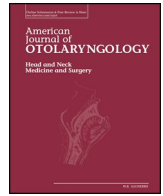




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Virtual scribing within otolaryngology during the COVID-19 pandemic and beyond

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ABSTRACT

Within otolaryngology, scribes have been utilized as a means of increasing clinic efficiency and easing workload on physicians. During the COVID-19 pandemic, a majority of otolaryngology clinic appointments at academic institutions have been moved to telemedicine in order to limit interpersonal contacts. At the height of the pandemic, our institution has protocolized scribe participation from in-person to remote. Scribes have virtually participated in telemedicine appointments in an effort to facilitate documentation and enhance the patient-physician relationship. Beyond the pandemic, as patients start being evaluated in-person, the risk of contamination and spread through aerosol generating procedures has limited the number of ancillary support staff that can be present in the examination rooms. As such, virtual scribing from a separate location within the clinic has been deemed warranted. This paper documents the protocols on virtual scribing for both telemedicine and a hybrid approach for in-clinic appointments where high-risk procedures are being performed.

1. Discussion

The effects of the COVID-19 pandemic on the field of otolaryngology have been substantial, affecting all areas of patient care including ancillary support. Prior to the pandemic, in 2014, there were approximately 10,000 scribes nationwide represented in all surgical and medical fields [1]. These numbers speak to the usefulness of scribes in a clinical setting. In a study done in a safety net hospital in Minnesota, scribes were implemented throughout the institution and scribe support was well received in multiple clinical settings. Benefits for providers were seen in documentation time and ability to listen to patients [2]. At our institution within the field of otolaryngology, scribes have been used for years, and have been demonstrated to improve the clinic workflow without impairing patient satisfaction [3]. However, during the COVID-19 pandemic clinical volume has decreased dramatically, and practicing otolaryngologists have embraced alternative virtual methods to continue providing for their patients. There has been a shift in clinical practice into telemedicine whenever possible, and thus in-person scribe involvement, and the benefits they provide, in many clinical scenarios has ceased [4].

In our institution, a method of incorporating virtual scribe participation into outpatient telemedicine clinics was implemented. Through

trial and error, we created an effective protocol to allow for scribe participation in telehealth allowing otolaryngologists more time focused on conversing with patients, all while enhancing efficiency. This protocol for scribe participation in telemedicine appointments is described in Fig. 1.

However, at the time of this writing as the number of COVID-19 cases decrease, there has been a ramp-up in in-person clinic appointments which poses certain challenges. Multiple studies have been published evaluating the risks of generating contaminating aerosols by manipulating sinonasal mucosa in the setting of the COVID-19 [5,6]. As such, it is in the best interest of otolaryngologists to reduce the number of professionals, including scribes, in the room during aerosol generating procedures. In order to continue to benefit from the efforts of scribes in the otolaryngology clinic during the pandemic, we have devised a protocol for virtual scribing, in which the scribe is in a separate location of clinic for the appointments that would involve aerosol generating procedures. This protocol is described in Fig. 2. We suggest this hybrid approach of virtual scribing, in which scribes are present in a different area of clinic, and scribe remotely for these types of appointments. During all other non-aerosol-generating patient interactions, the scribe can attend in-person.

Scribes have been involved in clinical activities within the field of

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- **Required Materials:**
 - Both the scribe and the otolaryngologist should have access to a laptop/desktop with access to electronic medical record software and a cell phone and/or tablet for contacting patients and the otolaryngologist, as below.
 - Scribes should dress professionally.
- **Prior to Appointment:**
 - Call patient directly either from 1) Cell phone using *67 to block caller ID, or 2) HIPAA compliant cell phone app (e.g. Doximity Dialer) to ensure clinic line comes up as caller ID.⁵
 - Obtain patient's consent in having a scribe present for their telemedicine appointment and ask whether the patient would like to continue via telephone or video conference.
- **If the patient selects via video conference:**
 - Provide the patient with instructions on how to join the otolaryngologist's secure video conference.
 - Do not hang up until the patient has entered that video conference.
 - Once the patient is in the video conference with the attending, the scribe can then join the video conference.
 - The scribe can mute themselves on the phone call in order to not be disruptive.
 - The scribe can complete the documentation as the attending proceeds with the telemedicine appointment with the patient.
- **If the patient decides to continue via telephone:**
 - Ask the patient to wait while the scribe adds the attending to the conversation via three-way phone conference.
 - The scribe can mute themselves on the phone call in order to not be disruptive.
 - The attending can begin the telemedicine appointment with the patient while the scribe listens and completes the documentation of the appointment.
- **After the appointment:**
 - Once the patient disconnects from the video conference or hangs up on the phone, the otolaryngologist and scribe can continue to communicate and finalize the plan for documentation prior to moving on to the next patient.

Fig. 1. Virtual scribing during otolaryngology telemedicine appointments. A Scribe's perspective.

otolaryngology for a number of years at our institution. At the height of the COVID-19 pandemic, because of these protocols, scribes have been able to provide valuable services to our clinics remotely, assisting in providing effective clinical care for practicing otolaryngologists during telemedicine appointments. However more recently, as the clinical ramp-up continues, the number of classical in-person clinic appointments will start to rise. Given the risks of aerosol-generating procedures, otolaryngologist and scribes have found the hybrid approach to virtual scribing an effective experience for safe patient care while continuing to improve clinic efficiency. While prior studies have supported the value of virtual scribing, this is the first publication providing logistical details on how to implement virtual scribing in the field of otolaryngology [7]. With these guidelines and recommendations, scribes within otolaryngology can continue to engage with practicing otolaryngologists in various clinical scenarios and provide documentation support in a safe and effective manner.

2. Conclusion

Scribes have had a positive impact in the field of medicine and otolaryngology by improving clinic efficiency and enhancing physician patient relationships. However, during the COVID-19 Pandemic, many otolaryngology clinics turned to virtual methods to continue seeing their patients. Beyond the COVID-19 pandemic, the risk of aerosol

generating procedures will undoubtedly limit the presence of ancillary staff in the examination rooms for the near future. Here we present protocols for scribes to engage with otolaryngologists via telehealth, as well as virtually during in-clinic appointments when high-risk procedures are being performed.

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Author contributions

Renee Noordzij: Conceptualization, Methodology, Roles/Writing - original draft; Writing - review & editing.

Michal J. Plocienniczak M.D. M.S.: Roles/Writing - original draft; Writing - review & editing Christopher Brook, M.D.: Roles/Writing - original draft; Writing - review & editing.

Declaration of competing interest

All authors declare they have no financial, consultant, institutional, or other relationships that may lead to a bias or conflict of interest.

- **Required Materials:**
 - Otolaryngologist should use a cell phone with video chat capabilities which they will take into appointments with them.
 - Scribe needs a laptop/desktop with access to electronic medical record software and a cell phone with video chat capabilities.
 - Alternatively, clinics can have a dedicated tablet for video chatting with the scribe to bring into appointments.
 - Scribe to find private designated location within clinic to communicate with the otolaryngologist.
- **Prior to Clinic:**
 - Communicate with the otolaryngologist prior to appointment regarding preferred mode of communication (Phone vs. Video Conference).
 - Scribe to dress professionally.
- **Prior to Appointment:**
 - Otolaryngologist and scribe can set-up video conference meeting via through their phones/tablets.
 - Otolaryngologist walks into patient room with their phone/tablet.
- **During the Appointment:**
 - The otolaryngologist introduces themselves and also the scribe and their purpose on the phone/tablet and places the phone/tablet on the desk facing the patient.
 - The scribe can introduce themselves to the patient and the otolaryngologist can obtain the patient's consent on having the scribe present.
 - The scribe can mute themselves on the phone call in order to not be disruptive.
 - As the appointment proceeds, the scribe listens and sees through the video chart while completing the documentation.
- **After the Appointment:**
 - Scribe completes the documentation.
 - Otolaryngologist wraps up appointment and continues to see other patients as above.

Fig. 2. Virtual scribing during otolaryngology in-person clinic appointments involving aerosol-generating procedures.

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