COMPARING RATES OF ADVERSE EVENTS DETECTED IN INCIDENT REPORTING AND THE GLOBAL TRIGGER TOOL: A SYSTEMATIC REVIEW

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Headline: Incident reporting systems detect less than 10% of patient safety incidents compared to the Global Trigger Tool

What is the problem?:

- Many hospitals continue to use incident reporting systems as their primary patient safety data source. The information incident reporting systems collect on the frequency of harm to patients (adverse events) is generally of poor quality, and some incident types (e.g., diagnostic errors) are under-reported. Other methods of collecting patient safety information using medical record review, such as the Global Trigger Tool, have been developed.
- The aim of this study was to undertake a systematic review to empirically quantify the gap between the percentage of adverse events detected using the Global Trigger Tool to those that are also detected via incident reporting systems.

Methods: The review was conducted in adherence to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement – see Figure 1. Studies published in English, which collected adverse event data using the Global Trigger Tool and incident reporting systems, were included.

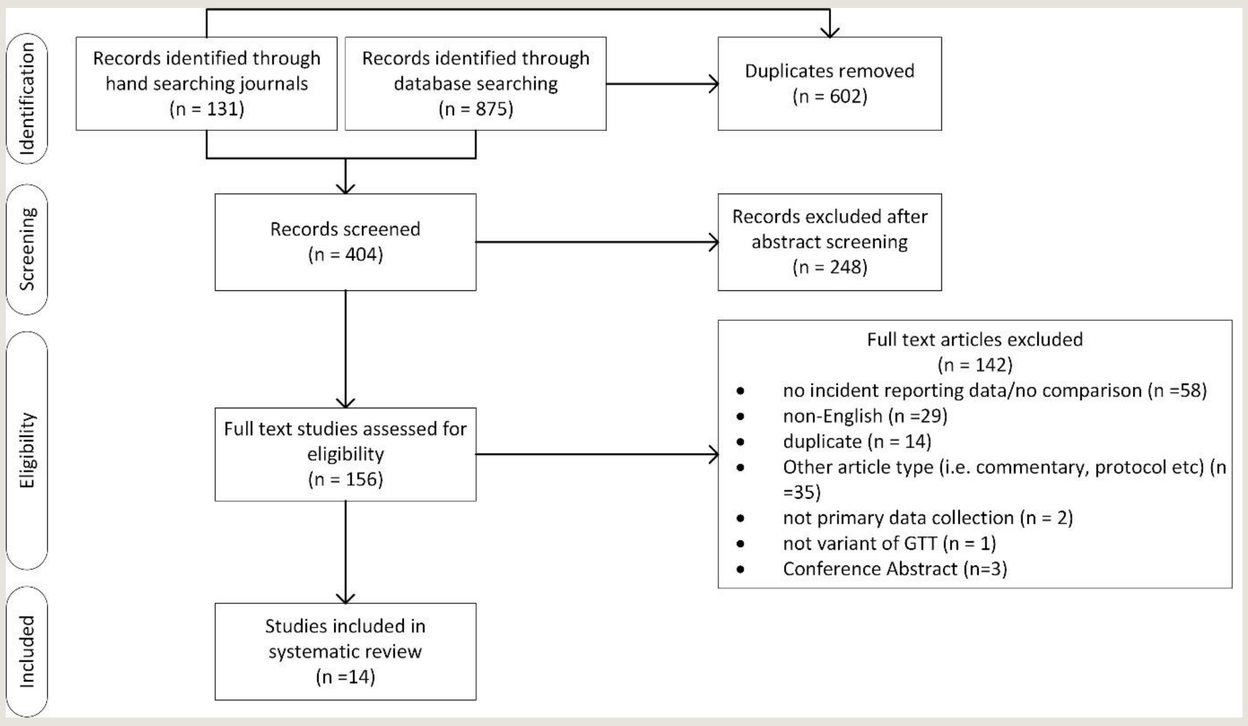

Figure 1: PRISMA diagram

Results:

- 14 studies met the inclusion criteria.
- All studies were undertaken in hospitals and were published between 2006 and 2022.
- The studies were conducted in six countries, mainly the United States (nine studies).
- Studies reviewed 22,589 medical records using the global trigger tool across 107 institutions finding 7,166 adverse events.
- The percentage of adverse events detected using the Global Trigger Tool that were also detected in corresponding incident reporting systems ranged from 0 to 37.4% with an average of 7.0% (SD 9.1; median 3.9, IQR 5.2). See Figure 2 below.
- **12/14 studies found less than 10% of the adverse events detected using the global trigger tool were also found in corresponding incident reporting systems.**

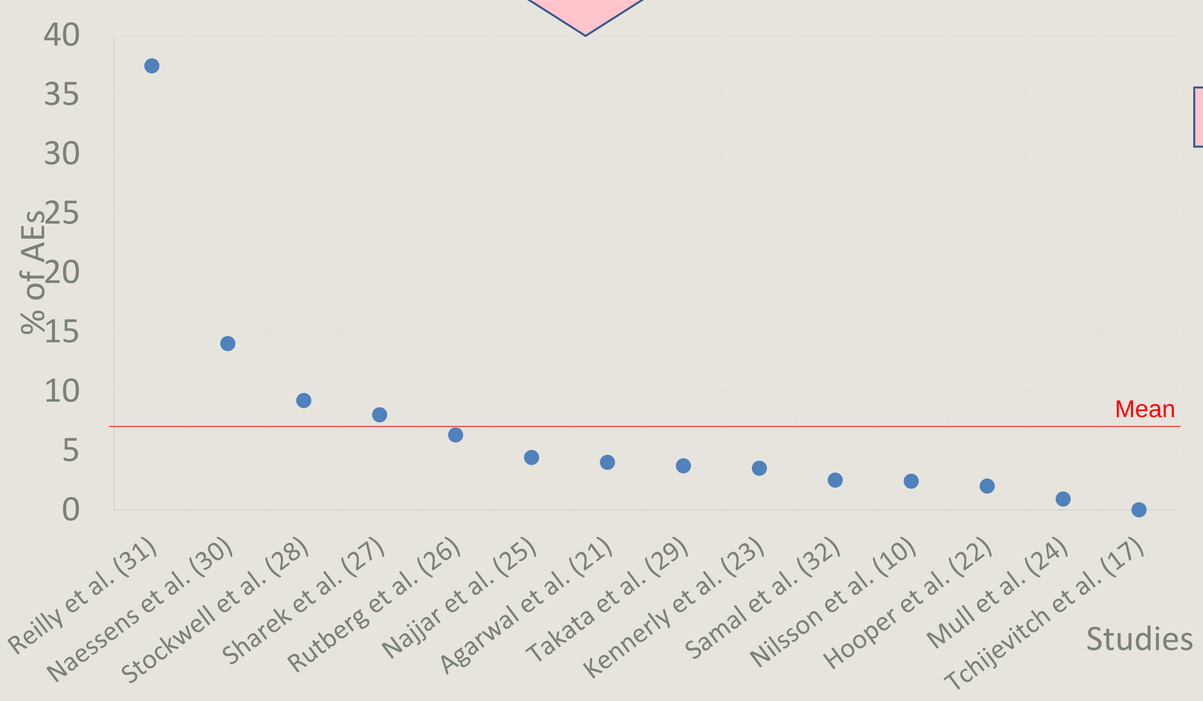

Figure 2: % of adverse events detected using the global trigger tool that were also found in corresponding incident reporting system by research study.

What should organisations do?:

- The >10-fold gap between the detection rates of the Global Trigger Tool and incident reporting systems is strong evidence that the rate of adverse events collected in incident reporting systems in hospitals should not be used to measure or as a proxy for the level of safety of a hospital.
- Incident reporting systems should be recognised for their strengths which are to detect rare, serious and new incident types, and to enable analysis of contributing and contextual factors to develop preventive and corrective strategies.
- Health systems should use multiple patient safety data sources to prioritise interventions and promote a cycle of action and improvement based on data rather than merely just collecting and analysing information.

QR code links to the study published in the ISQua Journal:

Table 1: Strengths and weaknesses of the Global Trigger tool and Incident Reporting (adapted from Hibbert et al (2023) and Shojania (2010))

	Global Trigger Tool	Incident reporting
Strengths	• Compare rates over time of specific incident types • Use of automated triggers can reduce time to detect incidents	• Can detect rare and new incident types • Can contribute to analysis of contributing and contextual factors to develop preventive and corrective strategies
Weaknesses	• Time-consuming • Contributing factors for documented events often unclear	• Unreliable for comparing rates over time or between departments • Some serious incident types not frequently reported e.g., diagnostic incidents • Frequent reporting of events not suited to individual analysis e.g., falls • Staff may feel demoralised if they do not perceive meaningful improvements resulting from incidents they have reported

References

1. Hibbert PD, Molloy CJ, Schultz TJ, Carson-Stevens A, Braithwaite J. Comparing rates of adverse events detected in incident reporting and the Global Trigger Tool: a systematic review. International Journal for Quality in Health Care. 2023;35(3).
2. Shojania KG. The elephant of patient safety: what you see depends on how you look. Jt Comm J Qual Patient Saf. 2010;36(9):399-401.