

INTEGRATION OF MEDICAL SCRIBES IN A GENERAL PEDIATRIC OUTPATIENT CLINIC: PILOT RESULTS STUDYING PROVIDER SATISFACTION

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Abstract

Background: Scribes are often used to resolve challenges associated with use of electronic medical records. This pilot study assessed the impact of scribes on provider satisfaction in an outpatient pediatrics clinic.

Methods: Providers completed encounter-level surveys in fall 2016, before implementation of the pilot program; focus groups solicited feedback after the pilot.

Results: Eleven providers completed 164 surveys before the pilot. Almost all agreed they were able to stay on schedule (72 percent). Following the pilot, most reported that scribes were helpful with completing notes. Barriers included concerns about scribe training and competence and about language barriers with Spanish-speaking families. Providers recommended increasing scribe training in documentation for children with complex healthcare needs, among other areas.

Conclusion: In this high-volume clinic where providers generally report having enough time with patients, most still found scribes helpful. The areas for improvement identified in this study could enhance the usefulness of scribes in outpatient pediatric clinics.

Introduction

Although meaningful use of electronic medical records (EMRs) is now required, many providers describe challenges with the current technology. Of more than 5,000 U.S. physicians surveyed in a recent study, almost all reported that they were dissatisfied or very dissatisfied with their EMR.¹ Providers commonly report that EMRs can be difficult to use, inefficient, disruptive to face-to-face encounters with patients, and a hindrance to the clinical documentation process.² Primary care providers using EMR systems may have to manage a greater volume of tasks without any additional time, which can lead to physician stress and burnout.³

The use of medical scribes has become a popular approach to resolving these challenges. The Joint Commission describes a medical scribe as an unlicensed person who works under the direction of a physician or other licensed provider to enter information into an EMR.⁴ Scribes may not make independent decisions beyond the directions or decisions of the licensed provider when documenting the encounter in the electronic record, and they are prohibited from entering orders. Reports in the literature indicate that scribes are most commonly used in emergency department settings,⁵⁻¹¹ although studies of scribes in both community and academic outpatient clinics have been published.¹²⁻²⁷ However, there is a paucity of research investigating the use of scribes in

pediatrics; we were able to identify four studies, none of which was conducted in a general outpatient setting.²⁸⁻³¹ We therefore sought to pilot test the incorporation of medical scribes in a pediatric outpatient practice in order to assess the impact of scribes on provider satisfaction and to identify benefits and barriers to the successful use of scribes in this context.

Methods

This quasi-experimental pilot project was conducted between September 2016 and April 2017. Before implementation, baseline data collection took place from September 25 through October 15, 2016. Scribes were introduced into the clinic setting on December 26, 2016, for a three-month pilot test. Qualitative data from providers regarding their experiences and satisfaction with the scribes were collected in focus groups and key informant interviews conducted in April and May 2017.

The study took place in a major metropolitan area, at a large academic clinic run in partnership with a Federally Qualified Health Center (FQHC). This clinic serves a predominantly poor, ethnic minority population and has a high proportion of patients with complex healthcare needs. At the time of this study, in fall 2016, the clinic saw an average of 320 patients per day during 12 hours of service (8 a.m. to 8 p.m., Monday through Friday). Implementation preparations included the approval of a program charter for the integration of medical scribes, development of the scribe workflow and scribe attestation templates for the EMR, selection and contracting of a scribe company, and weekly project management meetings.

Providers were invited to participate in the scribe pilot via email; participating providers completed written informed consent forms. All providers were trained on the scribe attestations required by the Joint Commission. Participating providers worked in all parts of the clinic (including outpatient and urgent care) and covered shifts throughout the day and week. The study was approved by the research governance committee of the FQHC and the institutional review board of the academic medical center.

During a three-week baseline period before implementation of the scribe pilot, medical assistants distributed encounter-level surveys to providers to assess satisfaction with various aspects of the visit and the amount of time they took to finish their notes after the visit. These satisfaction questions are similar to those used in previous studies.³² Providers rated their agreement with four statements on a five-point scale (from "strongly disagree" to "strongly agree"): "The patient seemed satisfied with the visit," "I was able to spend enough time with the patient during this visit without feeling rushed," "I left the exam room feeling satisfied with the encounter," and "Overall, I was able to stay on schedule for this care session." Additionally, providers estimated how long it took them to finish their note for the encounter using one of four response options: less than 5 minutes, 5 to 10 minutes, 10 to 20 minutes, or more than 20 minutes.

The scribes were contracted through a commercial scribe company. Before their clinical work, they

completed the FQHC's human resources (HR) onboarding, as well as eight hours of EMR-specific training provided by the EMR training team and focusing on documenting pediatric medical records. Scribes' duties included documenting the patient's medical history, review of systems, results from lab work, physical exam, and treatment and discharge plans. During the first week that the scribes worked in the clinic, the EMR training team was available on-site to provide additional real-time training as needed. The scribes also shadowed participating providers for four hours to observe actual patient flow and to increase their capacity to document encounters for patients with special needs. Three scribes were hired to provide a combined total of 80 hours of service per week. Each of the 15 participating providers was intended to work with a single scribe (rather than any scribe who happened to be available); each scribe worked with multiple providers. The clinic had a predetermined schedule in which each scribe was assigned to work with certain physicians at certain times. Providers mentored scribes to improve their general performance and to give feedback on individual providers' documentation preferences as they reviewed the scribes' documentation either after each visit or after the clinic session was completed. The scribes' workflow is illustrated in [Figure 1](#).

In-depth, qualitative feedback was collected from providers after completion of the pilot test through focus groups. Focus groups were held at different days and times to allow as many providers as possible to participate. Those whose clinical schedules conflicted with all focus groups were given the option to provide information through individual interviews. In the focus groups and interviews, providers were asked about the same topics: their experience with consistency in working with scribes, their opinion regarding how helpful scribes were in competing notes, and factors that they felt positively or negatively contributed to consistency and helpfulness.

Descriptive statistics for the baseline survey data were calculated using SAS version 9.4. Detailed notes from focus groups and interviews were reviewed by two investigators (S.H. and M.P.) and analyzed to identify emergent themes.

Results

Fifteen providers agreed to participate in the trial. Most (73 percent) were female, and the sample was evenly divided between junior (less than five years' experience; 53 percent) and senior (five or more years' experience; 47 percent) attending physicians. Baseline data were collected reflecting 164 encounters with 11 of these providers. The number of surveys each individual provider completed ranged from a low of 5 to a high of 30. Overall, providers perceived patient satisfaction to be high: 96 percent agreed or strongly agreed that the patient seemed satisfied. While a small minority of surveys reflected visits during which physicians were not able to spend enough time without feeling rushed, the overwhelming majority (88 percent) agreed or strongly agreed that they did have enough time. The same proportion agreed or strongly agreed that they felt satisfied with the encounter. Roughly three-quarters (72 percent) reported that they were able to stay on schedule during the care session. For more than half of the encounters that providers reported on (57

percent), they needed 10 minutes or less to finish their note. Overall, one in five took longer than 20 minutes to finish. (See [Table 1](#).)

One month after the scribe pilot was initiated, and for reasons unrelated to this project, two of the three scribes resigned from the commercial scribe provider. The pilot was suspended for one month while new scribes were identified, onboarded with HR- and EMR-specific training at the FQHC, and trained in their roles. The pilot then resumed for the final two months. The project was thus implemented in January, March, and April 2017, with a lapse in February.

In three focus groups and two face-to-face interviews, we collected qualitative feedback from 14 participating providers; one of the 15 providers was unable to meet with the study team to provide feedback. In general, although the intention was for providers to work consistently with the same scribe, the actual experience reflected poor consistency with the use of scribes; only 2 of 14 providers described a consistent experience. Providers perceived consistency as critical to a scribe's usefulness; one provider stated, "The key is to have the same scribe over time," and another stated that scribe documentation "would likely improve if I worked with a consistent person over time." Providers varied in their documentation preferences (e.g., the use of note templates, specific places where they wanted things documented in patients' records); they noted that it took scribes time to learn these individual preferences. Consistency was seen as important in part because it increased the amount of time a scribe worked with a given provider, enabling scribes to get to know providers and their preferences.

Almost half of the providers described frequent technical problems that in some way limited scribes' ability to work and/or support providers. Scribes and providers were each intended to have their own internet-enabled computer during a clinical encounter, but providers reported that scribes experienced frequent connectivity issues that prevented them from accessing patients' medical records. In these situations, either the physician had to work without the scribe or the scribe had to use the physician's computer to document the encounter.

Ten of the 14 providers (71.4 percent) reported that scribes were helpful to them in completing notes and other documentation faster. A typical provider stated that he was "much happier knowing my notes were done faster. . . . I liked being able to sit and talk to the family." This provider also reported that the scribe's documentation in the history and physical examination record was superior to his own. One reported that scribes helped with the flow of clinic work; another expressed a consistent sentiment, stating that scribe allowed her to finish in the clinic on time even when there was a busy clinic load. The providers who did not find the scribes helpful tended to describe themselves as "very particular" about their notes and felt that the scribes' documentation often lacked adequate detail. For example, one recounted an instance when the scribe failed to document anticipatory guidance and return information that the provider explained during an encounter. In other situations, providers who were dissatisfied with the scribe experience reported that scribes documented too much: "Scribes would write literally everything a parent said. I had to spend time going back to

shorten the notes."

Providers in both groups noted areas where there was room for improvement in scribe training, as well as barriers to successful integration of scribes in encounters with particular groups of patients. In general, the more background and training the scribes had, the more useful providers found them to be. Even providers who were supportive of scribes often expressed the opinion that the scribes needed greater training in using and navigating the EMR, including the effective use of note templates. Scribes' knowledge of medical terminology was variable, and providers felt that a better grounding in terminology would have made them more useful. Multiple providers noted that proper documentation of the assessment and plan could be particularly challenging for scribes. Scribes' performance improved with time as they developed better mastery of medical terminology and of the EMR.

Maximizing the benefit of scribes was found to be more difficult in encounters with two types of patients commonly seen in this clinic: children with complex healthcare needs and children in Spanish-speaking families. Four providers noted that working with a scribe was less successful when the patient had complex healthcare needs; scribes experienced "an increased learning curve for complex children," which was complicated by the fact that they did not always know about or use the note templates that providers use to facilitate documentation for these patients. Three providers spontaneously mentioned translation as a barrier to scribe success. The commercial scribe company was unable to provide bilingual scribes for this pilot, limiting scribes' benefit in encounters with Spanish-speaking families. Even if the provider could communicate with the family without the use of an interpreter, someone—generally the provider—would have to translate for the scribe so that the information could be accurately documented. One provider described this as her "greatest concern" with the scribes.

Discussion

This study documents, for the first time, that medical scribes can be meaningfully and usefully integrated into a busy pediatric clinic. In this high-volume FQHC clinic, the majority of participants found that the scribes eased their workload and enhanced patient flow, even though they indicated that they tend to have enough time with patients and generally stay on schedule without scribes. These findings are consistent with data from other settings and specialties. Reports from other primary care settings demonstrate that the integration of scribes into the workflow can lead to significant improvements in many measures of provider satisfaction, including provider documentation time and the accuracy and quality of charting.³³⁻³⁷ Data also show scribes to be a valuable addition in emergency departments, where providers reported that scribes improved charting and enabled providers to spend more time with patients, with positive impacts on job satisfaction and stress reduction.³⁸⁻⁴² Scribes can increase the amount of direct face-to-face interaction between providers and patients without the interruption of a computer, can reduce the

administrative burden on providers, and can increase productivity and revenue.⁴³⁻⁴⁶ Our results suggest that pediatric providers can successfully integrate scribes into their clinics and share these benefits.

Most of the barriers providers identified to successful integration of medical scribes into the pediatric clinic were modifiable and could be addressed either with better scribe training or with the development of a longer, more consistent provider-scribe relationship. Other authors have also noted that the training scribes receive in medical terminology, for example, may be inadequate and lead to challenges, and that time is needed for scribes to get past the initial learning curve.⁴⁷ Some recommend that scribes receive at least two weeks of training with the EMR they will be using and with the individual physicians with whom they will work;⁴⁸ others paired scribes with physicians for a full three months before initiating their study.⁴⁹ Our results support dedicating more time to training and also argue for a pilot period longer than three months to give scribes and providers the time needed to achieve maximum results. As Yan and colleagues have noted, the partnership between physician and scribe is a relationship requiring trust, communication, and feedback; each party needs to learn how to work with the other.⁵⁰ The physicians in the current study similarly reported that greater consistency would allow the scribe to better understand how a given physician provides care and prefers to have encounters documented, making for more seamless documentation and better meeting provider expectations.

While some of the challenges encountered in this pilot have been described previously, two were not previously reported: the increased learning curve for children with special healthcare needs, and the need for translation for the scribe when families and providers speak a non-English language. Roughly one in five U.S. children have special healthcare needs, and nearly one in four American families include a child with special healthcare needs.⁵¹ These families face substantial barriers when accessing care for their children. When innovations to improve care are designed and tested, it is particularly important to include these families in order to identify potential unintended consequences. We must ensure that we do not inadvertently add to the challenges they face in accessing high-quality care. The same is true for families with limited English proficiency. Given that 22 percent of children aged 5 to 14 years speak a language other than English at home,⁵² incorporating scribes without providing any necessary translation could substantially diminish scribes' usefulness for a substantial population of patients, with potential impacts on patient care.

Instituting a new program in a large and busy clinic presents daunting administrative and operational challenges. Our advance planning included the development of management plans and workflows, development and training in the use of scribe attestations, and the use of a commercial scribe company to minimize the local training burden. However, unanticipated challenges led to implementation problems and delays. Internet connectivity on scribes' laptop computers was one

such challenge, as was the unexpected resignation of two scribes. In spite of these challenges, however, we believe that this study provides important support for the incorporation of medical scribes in the pediatric outpatient setting.

This study is subject to some limitations. Of the 164 pre-implementation encounter-level surveys collected, 30 (18.3 percent) were from a single provider; this provider's input may thus have had a disproportionate influence on the overall results. When we compared the median scores with and without this provider's input, however, almost all values remained the same. This provider did report taking longer, on average, to complete the notes than was typical; if we exclude this provider's data, only 4.4 percent of encounter notes took more than 20 minutes to finish. This suggests that the pre-implementation documentation burden may have been less severe, yet providers still found the scribes to be helpful. All the participating providers worked in the same clinic and knew the investigator who conducted the focus groups and interviews. Nonetheless, our findings were consistent with other reports, suggesting that this situation did not introduce substantial bias. The interruption in the pilot that occurred when two of the three scribes resigned interrupted the providers' work with the remaining scribe and lessened the time the replacement scribes had to get up to speed and get to know their providers; the fact that the majority of the providers were still satisfied with the scribes and found them to be useful indicates that our results may have been even stronger otherwise.

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Table 1: Pre-implementation Encounter-Level Physician Survey Results

Survey Item	Strongly Disagree		Neutral	Strongly Agree	
	Disagree	Disagree		Agree	Agree
The patient seemed satisfied with the visit.	0	0	4.3%	62.6%	33.1%
I was able to spend enough time with the patient during this visit without feeling rushed.	0	6.7%	5.5%	60.1%	27.6%
I left the exam room feeling satisfied with the encounter.	0	3.7%	8.6%	62.0%	25.8%
Overall, I was able to stay on schedule for this care session.	3.7%	14.7%	9.2%	50.3%	22.1%

	<5 Min.	5-10 Min.	10-20 Min.	>20 Min.	No Answer
How long did it take you to finish your note?	23.2%	34.2%	20.1%	20.1%	2.4%

Note: N = 164 surveys from 11 providers.

Figure 1

Scribe Workflow

There are no comments yet.