

ADVERSE EVENTS DETECTION IN ACUTE CARE HOSPITAL SETTINGS WITH A TRIGGER TOOL APPROACH: A SYSTEMATIC REVIEW

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BACKGROUND

GTT based researches shows, between 27% and 33% of hospitalized patients are affected by AEs with harm (1,2) leading to longer length of stay, longer recovery times and higher costs (2).

In 2006, the Institute of Healthcare Improvement (IHI) developed the Global Trigger Tool (GTT) to determine and monitor patient harm in a range of clinical settings. Compared with other methods such as patient safety indicators derived from discharge data, trigger tools are up to ten times more sensitive (1). Since its implementation, many studies were conducted with the GTT and modified versions of the GTT. However, studies using the original GTT and its modifications vary widely in terms of the detected AEs rates and patients harm in acute care hospital settings.

OBJECTIVES

The aim of this systematic review is to explore variations in adverse events detection rates using the trigger tool methodology in acute care hospital settings.

METHODS

Adopted from the Cochrane Handbook for Diagnostic Test Accuracy Reviews a systematic review was conducted. Pubmed, Embase, Cinahl and Cochrane databases were searched (n=2,052). In a first screening two reviewers independently screened titles and abstracts for relevance (n=436). In a second step they screened all papers for inclusion and exclusion criteria (n=46). In a third step based on the full text 40 studies were finally included. These were extracted and quality assessed with a assessment tool developed for this review.

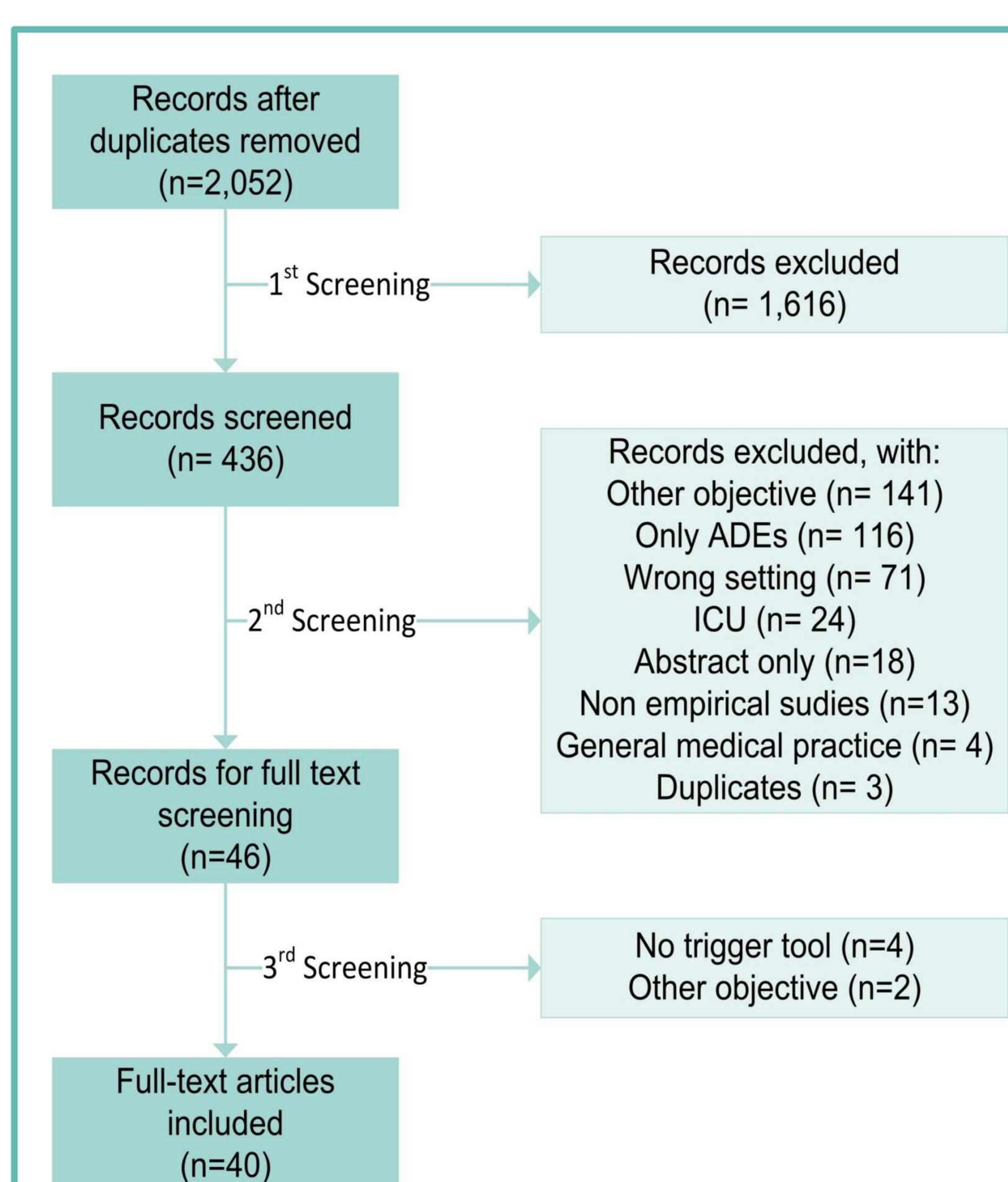
Adverse events (AEs)

«Any noxious or unintended event occurring in association with medical care.» (3)

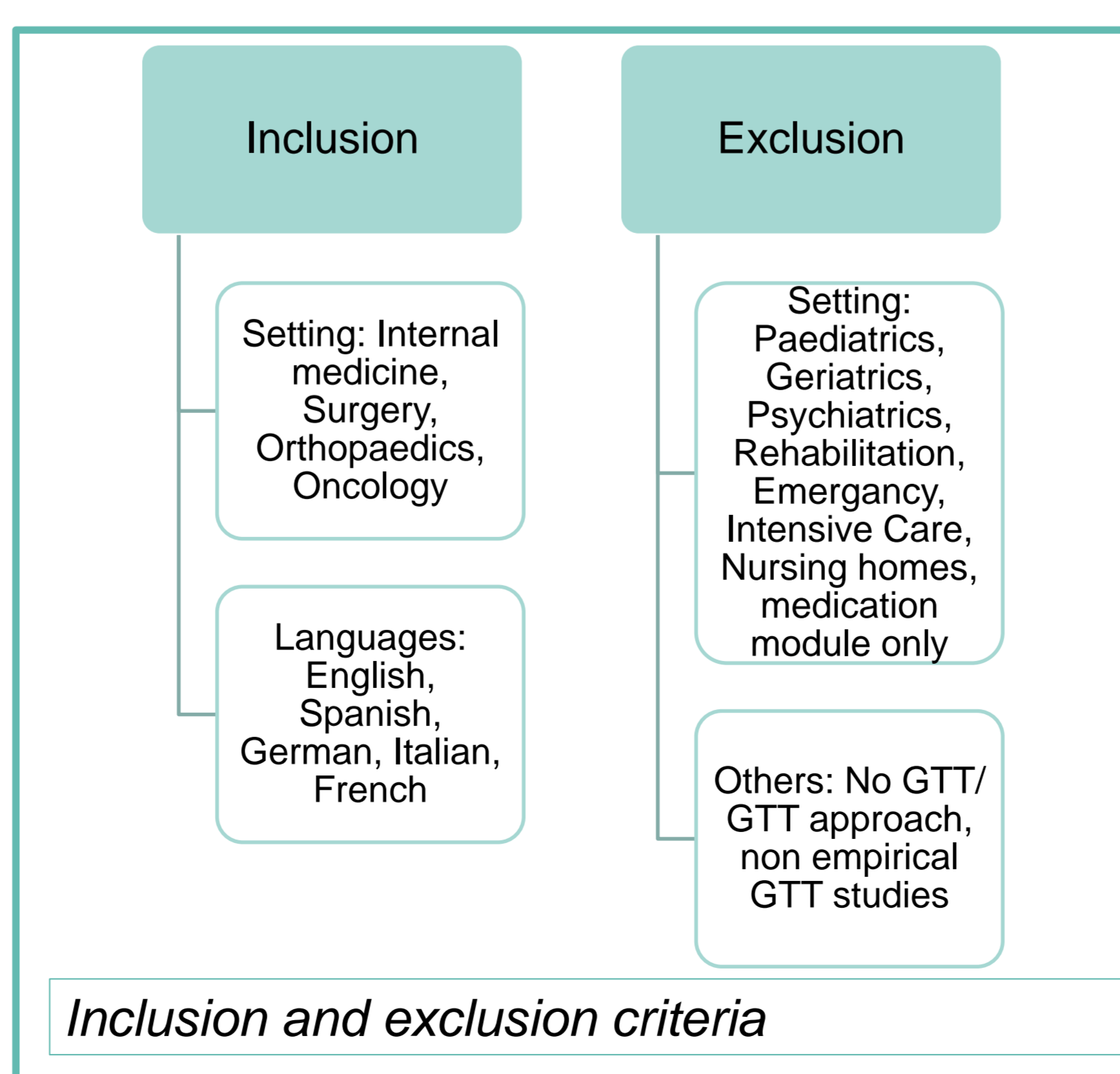
Harm

«Unintended physical injury resulting from or contributed to by medical care that requires additional monitoring, treatment or hospitalization, or that results in death.» (3)

Definition of adverse events and harm



Flowchart of the search and screening process



PRELIMINARY RESULTS

The project (extraction, quality assessment, statistical analyses) is ongoing, here we summarize the results analyzed so far. We included a total of 40 studies of adult in-patients from acute care hospitals settings; intensive care units, paediatric or outpatient care were excluded. The sample sizes varied between n=50 and n=40,851.

The studies were published between 2006 and 2016 and conducted in 13 different countries: USA: 12; Denmark: 6; Sweden: 5; Spain: 4; Norway: 3; Netherland: 2; Canada: 1; Thailand: 1; South Korea: 1; Turkey: 1; Israel: 1; Ireland: 1; India: 1 and multi national: 1.

First analyses show large variation between the studies. Between **8% and 90.1%** (mean: 47.8%) **positive triggers** were detected in the hospitalized patients, and between **7.2% and 63%** (mean: 26.6%) of patients were **affected by at least one AE**. Between **12.5% and 83%** (mean: 59.4%) of all AEs were characterized as **preventable**.

We have analysed one protocol-defined source or variation so far. **Length of hospital stay** in patients with AEs is higher (mean: 10.1 days) compared to patients without AEs (mean: 4.7 days).

CONCLUSION & NEXT STEPS

This systematic review explored variations in AEs detection rates using GTT based trigger tool methodology. Understanding differences in AEs rates is expected to improve future assessment of AE occurrence and may improve downstream consequences such as patient safety during hospitalizations. Next steps: completion of the study extraction and quality assessment with full tabulation of all sources of variation considered.

References

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2. Lee Adler, DO et al. (2015). Impact of Inpatient Harm on Hospital Finances and Patient Clinical Outcomes.
3. Griffin FA & Resar RK (2009): IHI Global Trigger Tool for measuring adverse events. Institute of Healthcare Improvement Innovation Series White Paper.