
MEDICAL SCRIBES

What are they?

A scribe is a medical transcriptionist, hired to accompany a physician into the consultation room to transcribe all details of the patient visit into the electronic medical record in realtime, as dictated by the physician, usually via a laptop computer or tablet. The scribe acts as the physician's personal clerical assistant, making calls, bringing up pertinent medical history, lab and radiology results ready for the physician to review, generating referrals and e-prescriptions, acting as a chaperone for physical examinations, and assisting with discharges. For intimate examinations where the scribe is of the opposite sex to the patient, they may sit outside the exam room – and the doctor usually wears a lapel microphone to maintain communication with the scribe. Scribes accurately document time of procedures, calls from physicians, and timelines of events. Scribes do not, and may not, act independently. The physician remains ultimately responsible for the clinical record and, at the conclusion of the patient encounter, must review the scribe's documentation and make any necessary amendments, before signing off the chart.

Scribes are used most frequently, but not exclusively, in emergency departments in the USA, where they will generally work with one ED physician throughout an entire shift, (often working regularly with the same physician). US studies show that around 40% of the average ED physician's time is spent on electronic (EMR) documentation, and only 28% in direct patient contact (a further 12% is spent reviewing test results, 13% in consultation with colleagues, and 3% on other activities)¹.

Medical scribes function to maximise physician productivity by relieving doctors of the time consuming task of electronic charting and data management. This frees up doctors to increase patient contact time, give more thought to complex cases, better manage patient flow through the department/clinic, and see more patients.

Recruitment and training

Most scribes are pre-med college students working toward a career in medicine or nursing. The job is ideal as a way for them to earn money and gain clinical experience, as unlicensed members of the ED staff.

They can be employed by the healthcare organization, by individual physicians, or be a contracted service from one of the numerous scribe agencies that have arisen in the US (scribe agencies recruit, train in-house and pay the scribes, and provide the hospital with scribes for agreed-upon shifts).

Just a few examples include Scribe MD (<http://www.scribemd.com/aboutscribes.htm>); PhysAssist scribes (<http://www.iamscribe.com/services.php>); Emergency scribes consultants (<http://www.eccpa.org/scribes/index.html>); Scribe America (<http://www.scribeamerica.com/>)

It is essential that scribes have good knowledge of medical terminology, common software packages and EMR systems, and are familiar with human anatomy and the physical exam process. Other qualities include the ability to accurately record information, good organizational skills with focus on tracking patient care, professional demeanour, recognition of privacy considerations for patients, and the ability to multitask.² Training programs vary greatly between institutions/agencies, with some being more structured than others. For example, the Robert Wood Johnson University Hospital scribe program requires applicants to have at least 2 years clerical experience, and to pass a graded course involving 60 hours training; while other programs allow scribes to start in the ED immediately under supervision of an experienced scribe (“bedside training”) – with supervision lasting for as little as 3 shifts.

According to payscale.com, the average hourly rate for a scribe is USD\$12.91 (range \$8.93 - \$17.49 per hour); national average annual salary of \$27,000 (as of June 2014). Scribe agencies typically bill EDs in the range of USD\$20 - \$25 per hour, per scribe.

Evidence of benefit

The few recent studies on the effect of scribes in the ED and outpatient settings have been encouraging, showing significant benefit to physician productivity and workflows.

- **Increase in number of patients seen per hour** - by 0.08 to 0.28 patients for every hour of scribe usage per shift. An observational comparative study over 18 months at an academic tertiary hospital adult ED (treating 59,000 adult patients per year), using scribes for weekday daytime shifts, found that if an ED physician changed from 0% to 100% of patients seen with a scribe, 0.8 additional patients per hour could be evaluated³. In another study at an urban emergency residency training ED in Illinois (>70,000 annual visits, 30% seen by attending physicians without registrar involvement), the introduction of scribes for use by the attending physicians increased clinician productivity from 1.81 to 2.09 patients per hour.⁴
- **Decrease in door-to-doctor time but no conclusive evidence of change in length-of-stay time** – studies consistently report significant improvements in average door-to-doctor time with scribe use, from doctors not spending as much time documenting. However, it is less clear whether scribe use is associated with improvement in total length of stay for patients in the ED. At the Illinois ED, patient throughput decreased by 23 minutes per visit (143 minutes vs 120 minutes)⁵, and two other EDs in New Jersey and Maryland (annual ED volumes of 65,000 and 68,000), have reported improvements in patient length of stay of

15% - 36% respectively.⁶ In contrast, studies at two other EDs⁷ found no change to length of stay, despite the improved door-to-doctor times.

- **More thorough documentation** - Physicians commonly also report that having a scribe results in more thorough documentation - particularly around recording timeline of events eg, recording phone calls made to colleagues, when doctors are paged and called back, and entering patient re-exams, which are often overlooked by physicians. Because scribes perform realtime, in parallel documentation, they can capture activities and insights that might be lost if the EMR is filled out after the exam or procedure. Anecdotally, ED physicians also report that having a scribe makes them more likely to complete a full review of systems and exam, even when all ten systems may not be clinically relevant.

“Consider the scribe as a personal tape recorder. They only write what they hear from you, and in most cases, we say more than we document about the patient encounter”

- Dr Claire Plautz, Assistant Professor of emergency medicine, University of Virginia Health System.⁸

- **Increase in relative value units (RVUs) per hour** – a consistent finding in all studies of scribes in ED (RVUs are a measure of value used in the US Medicare reimbursement formula for physician services) from more robust documentation and increased numbers of billable patients seen.

Study authors noted that there was variable influence of the effect of scribes on each individual physician’s RVU and Pt/hr rate, given the varying physician practice styles and efficiencies in the department, but they did not attempt to study the potentially variable influence of scribes on the highly productive versus less productive ED physicians.

- **Increased Physician job satisfaction** – numerous positive anecdotal reports of ED physician experiences with scribes can be found in media reports and online blogs. Scribes are credited with reducing physician “burnout” and making the job more enjoyable from improving the physician’s workflow, reducing the paperwork burden, enabling the physician to focus on the patient and forget about the chart, allowing doctors to leave on time at the end of a shift, and increasing their productivity-based pay. From the physician’s perspective, patients also seem to like having them verbalise the exam findings and treatment plan. See <http://www.kevinmd.com/blog/2012/12/experience-scribe-emergency-department.html>.
- **Benefits in the outpatient clinic setting** - the findings of increased ED productivity have been replicated in studies of scribe use in outpatient cardiology⁹ and urology clinic¹⁰ settings. A time-motion study of the cardiology consultations demonstrated a **37% reduction in patient visit time** with a scribe due to physicians spending less time gathering, collating, and

documenting data prior to, during, and after each visit. Physicians were able to spend **more time in direct face-to-face interaction with the patient despite the shorter time needed for each visit**. Shorter consultation times were able to be scheduled, shortening wait list times and **improving patient access** to the services. Urologists using scribes in their outpatient clinics were dramatically **more satisfied** with their office hours when a scribe was present (93% vs 19%)¹¹. **Patient satisfaction at the outpatient clinics remained very high** with or without scribe use – the vast majority of patients were either neutral or liked the scribe system, and it was noted that a number of patients commented to clinic staff about the benefit of having the physician’s full attention without distraction from the computer. These findings suggest that scribe use can help mitigate some of the concerns associated with EMR use in the consultation room – these being, less psychosocial discussion, less attention to the patient’s agenda and a shift from a conversational to a blocked style of communication.¹²

Note however, that **in the ED setting, the effect of scribes on patient satisfaction remains unclear** (not formally studied) and should not be assumed to be similar to the outpatient setting given that there is no conclusive evidence that scribes in ED make any significant change to the amount of time a patient spends in the ED.

Are scribes worth the investment? It depends...

Each ED must make an assessment as to whether the costs outweigh the benefits.

"Our conclusion is that scribe programs won't fix an ED that is really broken. But EDs that are looking to reduce length of stay, are struggling with a high percent of left without being seen rates or are experiencing challenges with their EMRs could really benefit from hiring scribes. Scribe implementation can even pay for itself."

- Dr Michael Hochberg, medical director for St Peter's University Hospital, New Brunswick, N.J.

Direct costs

- Training
- Salary
- IT equipment and support – tablets or laptops

Indirect costs

- Risk management –misdocumentation by the scribe, which is subsequently relied upon by other providers, causing patient harm. Although there have been no recorded cases of this occurring, it remains a potential risk that should be considered by emergency physicians.

- Possibility of scribe incompetency causing actual slowing down of physician workflow eg, requiring physician to rewrite every chart. As the US scribe industry continues to grow, the variability in quality of scribe programs is likely to increase. One physician, despairing of the expense and problems faced in EMR implementation, posted this online comment; *“We have tried scribes which only adds to the overhead and requires seeing more patients, quicker, to pay for them. The notes they write are devoid of meaning...”*¹³

A 2013 US study¹⁴ weighed the cost of scribe salaries against the returned value – calculated by assigning financial values to improvements in key metrics; the increase in patients seen per hour, billable volumes, RVUs per patient, pulse oximetry and rhythm strip capture (which are billable measures in the US). Two EDs were studied - Northwest Hospital, Randallston, Maryland (annual ED volume 65,000) and Saint Peter’s University Hospital, New Brunswick, New Jersey (annual ED volume 68,000). At these institutions physician pay was taken as \$180/hour and scribes cost \$20/hour (from ScribeAmerica agency). Both showed measurable improvements in every parameter with scribe use – including improvements in average number of patients seen per hour of 8%, reduced lengths of stay of 15% - 36%, and reduced door-to-doctor time of 40% and 22%. Overall, it was found that scribes could be measured at 20% of the productivity of a physician. Potentially, this could immediately produce value (20% of \$180/hr is \$36/hr, but a scribe only costs \$20/hr).

It was noted that the biggest driver for a return on investment was reduction in physician coverage. In practical terms, this meant the EDs should decide how many hours scribe coverage they needed, and cut physician hours to match this cost, ie, if they wanted 9 scribe hours, one physician hour would be cut, and the return in investment realized from the consequent increased productivity and stronger documentation.

Aside from the quantitative figures, potential non-monetary benefits such as improved patient and staff satisfaction and morale, can be difficult to measure objectively, but are frequently reported by providers utilizing scribes and should be considered in the investment equation.

*As with EMRs, once a scribe program is fully implemented, it is hard to remove it from the ED's culture*¹⁵

Implementation considerations for WDHB

- Lack of privacy as a potential barrier to implementation – patients may be reluctant to have a third party in the consultation/physical examination. The concern is that scribes will change the dynamic of the doctor-patient encounter – patients will feel they are talking to an audience and will not raise, or minimize, embarrassing issues eg, substance abuse, sexual problems. This did not seem to have been a problem in

the US urology outpatient clinic setting¹⁶ – where patients were comfortable disclosing sensitive urological information, and being examined, in the presence of a scribe. However, the ED patient population is more diverse, and cultural differences locally and internationally should be considered /tested.

- Implementation costs: training, scribe salary, IT equipment and tech support – tablet(s) or laptop(s)
- Who will train them and how? Note high attrition rate if using health students
- What shifts should be covered? ie, when are the highest patient volume times in ED?
- Which ED doctors should be given the option of a scribe? (in the US, typically ED consultants only, and “fast track” doctors excluded as mid-level providers usually assist in fast track areas)
- Ability to pilot scribe use? Test acceptability to patients and staff and measure effect on productivity – patients seen per hour, door-to-doctor times, length of stay, provider and patient satisfaction. Start with the busiest shifts and extend coverage according to results.

¹ Hill Jr, R. G., Sears, L. M., & Melanson, S. W. (2013). 4000 Clicks: a productivity analysis of electronic medical records in a community hospital ED. *The American journal of emergency medicine*, 31(11), 1591-1594.

² <http://medicaleconomics.modernmedicine.com/medical-economics/news/scribes-can-help-document-care-boost-efficiency-medical-practices?page=full> (accessed 2 July 2014)

³ Arya, R., Salovich, D. M., Ohman-Strickland, P., & Merlin, M. A. (2010). Impact of scribes on performance indicators in the emergency department. *Academic Emergency Medicine*, 17(5), 490-494.

⁴ J.S. Marshall, C.M. Verdick, M.S. Tanaka, R.C. Frederick, G.Z. Hevesy, H. Wang, J.W. Hafner (2012). 296 Implementation of Medical Scribes in an Academic Emergency Department: Effect on Emergency Department Throughput, Clinical Productivity, and Emergency Physician Professional Fees. *Annals of Emergency Medicine* (60)4, S105

⁵ Ibid.

⁶ <http://www.beckershospitalreview.com/capacity-management/are-medical-scribes-worth-the-investment.html>

⁷ Supra at 2.

Also, see case study at <http://www.acep.org/Continuing-Education-top-banner/Focus-On--The-Use-of-Scribes-in-the-Emergency-Department/> (accessed 2 July 2014)

⁸ Scheck, A. (2009). The next big thing: medical scribes: Scribes push emergency medicine closer to adoption of electronic medical records. *Emergency Medicine News*, 31(2), 13-16.

⁹ Bank, A. J., Obetz, C., Konrardy, A., Khan, A., Pillai, K. M., McKinley, B. J., & Kenney, W. O. (2013). Impact of scribes on patient interaction, productivity, and revenue in a cardiology clinic: a prospective study. *ClinicoEconomics and outcomes research: CEOR*, 5, 399.

¹⁰ Koshy, S., Feustel, P. J., Hong, M., & Kogan, B. A. (2010). Scribes in an ambulatory urology practice: patient and physician satisfaction. *The Journal of urology*, 184(1), 258-262.

¹¹ Ibid.

¹² Supra at 9

¹³ Online comment by Charles Cramer, responding to Bank, A. J. In praise pf medical scribes. Wall Street Journal, 7 April 2014: <http://online.wsj.com/news/articles/SB20001424052702304418404579469371577995400> (accessed 15 July 2014)

¹⁴ Supra at 6.

¹⁵ <http://www.acep.org/Continuing-Education-top-banner/Focus-On--The-Use-of-Scribes-in-the-Emergency-Department/> (accessed 2 July 2014)

¹⁶ Supra at 10