

## Scribe impacts on US health care: Benefits may go beyond cost efficiency



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Recent increases in requirements for outcome-based reimbursement and changes in the *International Classification of Diseases, Tenth Revision* have caused physicians to spend an increased amount of time with documentation.<sup>1</sup> The rate of physician burnout, although decreased from recent years, is still significantly higher than that of the average population.<sup>2</sup> Preventing physician burnout is an integral factor in ensuring that all patients' medical needs are met. In this review, we will explore the role of medical scribes in decreasing documentation time and physician burnout while increasing patient satisfaction and charting quality and accuracy.<sup>3</sup> We will discuss the 4 subtypes of medical scribes—professional, medical team, student, and digital—and look further into the advantages and disadvantages of each. Although there are many studies on the benefits of medical scribes, it is important to continue to look for novel ways to improve both patient and provider outcomes. Future studies could provide further strategies to decrease miscommunication, errors in communication, and scribe turnover.

Physician burnout is a growing concern. As new challenges and responsibilities are added to physicians' workloads, it is important to find novel ways to prevent burnout, provide quality patient care, and give physicians tools to handle the increasing demand for productivity.<sup>1</sup> Although reported physician burnout rates have decreased and satisfaction has increased from 2014 to 2017, the values still remain significantly worse than for the average working population in the United States. Forty-four percent of physicians continue to have at least 1 manifestation of burnout.<sup>2</sup> The prevalence of burnout varies between specialties (Table 1). In addition, new demands and challenges are being placed on physicians, including the switch to *International Classification of Diseases, Tenth Revision*, which occurred in conjunction with the adoption of electronic health records,

creating changes for physician workflow. Providers are also facing additional requirements regarding the new outcome-based approach to reimbursement. These demands lead to physicians spending nearly 2 hours documenting for every 1 hour of direct clinical patient care.<sup>3</sup> Multiple approaches have been suggested to combat the increasing burnout, including medical scribes. Medical scribes are designed to relieve physicians of some of their care team clerical duties and provide them more time for patient interaction. Several studies have evaluated the efficacy of medical scribes in different clinical settings. This review will evaluate the current research on the impact of scribes on patient outcomes and physician workload.

The role of a medical scribe varies among clinics, but generally involves the scribe documenting the patient encounter or procedure in real time, researching past results and records, documenting laboratory and imaging results, and preparing discharge instructions. As defined by the Joint Commission, a documentation assistant or scribe may be an unlicensed, certified, or licensed person who provides documentation assistance to a physician or other licensed independent practitioner consistent with the roles and responsibilities defined in the job description, and within the scope of his or her certification or licensure. The Joint Commission reports the following minimum standard criteria for medical scribes: training in medical terminology, Health Insurance Portability and Accountability Act, billing, coding, and reimbursement principles, electronic medical records, and electronic order procedures.<sup>4</sup> As the demand for scribes has increased over the past few years, as has the diversity in their roles, now offering unique opportunities and additional clinical duties.

There is evidence that scribes have a positive impact that goes beyond efficiency and cost reduction. Sattler et al<sup>5</sup> completed a study on family medicine physicians' observations while working with scribes over the course of 1 year. It was found that physicians reported positive experiences with the addition of medical scribes in multiple categories, including "joy of practice," charting quality and accuracy, improved patient experience, and quality care for patients.

The benefit of scribes in various specialties has been analyzed in the past, with most studies indicating scribes having a positive impact in a clinical setting in regard to time spent with patients, quality of documentation, time charting, increased revenue, and joy of medicine. However, the studies are relatively small; therefore, it is important to continue evaluating the most effective ways to use and implement scribes to prevent physician burnout and improve patient outcomes. A study done by Gidwani et al<sup>6</sup> revealed that in a randomized controlled trial conducted in a family medicine clinic, scribes made a positive contribution in several categories including physician satisfaction with the clinic, increased time spent with patients, decreased time spent charting, chart quality, accuracy, and efficiency. Hess et al<sup>1</sup> found similar

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**TABLE I.** Medscape survey that included 15,069 physicians across 29 specialties from July 27 through October 16, 2018\*

| Highest                                 |              |
|---|--------------|
| Specialty                               | Burnout rate |
| Urology                                 | 54%          |
| Neurology                               | 53%          |
| Physical Medicine and Rehabilitation    | 52%          |
| Internal Medicine                       | 49%          |
| Emergency Medicine                      | 49%          |
| Family Medicine                         | 48%          |
| Lowest                                  |              |
| Specialty                               | Burnout rate |
| Public Health and Preventative Medicine | 28%          |
| Nephrology                              | 32%          |
| Pathology                               | 33%          |
| Ophthalmology                           | 34%          |
| Otolaryngology                          | 36%          |
| Plastic Surgery                         | 36%          |

\*Data from Medscape.

results at an academic emergency department where they found significant improvement in relative value units per hour. A similar study done at Mayo Clinic used time-driven activity-based costing methodology to evaluate the cost-benefit of having scribes in the emergency department. The results from this study indicated that the physician cost estimate per shift with and without a scribe was \$488 and \$644, respectively, due to decreased documentation time.<sup>7</sup>

There are 4 types of team documentation: professional scribes, medical team scribes, student scribes, and digital scribes (Table II).<sup>8</sup> Professional scribes are employed by companies that are hired to manage all aspects of the scribe implementation including hiring, training, and maintaining the staff and documentation updates. These scribes can be both in person and virtual using technology. Medical team scribes are composed of team members such as medical assistants, licensed practical nurses, and advanced practice providers. There have been various models such as turbo practice or team-based care, where 2 team members, usually a medical assistant or a nurse, provide documentation support and are paired with a physician.<sup>9</sup> The third type are student scribes. These are students who are typically postbaccalaureate students pursuing a career in medicine and in a “gap year” or medical students who are performing a rotation where the goal is education alongside health care providers through coauthoring the clinical documentation. The last type of team documentation is the digital scribe, which uses artificial intelligence combined with speech recognition and natural language processing to script the patient encounter.<sup>10</sup> This technology is rapidly developing; however, it is not currently ready for clinical practice.

Potential drawbacks of medical scribes are miscommunication between the scribe and the physician, errors in documentation, and physician time spent training new scribes versus the longevity of the scribe working in the clinic. As far as the authors of this

**TABLE II.** A comparison of the pros and cons of the 4 subtypes of medical scribes

| Comparison of different scribe types |  |  |
|--------------------------------------|--|--|
| Subtype                              | Pros   | Cons   |
| Professional scribe                  | More training and experience, cost of training provided by company | Potential for conflicting policies between the company and the hospital, training not specific to the practice |
| Medical team scribe                  | Scribe can both document and assist patients                       | Medical team spends more time documenting instead of helping patients  |
| Student scribe                       | Cost-effective   | High turnover rate, time lost training new scribes   |
| Digital scribe                       | Cost-effective   | Least convenient, more prone to error  |

review article are aware, there are no current studies showing the average length of retention for a scribe compared with cost of training and physician time spent fine-tuning the new scribe’s implementation.

More research needs to be done to determine which method provides the greatest benefit with regard to cost efficacy, provider satisfaction, and positive patient results. In addition, it would be interesting to evaluate the population of individuals employed as medical scribes, the length of time of job retention, and physician views on training new scribes.

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