

Next big thing: integrating medical scribes into academic medical centres

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The rapid emergence of medical scribes in the electronic medical record (EMR) era is changing the practice of medicine. Medical scribes are trained to record clinical documentation in real time for physicians providing patient care. While the use of scribes as a means to improve physician efficiency in emergency departments has been reported as early as the 1970s,^{1 2} it is only recently that the popularity of scribes has skyrocketed and captured the attention of the medical community.^{3–5} The American College of Emergency Physicians estimated that in 2011, more than 400 physician groups at over 1000 US hospitals were using scribes.⁶ These numbers are projected to increase exponentially as the use of scribes expands beyond emergency departments into the outpatient setting of both small and large healthcare delivery systems across the country.^{7–10} Scribes have been hailed as ‘the next big thing’ in modern medicine,¹¹ and credited for increasing physician efficiency and productivity,¹² improving both physician and patient satisfaction,¹³ increasing revenue and creating returns on investment,¹⁴ and providing scribes—most of whom are students in premedical training—the opportunity to gain real-world experience that is invaluable for their future careers in medicine.

While there is a growing body of literature demonstrating the benefits of medical scribe programmes for all stakeholders—patients, physicians, healthcare systems and students in training—they have been mostly limited to the private sector. The vast majority of US hospitals that are using scribes are non-academic institutions. These hospitals hire scribes trained and managed by for-profit companies like ScribeAmerica, PhysAssist Scribes, Elite Medical Scribes and at least 19 other companies.¹⁵ In comparison, academic medical centres have been slow to adopt the use of

medical scribes, even though they potentially stand to gain the most from new models of care that directly address issues of physician productivity, patient satisfaction, quality of care and faculty burnout. Scribe programmes also provide attractive opportunities for pipeline development by giving premedical students the opportunity to engage in authentic workplace learning experiences that add tremendous value to patient care. Today, only a handful of academic medical centres have established medical scribe programmes, some using commercial scribe vendors and others creating their own homegrown programmes (table 1).

In a time when marked changes are happening in both healthcare delivery reform and medical education redesign, academic medical centres should be at the cutting edge, not playing catch up. We propose that the integration and expansion of medical scribe programmes into academic medical centres offers an attractive solution to address current challenges in healthcare delivery while simultaneously bridging the gap between premedical and medical education. This article explores potential benefits and challenges of establishing scribe programmes at academic medical centres from the perspectives of the major stakeholders.

The potential benefits of scribe programmes to physicians and patients are substantial. In the EMR era, physicians are spending more and more time in front of computers rather than face-to-face with patients and their families. Verghese¹⁶ describes the concept of the ‘iPatient’, where the growing demands of charting and interpreting massive amounts of electronic data are fundamentally eroding the physician–patient relationship. Studies have demonstrated the strong negative influence of EMRs on physician–patient communication and rapport.^{17–22} A recent study by the RAND Corporation, commissioned by the American Medical Association (AMA), concluded that the EMR was a major source of physician dissatisfaction.²³ In addition, it is estimated that 20–45% of a primary care physician’s day is spent on administrative work, a large portion of which is writing notes.^{24–26} A scribe programme would

free up physicians to focus on what they love to do and what they were trained to do: caring for patients. Patients and families get more face-to-face time with physicians, resulting in better relationships and potentially better outcomes for patients. At institutions with established scribe programmes, this shift in workload has been linked to higher levels of both physician and patient satisfaction. It has also resulted in more complete and accurate notes that have fewer errors, thereby providing a solution to a well-recognised problem of the cut and paste function of EMRs that can seriously jeopardise patient safety.^{27 28}

At the larger institutional level, scribe programmes also carry significant benefits for academic medical centres, not the least of which is the potential to increase revenue as a result of higher physician efficiency and productivity. Studies have demonstrated the ability of scribe programmes to generate higher relative value units and create substantial returns on investment.^{6 12 14} Beyond the direct financial incentives, academic medical centres are also interested in faculty retention, which can be addressed with scribe programmes by reducing administrative workload, improving job satisfaction and work-life balance, and allowing faculty more time to dedicate towards their scholarly interests.²⁹ More complete and accurate medical records would reduce the risk of errors during patient care and inadequate documentation for billing, which can defend the organisation against the threat of costly medical liability situations and reduce problems with reimbursement due to rejected claims. Furthermore, scribe programmes provide a cost-effective opportunity for academic medical centres to fulfil their mission of training a new generation of health professionals—by offering valuable workplace learning experiences for technologically savvy premedical students who will become fully equipped with the skills to practice medicine in the EMR era.^{30–33}

Students stand to gain just as much from medical scribe programmes as patients, physicians and academic medical centres. These programmes provide motivated premedical students with real-world exposure to medicine and allow them to gain meaningful patient care experiences that can bridge the gap between undergraduate education and medical school. Student scribes are trained to be adept with medical terminology and have advanced skills in care documentation that many medical students do not acquire until more than halfway through

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Table 1 Examples of US academic medical centres with established medical scribe programmes

Academic medical centre	Affiliated medical school	Location (city, state)
Beth Israel Deaconess Medical Center	Harvard Medical School	Boston, Massachusetts
Mayo Clinic	Mayo Medical School	Rochester, Minnesota
University of Massachusetts Memorial Medical Center	University of Massachusetts Medical School	Worcester, Massachusetts
University of Minnesota Medical Center	University of Minnesota Medical School	Minneapolis, Minnesota
Wake Forest Baptist Medical Center	Wake Forest School of Medicine	Winston-Salem, North Carolina
Ohio State University Wexner Medical Center	Ohio State University College of Medicine	Columbus, Ohio
Rush-Copley Medical Center	Rush Medical College	Aurora, Illinois
Houston Methodist Hospital	Weill Cornell Medical College	Houston, Texas
Ronald Reagan UCLA Medical Center	David Geffen School of Medicine at University of California, Los Angeles	Los Angeles, California
Stanford Health Care	Stanford University School of Medicine	Stanford, California

medical school. Thus, scribe programmes can be incubators of talent and provide accelerated training for students to become fully prepared for the rigours of medical school.^{30–33} Although the current literature is lacking on the career trajectories of scribes, it is believed that these experiences increase the likelihood of students to pursue further health training and improve their chances of being accepted into medical school. This last point is especially important as a potential strategy to encourage, support and increase the participation of students from under-represented minority groups to pursue medical training in order to ensure the diversity of the US health professions workforce.³⁴

Finally, the potential of scribe programmes to serve as a powerful pipeline development tool for academic medical centres should not be overlooked. These programmes can offer opportunities for students to gain early exposure to certain under-represented career tracks in medicine, such as primary care. It is well recognised that early exposure to primary care increases the likelihood of students to pursue primary care specialties, such as family medicine or general internal medicine.³⁵ By developing pilot programmes that train premedical students to function as scribes in the primary care setting, some academic medical centres—like Stanford University School of Medicine—are trying to engage and inspire students to consider careers in primary care, even before they begin medical school.³⁶

At Stanford, we are starting to integrate medical scribes into our primary care clinics by offering a 1-year ‘fellowship’ for

postbaccalaureate students interested in pursuing a career in medicine. Highly qualified premedical students are selected through a competitive application process for this unpaid experience. The programme includes 100 h of online (ie, case-based modules with quizzes) and in-clinic training (ie, shadowing and reverse shadowing with scribe trainers) for participants to become certified medical scribes. Scribes are matched with clinician-educators in family medicine, who provide them with longitudinal mentorship and an invaluable early immersive clinical experience. Scribes work side-by-side with their physician mentors in the primary care setting for 20 h per week, providing clinical documentation in real time. They quickly become experts in medical terminology and at navigating the EMR for patient care—skills that are valuable for their future careers. Scribes are also offered the opportunity to participate in ongoing quality improvement initiatives and research projects with their faculty mentors. In return, the faculty get to spend more face-to-face time with patients, spend less time doing administrative work, and dedicate more time to teaching students, pursuing their scholarly interests, or being with their families. Over the next several years, we plan to fully evaluate the effectiveness and impact of this programme—using a randomised controlled study—to see if the outcomes and costs justify expansion to other academic medical centres.

The integration and expansion of medical scribe programmes into academic medical centres will not be without challenges. Although these programmes are

designed to increase revenue in the long term, start-up costs need to be considered, especially in today’s resource-strapped academic environment. If academic medical centres wish to start homegrown programmes rather than partner with commercial scribe vendors, additional costs are needed to establish training curricula as well as to recruit and manage scribes. Practices that start using scribes can expect to encounter a learning curve for both physicians and scribes, which can result in an initial decline in efficiency and productivity. Questions regarding who is ultimately liable for documentation errors made by scribes, how programmes should ensure the quality of work provided by scribes, and how academic medical centres can recruit and sustain a reliable pool of student scribes need to be answered. In addition, whether patients feel comfortable discussing sensitive topics in the presence of students need to be examined. Although many patients at academic medical centres are accustomed to having medical students and residents involved in their care, it is unknown how the widespread participation of premedical student scribes may be received.

To answer these questions, we need to launch well-designed scribe programmes at academic medical centres and conduct rigorous studies to explore their impact on all stakeholders. We call for randomised controlled trials of medical scribes to explore their effects on physician–patient communication, physician and patient satisfaction, productivity and efficiency, faculty retention and burnout, accuracy of medical records and its relationship to preventable errors. Echoing the call of others,³⁷ we believe that these studies should be done in the primary care setting, where the majority of US physician office visits occur. In addition, we need studies to examine the career trajectories of scribes, the feasibility of using scribe programmes to recruit medical students from under-represented minority groups, and the potential for these programmes to work as pipeline development for much needed areas like primary care.

It is time for academic medical centres to put themselves at the forefront of the medical scribes movement. Lessons learned from pilot programmes should be disseminated in the literature. Rigorous research should be conducted. Model programmes need to be shared. If academic medical centres can capture the success of private sector scribe programmes and replicate it on a large scale, the results could be transformative.

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