

Successful Telemedicine Programs in Otolaryngology

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KEYWORDS

• Telemedicine • Teleconsultation • Telehealth • Otolaryngology
• Otoscopy • Alaska telemedicine • Queensland telemedicine

Telemedicine refers to the use of telecommunications technology to provide remote access to medical diagnosis and patient care. As technology has improved and the costs of using that technology have decreased, the promise of telemedicine and its potential to enhance the quality of care, improve efficiency, and reduce costs has grown significantly. The use of the Digital Imaging and Communications in Medicine (DICOM) imaging standard in radiology, for example, led to the widespread adoption of a telemedical approach to radiologic imaging and interpretation that has now become the standard of care. Historically, radiology, dermatology, psychiatry, and cardiology account for the most widespread use of telemedicine in the United States, but otolaryngology remains uniquely suited to the use of telemedicine. In addition to patient history and physical examination, many otolaryngologic diagnoses reflect information obtained from objective sources, such as tympanograms, audiometry, and telescopic and diagnostic imaging. These sources can be easily transmitted to allow for remote interpretation. Like many medical specialists, otolaryngologists are usually found in urban settings, making access to specialty care in remote and rural settings challenging. One promising use of telemedicine involves providing care to rural settings that would otherwise be difficult to provide in person, and this is a particular need that telemedicine is uniquely positioned to provide for.

TELEMEDICINE: STORE AND FORWARD VERSUS LIVE FEEDS

Telemedicine consultations commonly take one of 2 forms:

1. Live and interactive
2. Delayed

The authors have nothing to disclose.

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The live and interactive method is intuitively appealing because it most closely approximates a real-life patient encounter; however, the use of a live consultation requires a level of coordination between the patient, referring physician, and specialist physician that makes this method of teleconsultation both more expensive and more challenging logistically.

The second form of telemedicine consultation is commonly known as store and forward. This involves the referring physician collecting and forwarding all of the relevant patient information, including history and imaging, to the consulting physician who then can review the data at a later time. One advantage of this type of consultation is that it does not require the physical presence of the referring physician or the patient (**Fig. 1**).

In 1997, Sclafani and colleagues¹ at the New York Eye and Ear Infirmary presented a study at the annual meeting of the American Academy of Otolaryngology - Head and Neck Surgery investigating the use of live and store-and-forward telemedicine in their otolaryngology practice. Patients were interviewed by a chief resident in otolaryngology who performed a relevant physical exam and flexible fiberoptic nasopharyngolaryngoscopy and who then presented his findings to 2 people: a locally available otolaryngologist and a remote otolaryngologist. Both the local and remote otolaryngologists were able to observe the interaction as well as a fiberoptic nasopharyngolaryngoscopy and to direct the chief resident. Afterward, another otolaryngologist, who was not present for the live encounter, was asked to review the electronic patient



Fig. 1. A telemedicine cart used to collect information during a patient encounter for later review by a remote otolaryngologist using store-and-forward telemedicine. (Image *Courtesy of the Alaska Native Tribal Health Consortium, Anchorage (AK); with permission.*)

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