

Introduction

- During the COVID-19 pandemic, otolaryngologists adopted telemedicine to prevent disease spread.
- Telemedicine provided additional benefits:
 - Expanded access to care
 - Reduced costs
 - Saved time
 - Decreased travel
- Some argue for limited telemedicine use post-pandemic, but our Department of Otolaryngology – Head and Neck Surgery maintains a thriving telemedicine practice.
 - Over 1,000 unique patients received virtual care in 2022.

Objective

- To perform an internal review of telehealth at our institution with the goal of providing commentary on our experience and ways in which telemedicine can be integrated into practice as its use transitions from necessity to convenience.

Methods

- **Study Design:** Retrospective qualitative review of clinic notes
- Examined the top fifteen diagnoses via telehealth from **January 2020 to May 2022**
- Analyzed 30 telemedicine visits and 10 in-person visits for each diagnosis
- Total of **450 unique telemedicine visits** and **150 in-person visits** for comparison
- Reviewed data, including **physical exam findings, technology utilization** (for telemedicine), and **in-person aspects**
- Assessed and documented **assessment/plan** for each case
- Utilized clinical insight and experience to reach a **consensus on telemedicine's utility** in different settings

Continuing to offer telemedicine is important to improve access and satisfaction, and can lead to top-level quality of care for patients with otolaryngologic conditions.

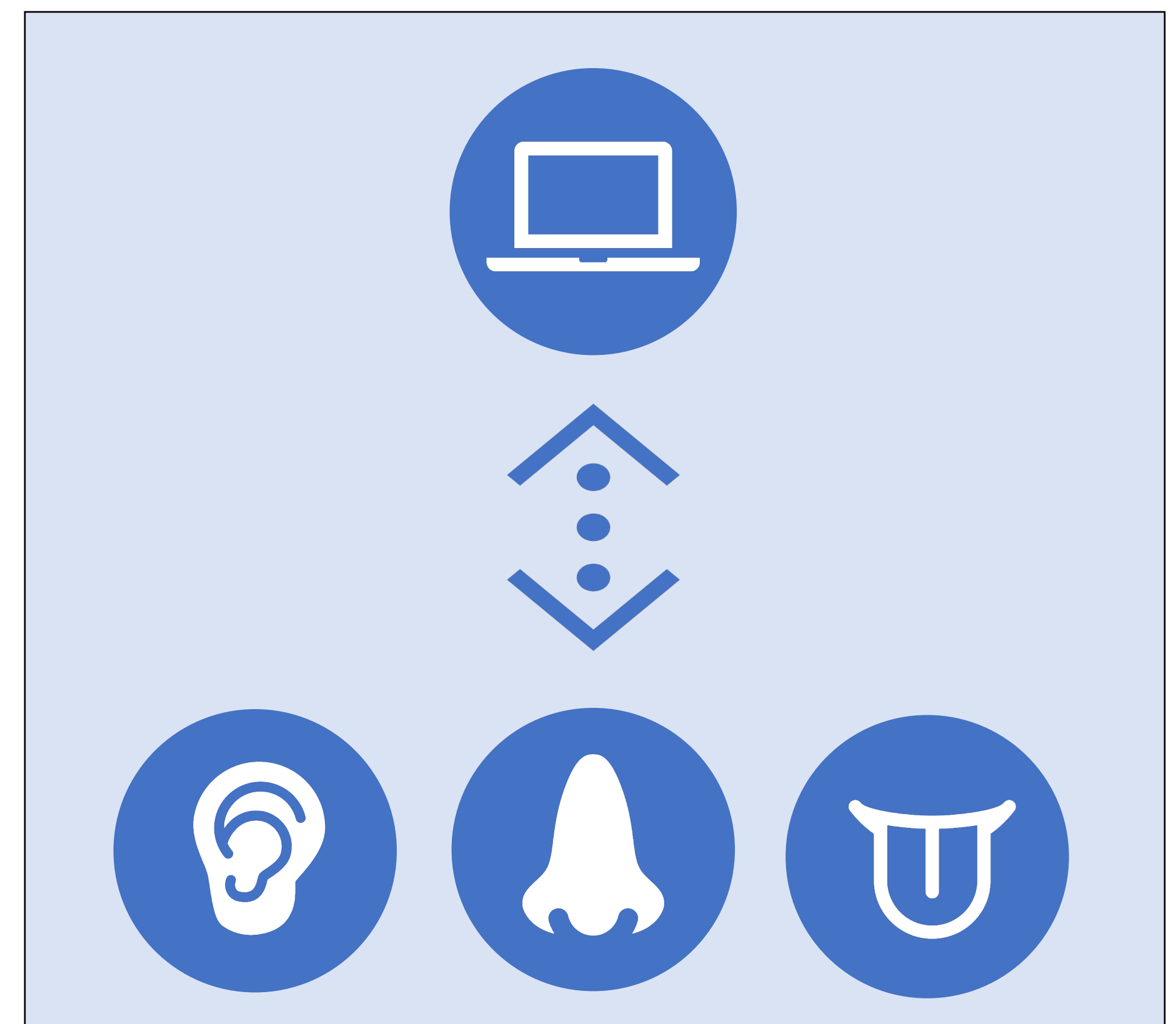
Results

- **Ideal clinical scenario for telemedicine:**
 - Physical exam feasible via video camera or not essential for clinical management
- **Suitable patient populations:**
 - New consultations for sleep disordered breathing in children
 - Recurrent tonsillitis
 - Chronic sinusitis, Chronic rhinitis, Nasal congestion
 - Epistaxis
 - Post-operative tonsillectomy and adenoidectomy visits
 - Laceration repair follow-ups in pediatric and adult populations
 - Consistent management observed across office-based and telehealth in these settings
- **Unsuitable scenarios for telehealth include:**
 - Otolaryngology referrals
 - Stridor/airway referrals
 - Oncology referrals
 - Post-operative follow-ups for septorhinoplasty, sinus surgeries, and head and neck oncological surgeries
 - Patients requiring outpatient procedures like flexible laryngoscopy

Conclusions

- The primary limitation of telehealth lies in the physical exam.
- However, our experience suggests that an in-person physical exam may not always be necessary in specific situations. Consequently, we strongly endorse the use of telemedicine in suitable patient cases.

Diagnoses	Physical Exam	Assessment and Plan	Utility of Telehealth/Recommendation
Sleep-Disordered Breathing, OSA, Recurrent Tonsillitis	<ul style="list-style-type: none"> • Successful oral cavity exam and tonsil size determination via video for most patients. • Occasional limitations observed when compared to in-person exams. 	<ul style="list-style-type: none"> • Children under 2 years old or with comorbidities (Down syndrome, obesity, craniofacial abnormalities) for sleep disordered breathing follow American Academy of Otolaryngology Practice Guidelines for Tonsillectomy, with polysomnography offered prior to surgery. • Sleep study results were reviewed and ordered as needed, regardless of whether the visit was conducted via telemedicine or in-person. • Patients with chronic tonsillitis had their treatment plan determined by the frequency of throat infections, following guidelines, and considering tonsillectomy +/- adenoidectomy when appropriate. 	<ul style="list-style-type: none"> • Pediatric patients with adenotonsillar hypertrophy/chronic tonsillitis effectively utilized telehealth. • Telehealth visits covered various stages of diagnosis, management, and post-surgical follow-up, leading to similar care plans as in-person visits.
Chronic Rhinitis, Chronic Sinusitis, Nasal Congestion	<ul style="list-style-type: none"> • Telehealth exams covered general appearance, work of breathing, external nasal anatomy, and valve collapse (including Cottle maneuver). • In-person exams typically included anterior rhinoscopy and occasional nasal endoscopy, revealing findings such as hypertrophic inferior turbinates, septal deviation, polyps, and septal perforations. 	<ul style="list-style-type: none"> • Treatment plans, irrespective of visit type, typically incorporated: <ul style="list-style-type: none"> • Moisture therapy • Nasal saline • Steroid sprays • Antihistamines • Occasional recommendations included CT scans for further evaluation, as needed. 	<ul style="list-style-type: none"> • In-person visits offered a more comprehensive physical exam but did not alter management for chronic rhinitis or sinusitis patients. • Telehealth can be employed without compromising the care of these patients, as the management remains consistent.
Epistaxis	<ul style="list-style-type: none"> • Telehealth visit examinations were limited to external nasal visualization, with occasional crusting noted, often documented as unremarkable. • Conversely, in-person exams included anterior rhinoscopy and occasional nasal endoscopy, revealing findings such as dry mucosa, crusting, superficial vessels, enlarged/erythematous turbinates, septal perforations, and septal spurs. 	<ul style="list-style-type: none"> • Many epistaxis patients lacked prior moisture therapy counseling before nasal cautery consultation. • Consistent plans, irrespective of visit type or exam findings, included moisture therapy recommendations, sometimes with emollient/spray. • In cases of heavy bleeding, Afrin was advised, with potential consideration for nasal cautery if no improvement occurred. 	<ul style="list-style-type: none"> • In-person visits included a more comprehensive internal nasal exam but did not impact the management of these patients. • Consequently, telehealth can be provided as an alternative to in-person visits without compromising patient care.
Post-Surgical/Laceration Repair Follow-Ups	<ul style="list-style-type: none"> • Post-surgical telehealth follow-ups involved incision and external anatomy visualization, with phone camera attempts for oral cavity/oropharynx in relevant cases. • In-person patients received a more extensive exam, often involving palpation of the oral cavity and neck, or flexible laryngoscopy if necessary. 	<ul style="list-style-type: none"> • Virtual follow-up patients were offered additional follow-up as needed, mirroring in-office care. • The use of absorbable sutures allowed for wound assessment and guidance on wound management from the comfort of home. 	<ul style="list-style-type: none"> • Surgical follow-ups, including post-tonsillectomy, adenoidectomy, or laceration repairs, can be efficiently conducted through telemedicine. • Patients in need of outpatient procedures, like flexible laryngoscopy, should be scheduled for in-clinic consultations.



References:

1. Levi J, Yu V, Cheung A, Overdeest J, Hildrew D. Tele-otolaryngology: through the pandemic, and beyond-interim findings of the study of telehealth in otolaryngology. *Bull Off Memb Mag Am Acad Otolaryngol Head Neck Surg*. Published online 2021. <https://bulletin.entnet.org/ao-hnsf-2021/article/21403362/teleotolaryngology-through-the-pandemic-and-beyond-interim-findings-of-the-study-of-telehealth-in-otolaryngology>
2. Samarra R, Riccardi AC, Tessema B, Setzen M, Brown SM. Continuation of telemedicine in otolaryngology post-COVID-19: Applications by subspecialty. *Am J Otolaryngol*. 2021;42(3):102928. doi:10.1016/j.amjoto.2021.102928
3. Riley PE, Fischer JL, Nagy RE, et al. Patient and Provider Satisfaction With Telemedicine in Otolaryngology. *OTO Open*. 2021;5(1):2473974X2098183. doi:10.1177/2473974X20981838
4. Ning AY, Cabrera CI, D'Anza B. Telemedicine in Otolaryngology: A Systematic Review of Image Quality, Diagnostic Concordance, and Patient and Provider Satisfaction. *Ann Otol Rhinol Laryngol*. 2021;130(2):195-204. doi:10.1177/0003489420939590
5. Ohlstein JF, Ahmed OG, Garner J, Takashima M. Telemedicine in Otolaryngology in the COVID-19 Era: A Year Out. *Cureus*. Published online December 29, 2021. doi:10.7759/cureus.20794