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Using patient record reviews to validate ICD-10 codes to identify in-hospital complications; a prospective trial of the Patients' Safety Checklist (PASC) in surgery

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Introduction

Using the International Classification of Disease, 10th version (ICD-10) codes to identify in-hospital complications overestimates complications if used as extracted directly from electronic patient records (EPR) (1). Precise estimates of complications emerging in-hospital are important to pinpoint preventive patient safety processes. A description on how to validate in-hospital complications using ICD-10 codes is lacking.

Aim

This study aims to validate in-hospital complications through review of EPR/ patients' medical records and ICD-10 codes.

Method

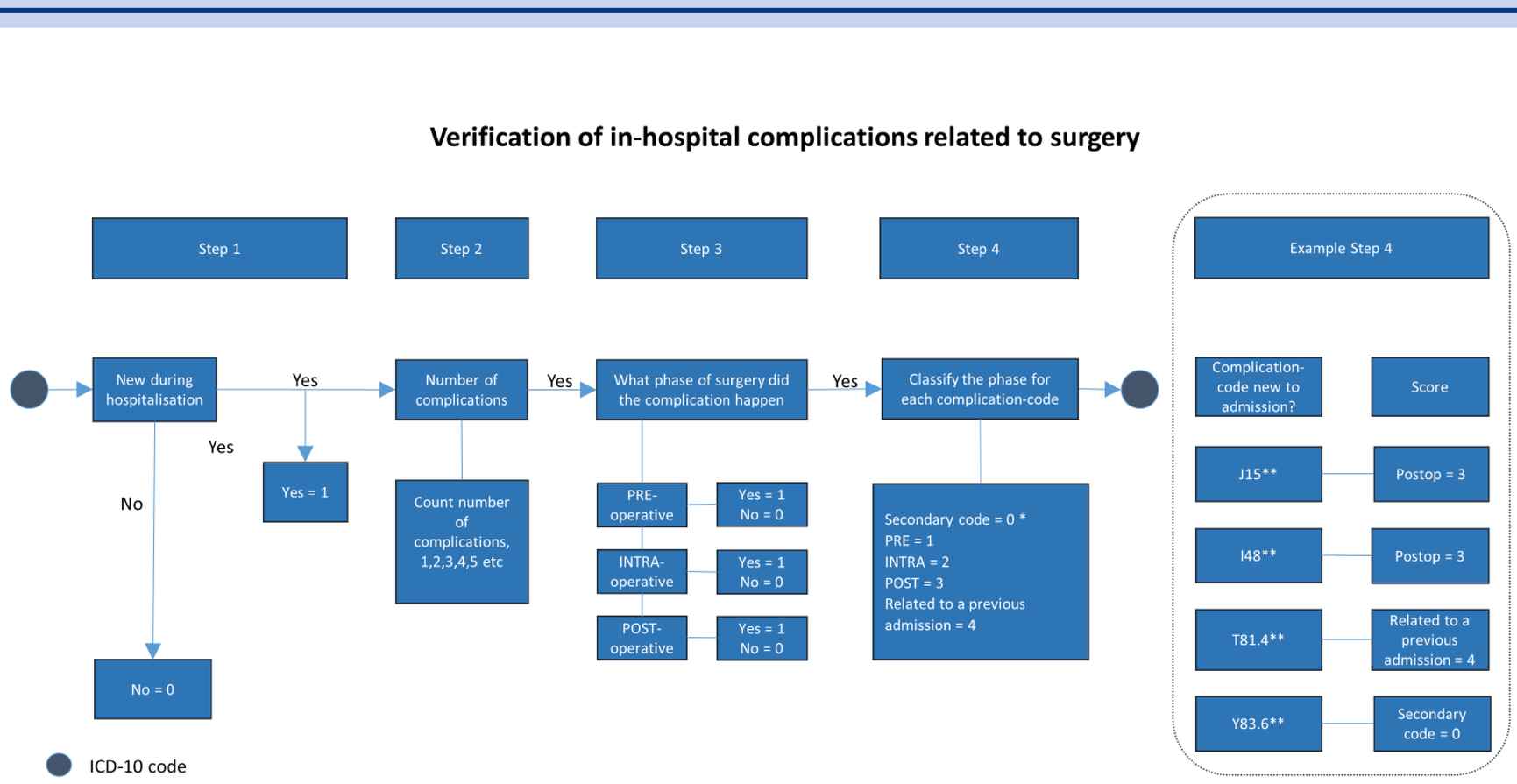

Figure 1. Digital extraction of ICD-10 complication codes identifies EPRs with one or more codes to consider per hospitalisation. Adult elective surgical patients from three Norwegian hospitals comprised the study participants in a stepped wedge randomised controlled trial designed study. Manual record reviews involved four steps to verify if documented complications emerged in-hospital:

1) Emerged in-hospital, 2) How many, 3) Pre-/Intra-/Post-operative phase, 4) Classification of each code.

Results

Data were collected between November 2021 and February 2024. Approximately 8,559 EPRs will be reviewed to verify ICD-10 complications codes as complications emerging from their hospital stays. Data is currently being investigated and quality checked. Final results are expected within 2024.

Conclusion

Preliminary findings suggest that valid in-hospital complication rates may be obtained through manual review of physician registered ICD-10 codes.

1) Storesund et al. Accuracy of surgical complication rate estimation using ICD-10 codes. Br J Surg. 2019 Feb;106(3):236-244.

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