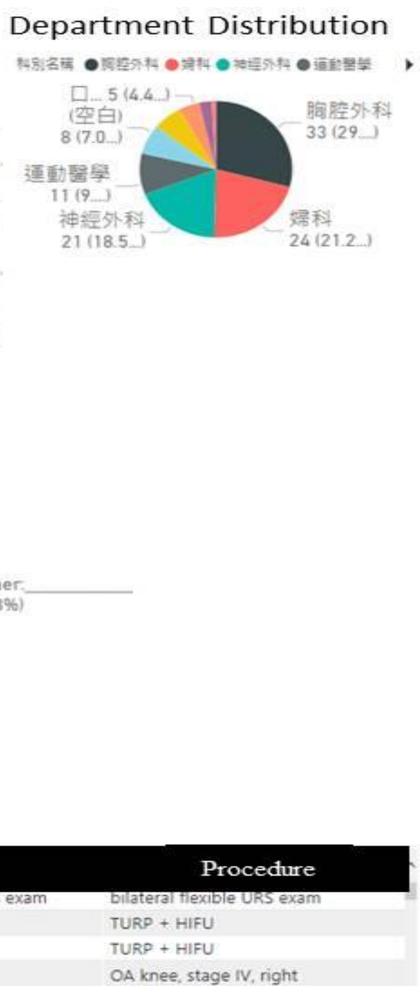
RESULTS

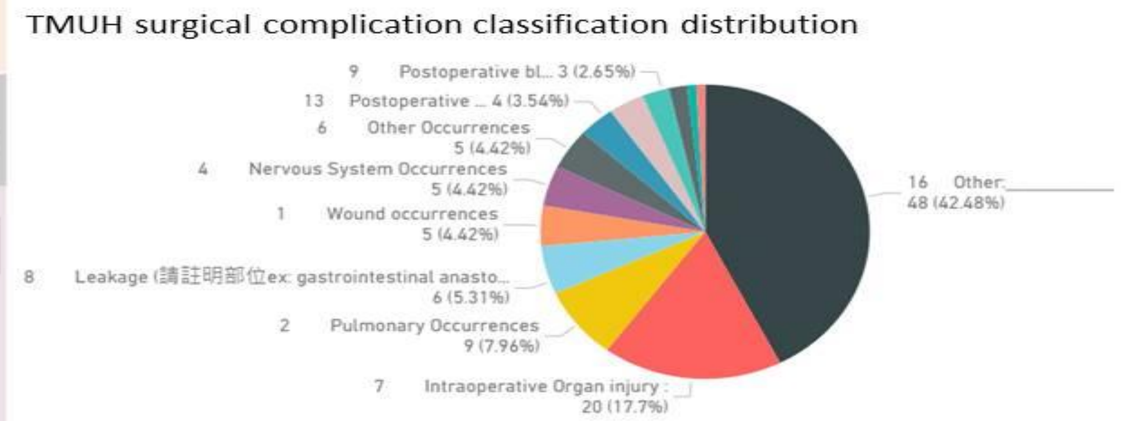
The results indicate that the use of TMUH Surgical Complication Classification in our hospital led to an increase in the incidence of surgical complications, from 0.37% in 2021 to 0.44% in 2022. At the same time, post-operation occurrences judged by sampling and reviewing medical records according to NSQIP rules decreased from 8.38% to 7.44%. This suggests that the completeness of surgical complication reporting has improved.

In 2023: surgical complications at 0.25%, post-operation occurrences at 5.97%. However, the post-operation occurrence rate remains much higher than that of surgical complications, which requires further investigation in the future.

In addition, according to the TMUH surgical complication classification between 2022 and 2023, other complications accounted for up to 42.48%, followed by intraoperative organ injury, which accounted for 13.27% (75% found during surgery and 20% found after surgery), and Pulmonary Occurrence, which accounted for 8.77% (with Pneumonia accounting for 55.56%)







Procedure date	Department	Chart No.	TMUH Surgical Complication		Classification	Procedure
Friday, December 01, 2023	泌尿外科	3	Genitourinary Occurrences	3.3 Acute renal failure	bilateral hydronephrosis after fURS exam	bilateral flexible URS exam
Friday, December 01, 2023	泌尿外科	15	Postoperative Shock	15.3 Septic	無	TURP + HIFU
Friday, December 01, 2023	泌尿外科	15	Postoperative Shock	15.3 Septic	無	TURP + HIFU
Friday, December 01, 2023	骨科-運動醫學科	16	Other:_____	16 Other:_____	Acute limb ischemia	OA knee, stage IV, right

CONCLUSIONS

Establishing a surgical complication classification template will enhance reporting completeness. We'll use indicators like NSQIP for case-by-case comparisons. Automated comparisons will focus on unplanned return cases. Power BI will capture intraoperative injuries needing repair. Apart from confirming whether there are unreported complications, this process helps department directors promptly address issues and improve surgery quality and patient safety by understanding the occurrence of intraoperative injuries and formulating preventive measures.

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