

## Chapter 3.5

# Tele–Audiology in the United States: Past, Present, and Future

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### ABSTRACT

The incorporation of telehealth into the daily clinical practice of audiologists in the United States is in its early stages of development. Some initial research has been conducted in order to validate the use of telehealth technologies in providing hearing and balance evaluation and management services (Krumm, Huffman, Dick, & Klich, 2008; Krumm, Ribera, & Klich, 2007; Krumm, Ribera, & Schmiedge, 2005; Lancaster, Krumm, & Ribera, 2008). More research is needed. This chapter suggests possible applications using existing

technology and explores the possibility of virtual audiology clinics nation-wide and internationally.

*Whatever the mind of man can conceive and believe, it can achieve—Napoleon Hill*

### INTRODUCTION

The above quote seems at the root of much of the technological revolution we are experiencing today. This is the stuff of which dreams are made as well as the inspiration for avant-guard thinking such as science-fiction. Who would have imagined 50 years ago that we would someday

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talk into little plastic boxes without wires and communicate with someone hundreds of miles away? It is thrilling to stand on the threshold of progress with the hopes of adapting modern and future technology to improve the quality of life for countless patients in need of medical evaluation and treatment.

As an audiologist I have given much thought to how technology can be inculcated into healthcare delivery systems for patients with hearing and or balance disorders. Most audiology healthcare providers are located in metropolitan and urban areas where population is denser and where there is access to a continuum of healthcare providers and services (ASHA, 2006). However, it is interesting to note that the prevalence of hearing impairment is greater in rural areas (Holt, Hotto, & Cole, 1994). Projections are that audiologists will be in demand for the foreseeable future (Bureau of Labor Statistics, 2008) with an estimated increase of 10% over the next six years. As patients tend to have a longer life expectancy than in the past, there will be an increasing need for audiological services. As universal newborn hearing screening compliance increases there will be additional requirements for pediatric audiologists with specialized training in evaluating and managing children with hearing disorders.

Telehealth/telemedicine seems to possess inherent capabilities of delivering hearing healthcare to remote areas or underserved populations. This chapter will address the history of telemedicine in the United States, recent research in the application of telehealth in audiology, challenges to be overcome, and what the future may hold.

## **BACKGROUND**

### **Benefits**

It seems almost intuitive that there are advantages to providing healthcare at a distance by a) filling a void in healthcare delivery to remote geographic

regions, b) expanding access to essential medical services, c) reducing practitioner and/or patient travel time, d) reducing of cost in providing healthcare, d) expanding the dissemination of medical information to patients, e) and enhanced interaction (counseling and consultations) among healthcare providers and between clinicians and patients, to mention only a few.

Another possible benefit from telehealth technology is in support of the international movement to “go green” meaning to be more environmentally friendly and responsible about the carbon footprint we are leaving and to be more conscious of how we manage natural resources. Going green through telehealth seems to be a natural outcome. Use of existing and future technology will allow providers to reduce the amount of paper used, as well as the need for travel resulting in less consumption of fossil fuels. This might be a welcome by-product of adopting telehealth in general and tele-audiology specifically.

Telehealth delivery in audiology is truly in its infancy. There has been reticence on the part of audiologists to adopt this expansion of their scope of practice. There are several possible reasons for a delay in incorporating telehealth as part of the delivery model used by audiologists a) unfamiliarity with the technology, b) lack of confidence in outcomes, c) initial upfront cost for equipment and connectivity, d) training, e) licensure issues, f) reimbursement issues, g) paucity of validation studies, h) lack of standardization, i) safety and security issues, and j) patient acceptance/satisfaction. The challenge for pioneers in this area is to overcome the inertia and develop this delivery system more widely. There is need for more data to validate telehealth technology in audiology. The author invites colleagues from around the world to begin investigating how telehealth can be integrated into the audiologist’s practice.

The Alaska Federal Healthcare Access Network (AFHCAN) has been providing audiological services via store and forward digital scans and high resolution images with ear, nose, throat (ENT)

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