

Trigger tools used for multimorbid medical hospitalized patients: a literature review

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Introduction

Patient safety is an essential domain of the quality improvement. It is important to monitor the incidence and characteristics of adverse events (AEs) to guide interventions for reducing AEs and monitor the effect of interventions.

Trigger tool is a 2-part chart review process, where medical charts are selected by clues (triggers) and then reviewed to determine whether an AE has happened. There is currently no trigger tool developed to determine AEs in multimorbid medical hospitalized patients.

The objective:

- find triggers used in different trigger tools intended to be used in medical hospitalized patients
- describe the current evidence in researching adverse events using trigger tools

Methods

A literature search (January 2022) in PubMed and SCOPUS libraries, search term:

((translation)) OR (translated)) OR (validated)) OR (validity)) OR (modified)) OR (modifi*)) OR (transl*))) OR (validation studies as topic[MeSH Terms])) AND ((((((trigger tool)) OR (global trigger tool)) OR (Quality Indicators, Health Care[MeSH Terms]))

Inclusion criteria:

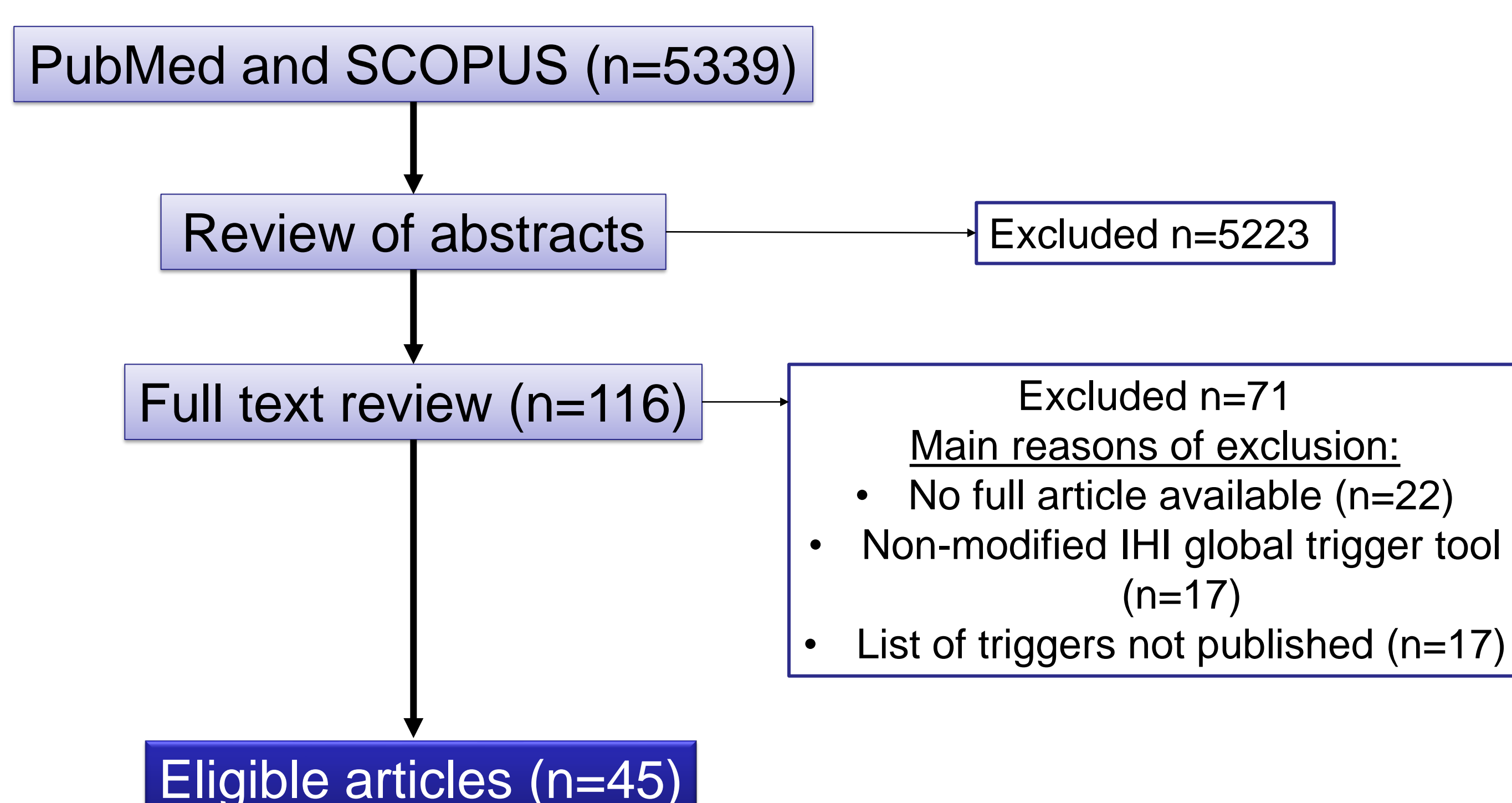
- developed or validated trigger tools or used trigger tools
- adults in inpatient settings
- English language
- had list of triggers included in the paper.

Exclusion criteria:

- used original non-modified global trigger tool
- list of triggers was not published
- full article was not available.
- psychiatric, emergency medicine, ambulatory, pediatric, perinatal and surgical trigger tools
 - If these populations were a part of trigger tools intended for larger population, we included the trigger tool.

Results

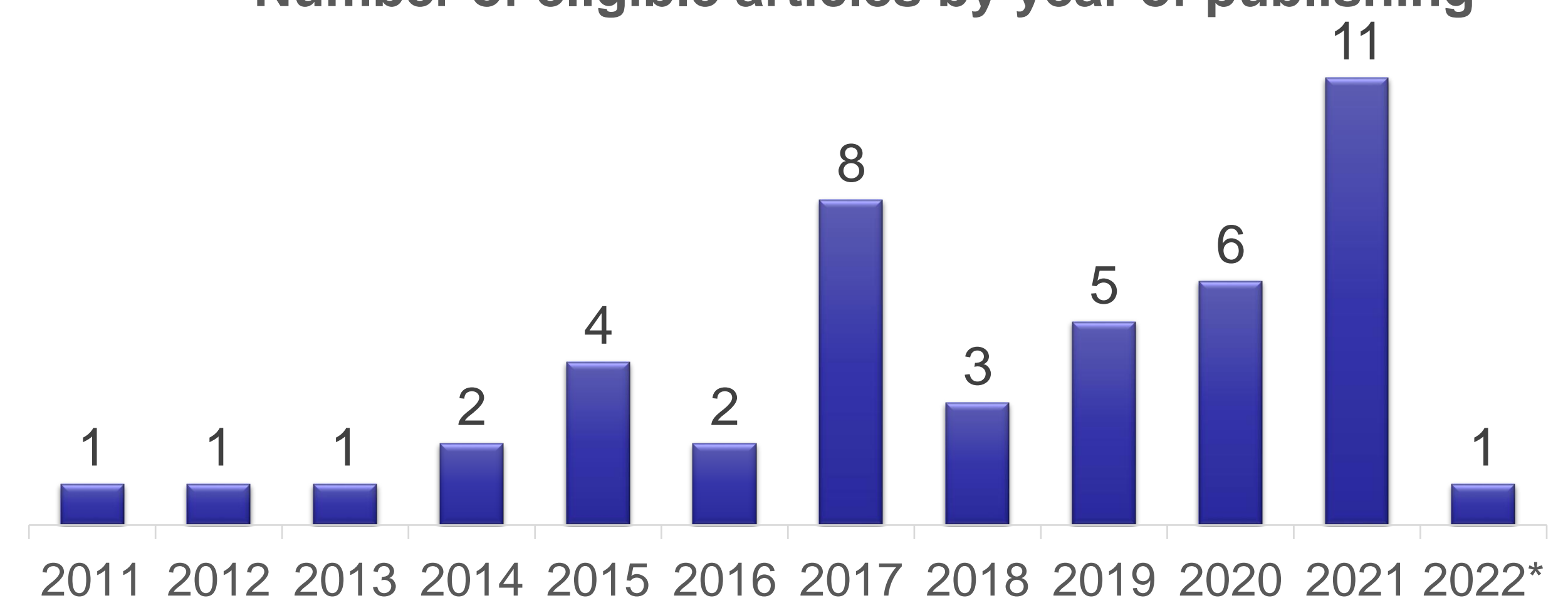
Review was done by one author.



Results

We found 45 eligible articles, published from 2011-2022 January; most of the articles were published in 2021 (24%), 2017 (18%) and 2020 (13%).

Number of eligible articles by year of publishing



Trigger tools were intended for different AEs and settings:

- 21 (47%) focused on adverse drug events
- 6 (13%) were oncological trigger tools
- 3 (7%) were intensive unit trigger tools.

One instrument was used to determine adverse medical device events, one was used to determine AEs in a population of inpatient deaths.

Most of the tools (n=32, 71%) were used only on adults, of which 9 focused on geriatric population.

For search of triggers, 35 studies (78%) used manual approach, 4 (9%) used automated search and 3 (7%) used mixed approaches. The number of triggers used by different tools varied, (2-102, median of 22 triggers). The total of triggers (with duplicate triggers) collected from studies was 1442.

Example of the trigger tool found by this review: Hébert et al¹ developed a trigger tool to find adverse drug events on oncological patients. The search for triggers (n=22) was manual and the charts selected were of patients who had been hospitalized for more than 48 hours.

Conclusions

This trigger tool describes the current state of the development of different inpatient medical trigger tools. Specific trigger tools have been developed mainly for adverse drug events, oncological patients and intensive care unit patients. There were no general trigger tools intended to be used on medical adult multimorbid patients. There is little evidence about automation of searching triggers and applying trigger tools prospectively.

Strengths: This is a first review of trigger tools since 2016, and since then there has been published substantially more evidence.

Limitations: As review had an aim to collect triggers from literature, this focused on studies that had published the triggers used in trigger tools, other papers were excluded from this study. The review of papers was done by one author.

FUNDING: PATSAFE project, funded by the European Union's Horizon 2020, Coordination and Support Action programme, under grant agreement No 857359

References:

1. Hébert G, Netzer F, Ferrua M, Ducreux M, Lemare F, Minvielle E. Evaluating iatrogenic prescribing: development of an oncology-focused trigger tool. *Eur J Cancer Oxf Engl* 1990. 2015 Feb;51(3):427–35.