ORIGINAL RESEARCH

Physician, Scribe, and Patient Perspectives on Clinical Scribes in Primary Care

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BACKGROUND: Extending medical assistants and nursing roles to include in-visit documentation is a recent innovation in the age of electronic health records. Despite the use of these clinical scribes, little is known regarding interactions among and perspectives of the involved parties: physicians, clinical scribes, and patients.

OBJECTIVE: The purpose of this project is to describe perspectives of physicians, clinical scribes, and patients regarding clinical scribes in primary care.

DESIGN: We used qualitative content analysis, using Interpretive Description of semi-structured audio-recorded in-person and telephone interviews.

PARTICIPANTS: Participants included 18 physicians and 17 clinical scribes from six healthcare systems, and 36 patients from one healthcare system.

KEY RESULTS: Despite physician concerns regarding terminology within notes, physicians, clinical scribes, and patients perceived more detailed notes because of real-time documentation by scribes. Most patients were comfortable with the scribe's presence and perceived increased attention from their physicians. Clinical scribes also performed more active roles during a patient visit, leading to formation of positive scribe–patient relationships. The resulting shift in workflow, however, led to stress. Our theoretical model for successful physician-scribe teams emphasizes the importance of interpersonal aspects such as communication, mutual respect, and adaptability, as well as system level support such as training and staffing.

CONCLUSIONS: Both interpersonal fit between physician and scribe, and system level support including adequate training, transition time, and staffing support are necessary for successful use of clinical scribes. Future directions for research regarding clinical scribes include study of care continuity, scribe medical knowledge, and scribe burnout.

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INTRODUCTION

Though implementation of electronic health records (EHRs) has been shown to have positive effects in quality and cost of care,[1,2] concerns have arisen regarding the impact of EHR use on patient–physician relationships,[3–5] particularly the computer's negative influence on overall patient centeredness.[3,6,7] Combined with a national shortage of primary care physicians[8–10] and increasing physician burnout,[11] these concerns have sparked efforts to redistribute responsibilities in an expanded primary care team.[12,13] In particular, the role of medical assistants (MAs) and nurses have been expanded to include clinical scribing, also known as team documentation.[14–16]

As clinical scribes, MAs and nurses are hired individually and retain usual duties of gathering information during patient intake, assisting with physician in-baskets, fielding patient phone calls, and performing clinical tasks such as in-office testing and immunizations. To perform the additional documentation duty, they remain in the examination room during the physician–patient encounter and utilize EHR templates to update history, physical exam findings, prescriptions, and necessary orders in real time. In consideration of the heterogeneity of training and work experience among clinical scribes,[14] clinics applying team documentation conduct onsite training that include EHR navigation, clinical shadowing, and continued project management follow-up. Existing studies of clinical scribes are few with data restricted to efficiency[16] and patient–physician face time.[17] They offer little insight into the dynamic interactions and relationships among physician, clinical scribes, and patients. This project thus seeks to fill these gaps through eliciting and describing the perspectives of

physicians, clinical scribes, and patients regarding clinical scribes in the primary care setting.

METHODS

In consideration of the exploratory nature of the study and the limited number of physicians and clinical scribes participating in team documentation, qualitative research methods were chosen to generate broad descriptions and new hypotheses. Semi-structured audio recorded individual interviews were conducted with physicians, clinical scribes, and patients. Interview guides appear in Online Appendix 1, 2, and 3. Recruitment using individual emails included eight health systems that utilize clinical scribes based on a previously published article describing innovations in primary care.[8] At Cleveland Clinic sites, all eligible physicians identified from a project management-provided list were contacted. Snowball sampling was used for scribe recruitment, with invitations sent based on referral by physicians and scribes. At other sites, invitations were made based on referral by site liaisons. Invitations grouped by clinical site were sent out on a rolling basis to accommodate concurrent thematic analysis until data saturation was reached. Patients were recruited and interviewed during a clinic day with the physicians' permission. No incentives were offered for participation. All interviews were conducted individually. Because of geographic constraint, in-person interviews were conducted at Cleveland Clinic sites while telephone interviews were conducted elsewhere. The interview guides did not differ for in-person versus telephone interviews. Patient interviews were conducted only at Cleveland Clinic sites. Interview questions were written to be open-ended with both positive and negative prompts included in an effort to remain objective and to avoid leading questions. Probing questions were scripted based on a broad framework of the interactions of the key players (Fig.1). A single interviewer (C.Y.) obtained informed consent, then conducted and transcribed the audio-recorded interviews verbatim. Thematic analysis using Interpretive Description, involving inductive analytic methods such as data immersion, coding, memoing and constant comparison,[18] was iterative and cyclical. By design, no themes were prospectively identified. Rather, using Interpretive Description, themes were extracted in a bottom-up fashion. This methodology generates practice-relevant findings in context of previously known information and discipline-specific biases. Using NVivo10, the primary coder (C.Y.) reviewed each transcript and coded key quotations. New coding was constantly compared with codes from previous transcripts within an interview group to generate descriptive summary codes. Upon review with a collaborator with extensive experience in qualitative methodologies (M.B.M.), summary codes were discussed and coalesced into broader themes for each study population. When both C.Y. and M.B.M. agreed that no new themes could be generated, data saturation was deemed to be reached. Tables of generated group themes and related quotations for physicians, clinical scribes, and patients were further presented to three physicians (A.M.H., M.R., and K.G.) and one doctorate level health services researcher (S.R.) every three months. These reviewers aided in interpretation of the descriptive themes to generate overarching umbrella themes reflecting overlaps of separate group themes. This research study was approved by the Cleveland Clinic Institutional Review Board.

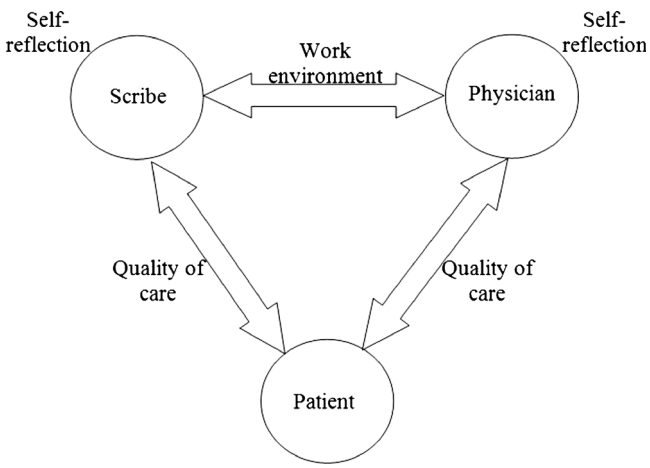

Figure 1. Considerations of interactions in scribing model for questionnaire design

RESULTS

Of eight contacted health systems, physicians and clinical scribes at six systems agreed to participate (Table 1). Interviews were conducted from September 2014 to August 2015. Physician interviews ranged 15–36 minutes, scribe interviews 6–18 minutes, and patient interviews 3–8 minutes. Data saturation was reached at 18 physicians, 17 scribes, and 36 patients. Scribe documentation experience ranged from 0.5 to 8years (average 2.3years). Scribes had clinical experience ranging 3 to 30years (average 12years). Most patients were established patients (31/36) presenting for follow-up (23/36). Length of patient–physician relationship ranged from 0 to 27years (average 7.12years). Qualitative analysis generated three core themes: documentation, patient care, and teamwork.

DOCUMENTATION

Physicians, scribes, and patients agreed that physicians should not be the ones to document. One physician commented that "having doctors scribe is a waste of doctor time. I don't think it meets the concept of everybody working to the top of their license." As another physician explained, "the main thing that physicians should do is make medical decisions and do assessments…we would really like to have physicians primarily doing that instead of busy work." Scribes echoed these sentiments. One noted, "the scribing and doing all this typing…it's really not provider-level." Patients also separated

Table 1. Interview sites

Site	Location	Recruited	Interviews
Cleveland Clinic	Beachwood, OH	3 physicians, 4 scribes	3 physicians, 2 scribes
	Brunswick, OH	2 physicians, 0 scribes	0 physicians, 0 scribes
	Cleveland (main)	1 physician, 1 scribe	0 physicians, 0 scribes
	Solon, OH	3 physicians, 4 scribes	2 physicians, 2 scribes
	Twinsburg, OH	1 physician, 2 scribes	1 physician, 2 scribes
	Strongsville, OH	7 physicians, 4 scribes	3 physicians, 3 scribes
	Willoughby, OH	1 physician, 1 scribe	0 physicians, 0 scribes
	Wooster, OH	4 physicians, 4 scribes	2 physicians, 2 scribes
Bellin Health	Green Bay, WI	1 physician, 1 scribe	1 physician, 1 scribe
Dekalb Medical Health Group	Auborn, IN	2 physicians, 1 scribe	1 physician, 0 scribes
Martin's Point Healthcare	Bangor, ME	2 physicians, 2 scribes	2 physicians, 2 scribes
Quincy Family Practice	Quincy, IL	2 physicians, 2 scribes	1 physician, 1 scribes
University of Utah	South Jordan, UT	2 physicians, 2 scribes	2 physicians, 2 scribes

documentation from the role of a physician. As one patient observed, with the scribe, the physician was "not then doing administrative type things, he's being the doctor."

Perceptions of the resulting quality of documentation were mixed. Real-time documentation led to the perception of improved record details. One scribe noted that without a scribe, physicians were "just making quick little notes, And then, like, at the end of the day, or even 2days later, they're going in and doing their note! And so a lot of things would get missed and the notes aren't very good." Patients also remarked on the delay in documentation. As one patient observed, "the doctor's really busy so by the time he goes back, probably not as much detail in there as with the nurse there typing it in." Some physicians admitted that without a scribe, their notes consisted of just "high points," "brief phrases," or "partial sentences." With the scribe, as one physician summarized, "key components…are recorded in real-time…so I feel like I'm not missing out on any of those details." Both physicians and scribes, however, raised concerns regarding note structure and language. To facilitate documentation, many scribes used pre-designed templates. One physician noticed, however, that "there can be patient scenarios where we don't quite have a template that fits." Another physician added, "you can't really template a human being." Consequently, the scribe may need to go off template. Unfortunately, one physician observed, some scribes are "not so good at free-texting." Scribes admitted to these challenges. "My biggest struggle," one scribe stated, was "I don't know what to type in here, what not to type in here; what's important, what's not important." Another challenge was medical terminology. As one scribe described, "we don't know all the medical terms…that's a big learning curve." A physician shared the following example: "when I say 'swollen glands,' they type 'swollen glands' instead of 'adenopathy'." Consequently, "it does not look like a physician wrote the note unless I correct it." For some physicians, the lack of medical terminology presents a concern because, as one lamented, "the notes are not always exactly what I would want them to be." For others, the difference in the scribes' terminology is more acceptable. One physician asked, "does it really matter if it says that this was erythematous? Is it ok if it says it's red? Yeah. Absolutely. Fine. Same thing." For this physician, "letting go of a little of that helps some of that challenge."

PATIENT CARE

Physicians, scribes, and patients described improved in-visit physician attention to patients. Many patients considered the computer a competitor for the physician's attention. One patient described, "with computers, the concentration is on the computer screen and not on the reactions of the patients." The scribe's presence helped remove the computer as a distraction. One patient declared, "I felt like I was being attended to by a person…I felt more cared for today, than I have [in the past]… I think it matters, when somebody is talking to me and not to a computer." Physicians also noticed a change. One physician noted, "I look at nothing but the patient." Another physician stated, "I'm able to talk directly to the patient, which improves my listening ability, which improves my diagnostic ability, 'cause I'm listening to the story, I'm not looking at a computer." A patient added "there's a lot to be told in an assessment by being able to look at the person," such as "body language." Improved eye contact also allowed physicians to have more meaningful discussions with patients. As one physician shared, "the bulk of the time should really be on the assessment and plan and I really feel like we're having…very effective conversations about that."

Both physician and patients also noted that the clinical scribes performed roles beyond documentation. Through collecting preliminary information gathering during patient intake, for example, scribes also developed relationships with patients. As one scribe revealed "[the patients] know me, they call me by name, they feel like they know more about me, I think." Patients also appreciated that the scribe's consistent presence allowed them to serve as a reminder. One patient gave the following example, "I was asking about…some medicine I was taking…Well, [the scribe] was there, [the scribe] wrote it down, so we didn't forget to ask! I didn't forget to ask!" Another patient added that "sometimes when the doctors come in…you freeze and forget everything," the scribe helped the patient remember. A few patients, however,

did express more hesitation about the scribe's presence. One patient commented that "more invasive checkup…that might be an issue." A male patient noted that because the scribe was female, "maybe sexual, that sort of thing" would be more uncomfortable to discuss. During the encounter, scribes also frequently looked up relevant test results on behalf of the physician. For most patients, this interaction was not disruptive. As one patient described, "[the physician] was able to request, from [the scribe], past history stuff and [the scribe] was able to get it for her… it ran smoothly." Physicians note, however, that the scribes' ability with this task can vary, as one physician described, "some of them are more familiar with how to find things in the chart. I'm sometimes asking for the last thyroid…their last stress test…some of them are just more facile, through experience or training in finding those quickly." Less capable scribes or those just starting out in their role might need to ask the physician for help. As one scribe noted, "[the doctor] might have to help me pull up an X-ray or something like that."

Scribes also played an active role at the end of a visit. As one scribe noted, "patients are not leaving as bewildered as they may have beforehand…they're able to ask those questions at the end of their visits that they didn't understand or, there was so much to absorb, they didn't get everything." A patient echoed this sentiment, "in case the doctor says something and I don't pay attention, because, you know, it's too much going on… [the scribe] explains it to me." One patient noted the combined work of the physician and scribe reinforced that "someone's looking after my health." Another patient declared, "I have a lot of confidence in both of them." Physicians noted an opportunity to decrease errors in communication regarding in-visit tests. As one physician explained, the scribe "was there, they heard me do all that and they can just take over from there. Whereas before I used to have to find a medical assistant and explain everything that I had done… there's a chance I might have forgotten one of the labs I had ordered or didn't tell them every little thing." This flow of information was especially valuable in clinics where the scribe also collected blood work because, as one scribe shared, "you're in the room with them and you already know what needs to be done."

The time demands of scribe in-visit documentation, however, often interfered with tasks outside of visits, leading to concerns regarding follow-up communication and scribe burnout. One scribe shared, "being in the office setting, we are still responsible for all the other things that are required in the office. And because we spend so much of our time *in* the room, with the patient and the doctor, there's just less time to do everything else." Another scribe described, "the paperwork doesn't stop, the telephones don't stop." A physician echoed this concern: "they're so busy doing, working with me full time, that they don't have time to get to the phone calls." Another physician described the situation as more continuity with patients "in the room" but "less continuity outside the room." This potential gap in care presented an important problem because, as one physician realized, "here was this recognition that, for me, as the primary care person, at least half of what I do is not in the visit."

TEAMWORK

For physician and scribes, the working relationship was a partnership requiring contributions from both parties (Fig.2). As one scribe summarized, "adaptability is *huge*…adaptability and trust are two for the biggest things for the physician *and* for the [scribe]." One physician described the working relationship akin to "being on the dance floor with someone who doesn't know the steps." The physician takes on the leading role. A scribe reflected, the physician "led the path and I just kind of like followed in the footsteps." For example, though scribes had templates available, many physicians had their own preferences for physical examination. As one scribe observed, "every provider is just a little different." Consequently, as a physician noted, the scribe had to learn "how you like to organize things and the…progression of the physical exam elements that…you're gonna follow. If they know what's coming up and they're not scrolling up and down looking for places to put information, they're just moving along at the same rate you are." As they led, physicians also learned to adapt their behavior. One physician learned to "call out my findings" on physical exam. A scribe appreciated that the physician was "really good at repeating, if I need something to be repeated," and "spells stuff out." Underlying the partnership was open communication. One scribe reflected, "you have to be open to constructive criticism or feedback from the providers…just being willing to accept that feedback and learn from it." Likewise, physicians learned to elicit questions from their scribes. One physician shared, "I tell them up front, 'I want you to tell me if you don't understand something I'm saying or if you don't understand what, what we need to document'…I would much rather have my staff say, 'I have no idea what you just said' rather than try to document something and not know." Another physician shared, "you have to be willing to listen to your team

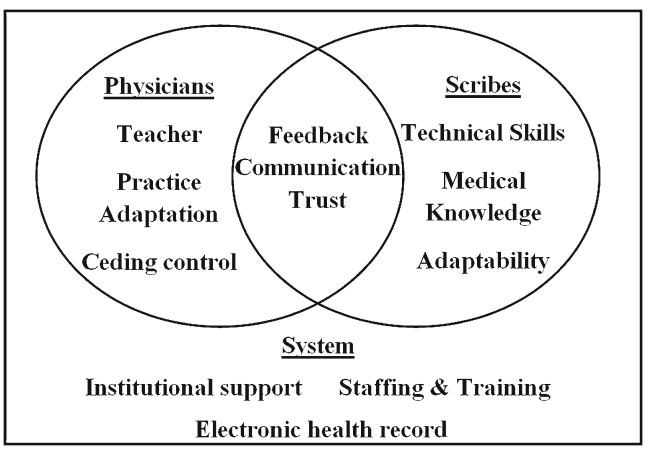

Figure 2. Building a successful team

members. I think that's really key." For physicians and scribes, the ability to depend on each other also derived from combined reflection. As one scribe described, "the biggest thing was probably having [the physician] say, 'this isn't working.' Or even us saying, 'this isn't working, we need to figure something else out' and we'll come up with some sort of solution." A physician further emphasized the importance of mutual feedback, "we've got to work as a team and let's figure out what works best together. Let's work out what's best for patient care."

Physicians and scribes also described other challenges of implementing and sustaining clinical scribes. One physician described initial frustration that "despite over 3years of expressed interest even from changing leadership, no one seems willing to actually pull the trigger." Another physician noted that a philosophical change may play a role, "part of it is just that doctors don't like change. It's really tough. And actually, more doctors have trouble giving up some control." Specifically, one physician described initial hesitations, "do I trust them in the room? Are they going to put it in properly? I'm kinda OCD in terms of getting things done. I think most doctors are." A scribe echoed these sentiments, "the hardest part for them is… the providers really letting go of that control of what and how everything is being entered into the office visit…trust…that we're gonna do the right thing, and type the right thing, and get everything the way they need it to be." Physician-scribe interactions also shifted to one of teacher-student. As one scribe described, "[the doctor]'s also teaching us…also educating us as well as…on why this patient could have gotten this." Another shared that she was "learning about the diseases and what to do for them, and all the medications, and things like that…" One physician reflected, "our clinical support kind of become our, our, uh, medical students with which we can train them about heart failure and diabetes and this way we're answering a lot more questions and teaching." These interactions, however, did not occur overnight. Thus, as one physician noted, institutions had to "make sure that they're giving the trial a sufficient amount of time and support." Even after teams were established, maintaining adequate staffing could be a challenge. One clinic had trouble because "we seem to be chronically short of medical assistants." This inconsistency was detrimental because, as one physician described, the scribing is "not that comfortable if you don't do it every time." At another clinic, successful scribes "don't stick around very long. Usually they go on to nursing school, become PAs, or even sometimes go to medical school."

DISCUSSION

To our knowledge, this is the first study to examine in parallel the perspectives of physicians, clinical scribes, and patients regarding clinical scribes in primary care. We found that clinical scribes played a more active role not only in documentation, but also patient care. Perception of improved note completeness agreed with an existing study demonstrating that clinical scribe notes were more up-to-date, thorough, useful, and comprehensible.[19] Within a patient visit, clinical scribes also helped remove distraction of the computer and led to a perception of improved physician–patient interactions from all three groups. These findings challenge concerns of disruptive effects of scribes.[20] Scribes also directly interfaced with patients, leading patients to use scribes not only for in-visit reminders, but also post-visit explanations. While the scribe's presence during the visit led to perceived improvements in communication of visit-related procedures, the patient–scribe relationship meant that physicians not only had to trust scribes to document correctly, but also provide medically correct information. Though both physicians and scribes mentioned physician teaching of medical knowledge, an important area for future research is thus the level of clinical knowledge necessary for clinical scribes. The scribes' more active role during visits also shifted time away from managing patient phone calls or messages. This shift raises questions regarding post-visit continuity of care. Scribes also admitted that this workflow change represented a source of stress. While previous research demonstrated that a collaborative environment correlates with improved staff exhaustion,[21] it may not be enough to offset the stress from increased duties. The actual effect on scribe burnout is thus another area for further investigation.

Our study also demonstrates the importance of fit and sustained pairing between physician and scribe. Teamwork is a rising trend in primary care,[22–24] and our study revealed important details of interpersonal interactions. While scribes still expected physicians to lead, they also appreciated having opinions heard and considered. Likewise, physicians expected their scribes actively to express their opinions. This atmosphere of mutual respect and open communication not only depends on individual willingness, but also took time to build. Staff turnover presented an obstacle for the building of such relationships. Not only must individuals retrain to fit together, systems must consider their capability to rehire and restrain new scribes.

Limitations

Our study used rigorous qualitative methods. However, as with any methodological approaches, there are inherent limitations. In this study, though we reached data saturation and included different national sites, the sample remained small, thus affecting its generalizability. The perspectives described may also be skewed as all study participants were volunteers and all physicians and scribes interviewed have also chosen to continue using team documentation. While some physicians and scribes worked together, not all were part of the same team, which may limit exploration of team dynamics. Most patients had established relationships with their physician and may have acclimated to the clinical scribe. The short length of experience of the clinical teams also offered a more short-term look at the clinical scribe model. Given that our study does not focus on quantitative analysis of actual note completeness, note accuracy, patient outcome measures, or practice efficiency, future studies are needed to address such limitations.

CONCLUSION

This study presents the first simultaneous descriptions of the perspectives of physicians, clinical scribes, and patients regarding clinical scribes in primary care. It revealed a more active role of clinical scribes during in-visit patient care that led to perceived improved documentation quality, but also possible encroachment on follow-up care. The right personal and skills-based fit between physician and scribe and staff continuity are both necessary for sustainable partnerships. Application of clinical scribes should thus be based on careful consideration of provider-specific and clinic-specific needs and capabilities, as well as patient preferences. Future directions for research regarding clinical scribes include study of care continuity, scribe medical knowledge, and scribe burnout.

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Ms. Chen Yan, Drs. Anita D. Misra-Hebert and Michael B. Rothberg made substantial contributions to logistical planning and recruitment.
Ms. Chen Yan and Ms. Mary Beth Mercer had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

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