How Providers Can Optimize Effective and Safe Scribe Use: a Qualitative Study

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BACKGROUND: The use of electronic health records has generated an increase in after-hours and weekend work for providers. To alleviate this situation, the hiring of medical scribes has rapidly increased. Given the lack of scribe industry standards and the wide variance in how providers and scribes work together, it could potentially create new patient safety-related risks.

OBJECTIVE: The purpose of this paper was to identify how providers can optimize the effective and safe use of scribes.

DESIGN: The research team conducted a secondary analysis of qualitative data where we reanalyzed data from interview transcripts, field notes, and transcribed group discussions generated by four previous projects related to medical scribes.

PARTICIPANTS: Purposively selected participants included subject matter experts, providers, informaticians, medical scribes, medical assistants, administrators, social scientists, medical students, and qualitative researchers.

APPROACH: The team used NVivo12 to assist with the qualitative analysis. We used a template method followed by word queries to identify an optimum level of scribe utilization. We then used an inductive interpretive theme-generation process.

KEY RESULTS: We identified three themes: (1) communication aspects, (2) teamwork efforts, and (3) provider characteristics. Each theme contained specific practices so providers can use scribes safely and in a standardized way.

CONCLUSION: We utilized a secondary qualitative data analysis methodology to develop themes describing how providers can optimize their use of scribes. This new knowledge could increase provider efficiency and safety and be incorporated into further and future training tools for them.

KEY WORDS: Electronic health records; Sociotechnical systems; Medical scribes; Qualitative research; Patient safety; Training.

Prior presentations: *We have not presented this data at any conferences.*

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INTRODUCTION

United States (US) providers spend up to half of their days completing clinical documentation in the electronic health record (EHR).[1–3] Documentation tasks lead to increased after-hours and weekend work and pose a threat to provider work-life balance.[3–5] Provider burnout is associated with excessive EHR use relative to that spent face to face with patients.[6–8] Burnout is a crisis amongst providers, and as a result, organizations are faced with staffing shortages anticipated within the next decade. Therefore, organizations are prioritizing solutions that can untether providers from the EHR.[9–11] One suggested strategy is to delegate EHR tasks, such as routine data entry or mandatory documentation tasks, to another member of the care team, thereby minimizing direct EHR-related duties required by a provider.[12]

Advantages and Disadvantages of Using Medical Scribes

Medical scribes are increasingly hired to fill this role. They are typically pre-medical students who perform real-time documentation in the EHR under direct provider supervision.[13,14] Research suggests that there are many advantages to using scribes: scribes can reduce provider EHR time, increase patient and provider satisfaction, and improve coding and billing quality.[14–19] Despite these advantages, some critics argue that scribes are merely a "workaround" for coping with EHR usability.[20–22] Further, there is a growing concern regarding the wide range of variability that has been reported based on the outcomes and performance of providers who use scribes.[19,23–27] Scribed notes can highly vary in length, structure, and content.[23,24] While some research suggests that scribe use may improve documentation efficiency for some providers, multiple other studies have also reported little to no

change.[19,24,25] A recent study indicates that, on an institution-wide level, scribes have no impact on the time to chart closure compared to non-scribe-using peers.[28] There is a wide variance in the number of edits and the amount of time providers spend reviewing scribed notes.[25–27] Finally, significant "functional creep" exists with scribes performing tasks beyond their organization's job descriptions, like modifying the problem lists and performing order entries.[15,21,27]

Several factors may contribute to inappropriate scribe use, such as insufficient training and support for providers who use scribes, which can negatively impact documentation accuracy, patient safety, and the scribe efficacy.[21,27] Providers are responsible for the supervision of activities and documentation generated by their scribes. Inappropriate task delegation and inadequate oversight pose a risk for medical errors and create serious patient safety concerns. Unfortunately, current federal regulations do not address the scope of practice for scribes, and the industry lacks a universal training, licensing, or certification process.[21,27–31] Providers often receive little to no training regarding appropriate scribe supervision or guidance for providing professional development feedback to scribes.[27,29,32,33] These issues have likely been magnified by the coronavirus disease 2019 (COVID-19) pandemic. During the COVID-19 pandemic, and likely related to the increase in telemedicine, there was a significant alteration in the scribe-provider relationship, with many scribes being "virtualized" and working asynchronously with their providers.[34] Thus, with the continued and projected growth in scribe use, and with scribes expanding into new workflows, there is a need for clear consensus regarding allowable duties and supervision to enable providers to apply safe, effective, and appropriate utilization of scribes.

Aim of Study

As a research team, we have created descriptions of knowledge, skills, and attitudes (KSAs) that medical scribes should possess. We used rigorous methodologies such as the rapid assessment process (RAP), consensus conferences with subject matter experts (SMEs), and a modified Delphi process.[35–37] The value of scribe utilization may be maximized when providers are as equally trained as their scribe counterparts. However, this guidance is presently suboptimal and our aim for this study was to identify how providers can use scribes optimally so that this new knowledge can form the basis for better practices and become the foundation for future training curricula.

METHODS

We previously collected and analyzed approximately 2700 pages of qualitative data from 202 documents and identified best practices for scribe activities. Embedded in these data were details related to optimizing providers' use of scribes as well. Details on the full methodology and analysis can be found in references [35,36]. All studies are approved by the Oregon Health & Science University institutional review board.

Site and Subject Selection

We used data from four sources: (1) five site visits, (2) a medical student cohort study, (3) an expert consensus conference, and (4) follow-up virtual site visits to identify workflow changes due to COVID-19.

Five Site Visits. The parent project studied the medical scribe landscape, resulting in best practices for medical scribes. These best practices provided a framework for the development of KSAs and an educational training toolkit for medical scribes.[37] Using purposive sampling, five US organizations consisting of academic medical centers, community health centers, and clinics were selected and agreed to partner with us to investigate their scribe programs. We utilized RAP, which includes qualitative methodologies to collect ethnographic data by triangulating data using a multidisciplinary team, semi-structured interviews, observations, and member checking.[38] We analyzed the data utilizing an inductive hermeneutic approach.[35–37] The research team completed five site visits between 2017 and 2019. We conducted a total of 76 interviews with 81 individuals. We interviewed a total of 30 providers, 27 scribes, and 24 administrators. We also spent 80 person-hours observing the scribe-provider workflow.[35,36]

Medical Student Cohort Study. The research team investigated the documentation-related impact that scribing had on medical students' careers. Medical students were surveyed at an academic institution in the Northwest to investigate these phenomena. Purposively selected medical students were then invited to participate in semi-structured interviews to reflect on their experience as medical scribes. In total, we interviewed 18 medical students ranging from first year to fourth year and we gathered 18 h of audio-recorded interviews.

Expert Consensus Conference. To develop the medical scribe KSA lists, our research team held a multi-day conference that included 20 SMEs from across the USA with various professional backgrounds (medical scribe vendors, informaticians, risk managers, former medical scribes, chief medical informatics officers (CMIOs), representatives from accreditation bodies, providers, and social scientists) to discuss and evaluate the KSAs that were developed utilizing site visit data.[38] All sessions and breakout group discussions were recorded and later transcribed. By the end of the conference, we had a total of 48 documents and roughly 48 h of audio-recorded small- and large-group sessions.[38]

COVID-19 Analysis Project 2020–2021. COVID-19 caused a rapid shift to virtual medicine. We investigated changes in the workflow of medical scribes caused by uptakes in telemedicine, as well as evaluated how the previously established scribe KSAs may have shifted.[34] To determine whether any of the scribe KSA descriptions needed to be

altered, the research team revisited (virtually) some of the original sites to conduct virtual semi-structured interviews with providers, medical scribes, and administrators from multiple facilities to study the scribe landscape during COVID-19. We interviewed a total of 15 people from three of the organizations we visited in the parent study: 7 providers, 5 scribes, and 3 administrators. The average length of each audio-recorded interview was 41 min with a total of approximately 10 h and 15 min of audio-recorded interviews.

Data Analysis

The team conducted a secondary qualitative data analysis using all transcribed semi-structured interviews, field notes, and group discussion transcripts from all data sets.[39] NVivo12 was used for the qualitative analysis. The research team used a template method, first building a codebook of terms related to provider best practices. We then conducted word queries, searching for these terms throughout all of the texts and looking for anything related to knowledge, skills, and attitudes trained scribe users should have.

After locating quotes related to the codes, we conducted an inductive interpretive theme-generation process. The team categorized each quote and generated a list of themes and subthemes.[40]

RESULTS

Themes

The research team developed three high-level themes: (1) communication aspects; (2) teamwork efforts; and (3) provider characteristics. Each theme contained specific ways providers can effectively use scribes safely and in a standardized way. We punctuate our theme descriptions with italicized quotes from our subjects below.

Communication Aspects

This first theme outlines how scribe users should communicate with medical scribes.

(1) Scribe users should communicate directly and openly with scribes.
An administrator vocalized that both the scribe and provider *"have to be open and willing to communicate and explain the why not… to each other so they're on the same page so the note is clear and concise."* Scribes want providers to not only vocalize dictation and instructions, but also provide feedback about meeting the providers' expectations. One scribe told us that, *"communication is the only way to get things done right. You can't expect people to just read your mind. If you feel frustrated, talk to your provider."* The scribe needs to be given the opportunity to talk with the provider and ask clarifying questions. One former scribe commented, *"There is nothing more frustrating from the behalf of a scribe than a doctor who has a lot of expectations but doesn't make any of them very clear… I think patience and clear expectations are really key."*

(2) Scribe users should introduce the scribes to patients.
The provider should explain why the scribe is there, offering a preamble and setting the stage so that the patient is comfortable having the scribe in the room. One provider told us that, *"the key of good physician training is getting them to understand that the introduction of the scribe as they walk into the room with the scribe, is what sets everything up for success and makes it a win, win, win, including the patient."* Introductions not only put patients at ease, but they also let the patients know that the provider wants to give patients their undivided attention.

(3) Scribe users should allow scribes to ask questions.
The scribe should feel comfortable asking clarifying questions at appropriate times. One administrator noted that allowing scribes to ask questions could lead to higher-quality documentation. Making oneself available for questions is not always easy. One provider vocalized: *"I have so little time in my visits that… I haven't figured out a way to carve out time to really do one on one with the scribe."* Because the scribe must be careful to not ask questions at an inconvenient time, the provider must find time to offer the scribe opportunities for asking questions.

(4) Scribe users should give constructive criticism and feedback to scribes.
Scribes want to receive feedback. One scribe commented that, *"I enjoy getting criticism and feedback… I always try to make it a game to see how little edits my providers have to make to [my] notes."* Another scribe noted that, *"I'd rather have feedback than them not saying anything and hate the note."* Constructive criticism and feedback have become even more important with the push towards tele-scribing and virtual visits. A research member remarked that, *"in a virtual world, there's just increased ambiguity and echoing that idea of tele[phone visits with no visual cues] is probably not the most information rich way for scribes to do their job… there was a lot of assumptions, there was a lot of extra use of the asterisk [in the note], which put extra burden on the providers."*

(5) Scribe users should vocalize documentation preferences to the scribes.
If the scribe-provider dyad works together as a team for an extended period, the provider can explain preferences and, especially when the provider wants in-depth documentation, the scribe can then learn over time what the provider considers ideal. One medical student and former scribe told us a successful scribe user to work with is *"someone that is good at being able to tell you what they want in their chart. Something that really sets you up for success is spending 5 minutes right at the beginning of whatever shift you are*

going to do, especially if it's a new provider, and just go over what you normally do [in the notes]." If a scribe works with many different providers, however, it behooves the providers to communicate preferences before they work with a particular scribe. A scribe noted: *"Every provider is different and know[ing] the preferences before you walk in, you will have a better shift. If you walk in not knowing who you are working with or the preferences, I think it is going to be a rough shift."*

(6) Scribe users should verbalize physical exam findings.
Whether a scribe is in the exam room with the patient and provider, or is offsite and virtual, the provider must pay particular attention to dictating each necessary exam finding clearly to the scribe. Often, providers only need to verbalize abnormal findings, but they cannot assume the scribe can see, hear, or understand what the provider is experiencing unless it is dictated.

(7) Scribe users should verbalize the assessment and plan aloud.
Just like with the physical exam, a good provider is someone who verbalizes their assessment and plan aloud. A provider remarked that *"doing the assessment and plan out loud… is great for your patients… and hopefully your scribe. I think that's a really nice new scribe thing to do. And is helpful for both parties… [and is creating] less editing for the provider."*

(8) Scribe users should think out loud.
When the provider is asking questions of the patient, the provider will summarize the story for both the patient and the scribe. One administrator mentioned, *"An ideal provider is someone who realizes that and is very vocal and is able to think out loud. So what that typically means during a patient visit is when they're seeing patients, maybe reiterating back a couple of the important points to the patient just for clarification and also the scribe hears that and is able to pick up on that cue."*

Teamwork Efforts

This second theme encompasses behaviors of scribe users that create a positive dynamic relationship between the scribe and provider.

(1) Scribe users should interact in a professional manner with scribes and treat them as team members.
Scribes want to be respected and valued, and in return, they will work efficiently and provide value to the team. One administrator mentioned that, *"certain people just click really well with other people, and I think it's very important to have a good relationship or a good fit with you and your scribe."*
Scribes are part of the healthcare team. One provider posited that, *"Sometimes you have to remind [providers] that, they're very driven and autonomous and it's all hierarchical and now I want you to be a part of a team. So, it's like a weird polarization or dichotomy… all the teamwork stuff that's not intuitive for them."*

(2) Scribe users should teach scribes about medicine at an appropriate level.
Just like providers teach residents and fellows as team members who need training, they should teach scribes in a similar, though less intense, way. An administrator noted that having providers teach scribes about medicine could enhance the scribes' engagement: *"the doctor that wants to encourage that young person and answer questions… about medicine… makes for a fun shift, an engaging shift for that scribe… So, the doctor that wants to talk about med school and options and what courses of study were good for them and how their experience has been as a doctor and share that with the scribe… that makes for an engaged scribe…. So, we look for that doctor that has that teaching heart."*
There could be implications for higher-quality notes between the scribe and provider dyads when the providers teach their scribes. One medical student said, "*I think that [teaching] made it more interesting and fulfilling to like know what's going on behind their [note]… Like if you understand the path of the physiology a little bit, then you understand what's important in the history taking."* Another scribe noted, *"I think being willing to teach your scribe [is important]. . . If they take the time, I feel like they put out what they put in. So, if they want to be our teacher, they're going to get better charts out of it."*

Provider Characteristics

This third and final theme describes individual characteristics providers need to exhibit to be good scribe users.

(1) Scribe users should review the scribes' work soon after it is complete.
Reviewing the scribe's work is mandatory because the provider is responsible for the documentation. One provider mentioned, *"if there's anything that's not correct, right or so forth, it becomes the providers' responsibility to review the entire document."*
Another provider highlighted the importance of providers reviewing the note: *"So it really becomes the provider's responsibility to review it and then obviously attest to it at the bottom that I reviewed the document, everything in here is 100% accurate. It's not the scribe doing the physical exam and being a provider. It's the provider taking responsibility for it."*

(2) Scribe users should be patient with their scribes.
Providers should realize that inexperienced scribes need time to learn the role, and to learn they need to ask questions. One scribe noted the importance of providers having patience: *"Patience, they also need patience…*

you know, because sometimes they forget that it is a human working the computer."

(3) Scribe users should utilize a consistent sequence and structure for the visit that allows the scribes to easily document.
An effective scribe user structures patient visits in a way that allows a scribe to easily document. Even seasoned scribes struggle with catching everything when the provider does not have a systematic way for their patient visits. By using a systematic order for what is involved in visits, providers help scribes be more efficient.

(4) Scribe users should trust their scribes.
Establishing trust between the provider and scribe is important. One administrator told us *"But it is about that culture of trust. Being a part of that care team."* Trust builds over time, so rapid scribe turnover can inhibit it.

(5) Scribe users should be flexible.
Not all scribes are perfect on their first shifts, so flexibility in providers is important. One administrator mentioned, *"I think a good physician… need[s] to be somebody who is also flexible when it comes to that and understands the learning curve [that comes with scribing]."*
Providers also must give up some control over their documentation because the scribe can never produce the same level of documentation that a thorough provider can. One administrator said, *"You know, being able to give up a certain amount of control. A lot of them have a really hard time doing that."*

(6) Scribe users who develop their templates should update the scribes if templates change.
Scribes can become frustrated when providers do not update their templates. One scribe said the templates, *"were kind of unorganized."* If the providers keep track and update their templates, we were told, it would save the scribes time and effort.

(7) Scribe users should not become overly dependent on scribes.
Scribe users must be able to do their own documentation so that they can provide appropriate guidance to a new scribe. We were told about *"a scribe going on maternity leave in a very small office and, a one-provider office, and the provider… didn't know how to use the EHR and didn't bill for… three months."*

(8) Scribe users should accept feedback and learn from scribes.
The scribe user can solicit feedback from scribes, especially about the EHR, and can thus benefit from the deep knowledge most scribes gain about using clinical information systems. One administrator said that *"scribes have helped providers understand [the EHR] better. . . The scribes sometimes help them to learn new tips and tricks."*

(9) Scribe users should be approachable.
Scribes cannot learn how individual providers want their documentation to be done unless they feel free to ask questions and gain feedback. One scribe said, *"a good provider is someone who just talks to you, throughout the whole shift, and, kind of, what they want, stuff like that; how they like certain things."*

An overview list of themes and practices is in Table 1.

DISCUSSION

Goal of Study

The goal of this study was to conduct a secondary qualitative analysis to identify how providers can optimize their use of scribes. Few past studies have highlighted the relationship between providers and medical scribes, and to our knowledge,

Table 1 Themes and Best Practices for Scribe Users

Themes	Ways providers can optimize scribe use
Communication aspects	Communicate directly and openly with the scribes
	Introduce the scribes to the patients
	Allow the scribes to ask questions
	Give constructive criticism and feedback to the scribes
	Vocalize documentation preferences to the scribes
	Verbalize physical exam findings
	Verbalize the assessment and plan aloud
	Think out loud
Teamwork	Interact in a professional manner with the scribes and treat them as team members
	Teach scribes about medicine at an appropriate level
Provider characteristics	Review the scribes' work soon after it is complete
	Be patient with the scribes
	Utilize a consistent sequence and structure for the visit that allow the scribes to easily document
	Trust the scribes
	Be flexible
	Develop templates and update the scribes if templates change
	Not become overly dependent on the scribes
	Accept feedback and learn from the scribes
	Be approachable

no study has identified practices specifically designed to guide providers on how to use scribes optimally.[15,36]

Summary of Findings

Three primary themes arose from the data. First, it is critical for scribes and providers to communicate effectively. During the clinical encounter, the provider is primarily focused on the patient, but should maintain open communication with the scribe, introduce the scribe to patients at the onset of the encounter, and subsequently verbalize key elements of the history, examination, assessment, and plan aloud for the scribe. Additionally, providers need to give routine feedback and explicitly note if the scribe is meeting the provider's expectations. Second, teamwork between providers and scribes is necessary to develop strong inter-professional cohesion. Providers need to be adaptable and make scribes feel like part of the clinical care team. Third, there are various behaviors providers should adopt. Scribe notes need to be reviewed routinely and soon after completion, particularly because the provider is responsible for all documentation entered into the patient record. Good scribe users accept feedback from scribes, are approachable, and show a willingness to educate scribes about medical concepts. And finally, a level of trust needs to develop between the provider and the scribe for the dyad to be truly effective.

If Practices Are Not Followed

The use of medical scribes will not diminish over time, though it might change as telemedicine increases; if anything, over time, scribe use will continue to grow. Prior research indicates that over-documentation can lead to provider burnout[6–8] and is sometimes suboptimal in quality.[19,24,25] This issue is being magnified by patients now having direct access to their medical records and provider notes, and patients noticing a larger number of errors in documentation.[41] Aside from risks related to poor note quality and content, there are significant opportunities for additional safety events with poor scribe oversight, especially if the scribe role expands beyond pure documentation. By incorporating scribes as members of the health care team, treated as such by the providers, both scribes and providers can benefit from a more informed scribe-user workforce.

Recommendations

We have developed descriptions of ways providers can use scribes optimally. However, future research must focus on developing a training toolkit for scribe users consisting of KSAs or core competencies. While we have recently published these for scribes,[37] to our knowledge, there are no standardized KSAs or competencies for scribe users on how to use scribes effectively to decrease potential unintended consequences and patient risks. Standardized guidelines from an accreditation body need to be developed, and awareness surrounding the importance of standardized guidelines needs to be highlighted.

LIMITATIONS

There are several limitations to this study. While the study used multiple data sets from various sources and included multiple perspectives, the main focus of the overarching purpose of the original parent study was scribes, not providers. As typical of a qualitative study, ours involved purposive sampling from a small, non-randomized sample of individuals. We also were unable to include subjects from rural healthcare organizations. Future research should investigate rural scribe-provider relationships and determine if these practices are appropriate for rural populations as well. Finally, this work focused mostly on the pre-professional model of scribes, and the results may not be fully generalizable to other scribing models employing nurses or medical assistants.

CONCLUSION

We utilized a secondary qualitative analysis methodology to develop themes describing how providers can optimize their use of scribes. This new knowledge could increase provider efficiency and safety and be incorporated into further and future training tools for them.

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Declarations:

Conflict of interest: *The authors declare that they do not have a conflict of interest.*

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