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The Evidence Base for Scribes and the Disruptions of COVID-19



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Medical scribes have worked in emergency medicine for approximately 30 years. Initially, they worked with paper medical records, but now the majority assist with data entry tasks electronically. There has been a major expansion of scribe programs in the United States both in terms of employment locations (now moving outside the emergency department (ED)), and numbers, despite attempts to streamline documentation in electronic health records so that clerical support is no longer required.

Scribes have been employed in hospitals, primary care, specialist offices, and other community settings. Some scribe programs are developed and administered in house by health organizations; others are run by commercial companies. There is also a hybrid model available in which scribes train externally and are hired directly by physicians or facilities. With the increase in scribe use, there has been increasing governance support, including guidance on the safer use of scribes from The Joint Commission¹ and the development of certification and training businesses, such as the American College of Medical Scribe Specialists.² Although scribes are largely employed in the United States, other jurisdictions such as Canada and Australia have also initiated scribe programs.

SUMMARY OF EVIDENCE

Despite the introduction of a new health-worker role at a considerable cost and the conflicting business interests of scribe company owners, there has been relatively little independent research conducted on the role of the medical scribe until recently. The majority of articles have been published between 2010 and 2020, and 4 of 5 randomized trials were published between 2016 and 2019.³⁻⁷ The updated systematic review by Gottlieb et al⁸ presents recent data from greater than half a million patient encounters and includes 39 studies from EDs, primary care, and specialty clinics, originating from 3 countries.

To justify a scribe program, the role has to make economic sense. Scribes can't bill for their services and so income for scribes needs to be realized elsewhere. This is usually achieved in 3 ways: improving flow (assuming new patients are always waiting), improving physician productivity per unit of time, and increasing per-patient revenue. These improvements are balanced against scribe costs, including equipment, recruitment, training, administration, and labor. Gottlieb et al found that patient flow is unchanged when scribes are present. Physician productivity increases a little with scribes, from 1.95 to 2.25 patients per hour (in both ED and non-ED settings). Per-patient income also increases a little in the United States, from 2.39 relative value units per patient without a scribe to 2.53 with one. In some settings, these gains will be enough to support a scribe program. Despite the large number of patients in the review, the level of evidence supporting scribes remains of very low quality according to Grading of Recommendations Assessment, Development and Evaluation criteria.

Patient tolerance of scribes is at least neutral, with a tendency toward a positive experience for scribed consultations. Patients don't seem to withhold personal health information while a scribe is present. Physicians mainly enjoy working with scribes, with the majority of physicians supporting their use. In contrast, a few physicians prefer to work without a scribe.

GAPS IN EVIDENCE

Although most studies report financial benefits from using scribes, program influence is variable. Some sites don't find a benefit and others report large gains, which demonstrates the importance of randomized multicenter studies and of monitoring scribe program performance at individual sites.^{2,9} Furthermore, understanding of why some sites do not find benefit is limited because few organizations closing scribe programs publish their experience. Articles evaluating scribes rarely undertake complete cost analyses. Labor costs are usually reported;

however, the costs of recruiting, training, and managing scribes are usually omitted. Calculations accounting for the lag in physician productivity until a scribe gains adequate experience¹⁰ are almost never provided.

Deficits in scribe research include quality and safety. There are 2 articles that evaluate the quality of scribe notes; however, the lack of a reliable research tool for documentation quality makes these evaluations hard to interpret.^{11,12} There is only one study that describes patient safety incidents related to scribes.⁷ The safety data relied on self-reporting by scribes and physicians, and didn't provide a systematic evaluation of harms related to scribes. A well-planned, rigorous, safety study with sufficient numbers of patients, scribes, physicians, and locations is needed.

Despite many statements discussing how scribes reduce physician burnout, this remains unproven. Although it seems intuitive to most individuals that electronic medical records contribute to burnout, to our knowledge there haven't been any studies that critically examine the relationship between scribe presence and physician burnout prevalence or severity.

Many physicians work a considerable amount of unpaid overtime. Without a scribe, once a shift has ended, physicians often complete charts and this time isn't usually captured in administrative databases. Many studies note that physicians go home soon after completion of their shift when working with a scribe but can't report the magnitude of the effect. One study illustrated decreased documentation time both during and after shift with scribes, but was limited by size and power.¹³ Calculating the true productivity of physicians with scribes is inaccurate for this reason, biasing many studies against scribe programs.

Medical scribes are often people who wish to become health care professionals. There are very few studies reporting the experiences of scribes and whether the role provides them with education or career benefits that travel with them into their future careers. A longitudinal study would be welcomed.

EFFECT OF COVID-19 ON SCRIBE PROGRAMS

2020 has provided significant challenges for emergency medicine and for all other medical settings as well. There have been varied effects on patient volumes across practices, from 25% to 50% reductions¹⁴⁻¹⁶ to overwhelming volumes of patients, disaster conditions, and personal protective equipment shortages. All settings have experienced unease about the transmission of COVID-19 to health care workers, particularly in emergency

medicine,¹⁷ and so scribes and other support personnel have been removed from many EDs.

Demand for scribes and the role and location of scribes have also changed in many facilities, with many scribes unemployed or redeployed. Some scribes are still working in their original position at the bedside; others assist with transcribing telehealth evaluations and work remotely. There is a lack of published information on these role changes to date, and the long-term effect on scribe responsibilities has yet to be determined.

CONCLUSIONS

In summary, there is now some limited economic evidence for using scribes, with small improvements seen in physician productivity and increased per-patient revenue in the United States, but not patient flow. The improvements must be compared with true costs of the scribe program. Scribes are well tolerated by patients, and most physicians have a better experience when allocated a scribe. Surprisingly, there still remains limited peer-reviewed literature supporting scribes in health care despite rapid uptake of the role; the effect of the scribe role must be critically examined to inform health administrators and physicians who are considering employing scribes and developing scribe programs. There are too many gaps in our knowledge to fully endorse such a health care team member role.

The role of the scribe has been changed by the COVID-19 pandemic. Whereas literature to date has focused on scribes at the bedside, we suspect the scribe industry will evolve, with virtual options becoming standard. There is no research into the value of virtual scribes versus in-person ones; this will provide another interesting angle for future researchers to evaluate.

The elephant in the room remains the electronic medical record. Despite major advances in technology, clinical documentation remains enough of a burden that a significant number of clinicians are forced to outsource the task. Additional focus on understanding the challenges of efficient documentation is important. There should also be evaluations of electronic medical record software and its cost to the care team. If every provider loses productivity every shift because of struggles with electronic medical record inefficiencies, then these records are very expensive. We must understand why these systems demand the addition of workforce to mitigate clerical challenges and what improvements are needed from the electronic medical record software to retire the scribe profession.

Moving forward in improving physician productivity, there should be a critical and broader look at how and where to spend money to improve patient access to suitably

skilled providers in a safe way. Comparisons should be made between costs and patient safety regarding scribes versus added additional direct care clinical staff. Would new efficiencies be gained by the addition of another nurse or alternate provider instead of a scribe?

Ultimately, research should explore how best to spend health care dollars to improve patient access to skilled providers in a safe and timely fashion, including comparisons of various provider roles and explorations of how to make electronic medical records work better for the clinician end user.

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