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Review

Effect of scribes on patient throughput, revenue, and patient and provider satisfaction: a systematic review and meta-analysis☆,☆☆,★,★★

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ABSTRACT

Background: Scribes offer a potential solution to the clerical burden and time constraints felt by health care providers.
Objectives: This is a systematic review and meta-analysis to evaluate scribe effect on patient throughput, revenue, and patient and provider satisfaction.
Methods: Six electronic databases were systematically searched from inception until May 2015. We included studies where clinicians used a scribe. We collected throughput metrics, billing data, and patient/provider satisfaction data. Meta-analyses were conducted using a random effects model and mean differences (MDs) with 95% confidence intervals (CIs) with adherence to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis statement.
Results: From a total of 210 titles, 17 studies were eligible and included. Qualitative analysis suggests improvement in provider/patient satisfaction. Meta-analysis on throughput data was derived from 3 to 5 studies depending on the metric; meta-analysis revealed no impact of scribes on length of stay (346 minutes for scribes, 344 minutes for nonscribed; MD −1.6 minutes, 95% CI −22.3 to 19.2 minutes) or provider-to-disposition time (235 minutes for scribes, 216 for nonscribed; MD −18.8 minutes, 95% CI −22.3 to 19.2) with an increase in patients seen per hour (0.17 more patient per hour; 95% CI 0.02-32). Two studies reported relative value units, which increased 0.21 (95% CI 0-0.42) per patient with scribe use.
Conclusion: We found no difference in length of stay or time to disposition with a small increase in the number of patients per hour seen when using scribes. Potential benefits include revenue and patient/provider satisfaction.

1. Introduction

1.1. Background

Burnout is more common in physicians than the rest of the US labor force, with emergency medicine, family medicine, and general internal medicine physicians having the highest rates of burnout among the specialties [1]. Physicians work a median of 10 hours more per week than population controls and note significantly more difficulty with work-life balance when compared with population controls (40% vs 23%, respectively) [2]. Increasing government rules and regulations add to time- and resource-limited health care providers.

Traditionally, physicians document patient encounters; however, some have suggested that the rollout of the electronic health record (EHR) has decreased productivity, at least in the short term [3]. Providers now may only document brief notes on patients at the time of the encounter, leaving the majority of documentation to the end of the day, allowing for an increased potential for error in medical records [4]. Providers describe significant challenges related to EHR use: difficult to use, time consuming, and an inefficient means of documentation, to name a few [5-7]. Scribes offer a potential solution to decrease the clerical burden felt by health care providers. Initially used in emergency departments (EDs), scribe use throughout health care is becoming more common. Several articles published over the last 5 years anecdotally praise the use of scribes on pediatric wards, inpatient services, and family medicine clinics [8-11].

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There is no clear definition of the scope of practice of scribes, and duties vary among clinical sites. In general, scribes are nonlicensed health care team members that document patient history and physical examination contemporaneously with the encounter. Scribes are frequently college students or recent college graduates planning on a career in the health care field. They keep track of laboratory findings and radiological studies and record other pertinent information to improve physician productivity and patient care [4]. They do not act independently but rather assist with documentation, retrieve test results, and support workflow [12].

Currently, there is no state agency or federal government monitoring or standardizing this industry. Scribes are thought to be working in 44 states and more than a thousand cities; however, the true number of scribes working in the health care system is unknown [13].

Although some editorials express concern with the use of scribes as a workaround to the inefficiencies of EHRs, the first published articles predate the EHR boom by decades and anecdotally report positive experiences [13-15]. Similar advantages were described then as well: an accurate medical record that affords physicians more time for direct patient care [15].

1.2. Goals of this investigation

Peer-reviewed literature discussing the advantages, disadvantages, and impact of scribes in a standardized way is limited. Although the field is growing exponentially, the true influence on patient throughput and documentation, and the impact on provider satisfaction are not clearly defined. Furthermore, understanding the best utilization, in regard to health care setting, of scribes is unknown. For these reasons, the purpose of this systematic review and meta-analysis is to study the effects of scribes on patient throughput, billing, and patient and provider satisfaction.

2. Methods

This systematic review and meta-analysis is reported in accordance to the recommendations from the Preferred Reporting Items for Systematic Reviews and Meta-Analysis statement [16]. The review protocol was developed in May 2015 and was followed during the conduct of the review.

2.1. Eligibility criteria

2.1.1. Types of studies

We included original research studies, including randomized controlled trials and observational studies that reported the use of medical scribes. All settings are reported in this article, although the settings vary greatly in practice given the pervasive use of scribes across health care. We did not exclude any studies based on language or year of publication.

2.1.2. Types of patients and procedures

We included patients of all ages seen in all clinical settings including ED, outpatient, and inpatient areas. We excluded studies that did not discuss the effect of medical scribes on physician productivity (patients per hour, length of stay [LOS], etc), impact on billing or patient, and provider satisfaction (eg, narrative descriptions of an existing medical scribe program, commentaries).

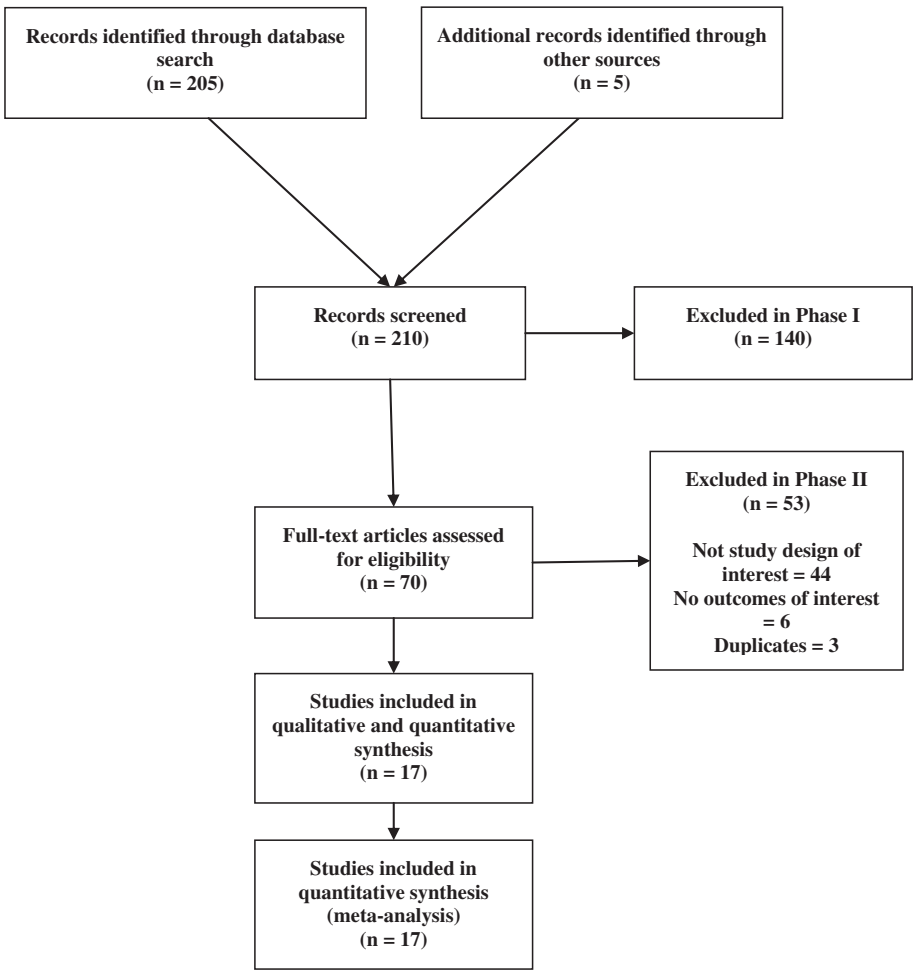

Fig. 1. The process of study selection.