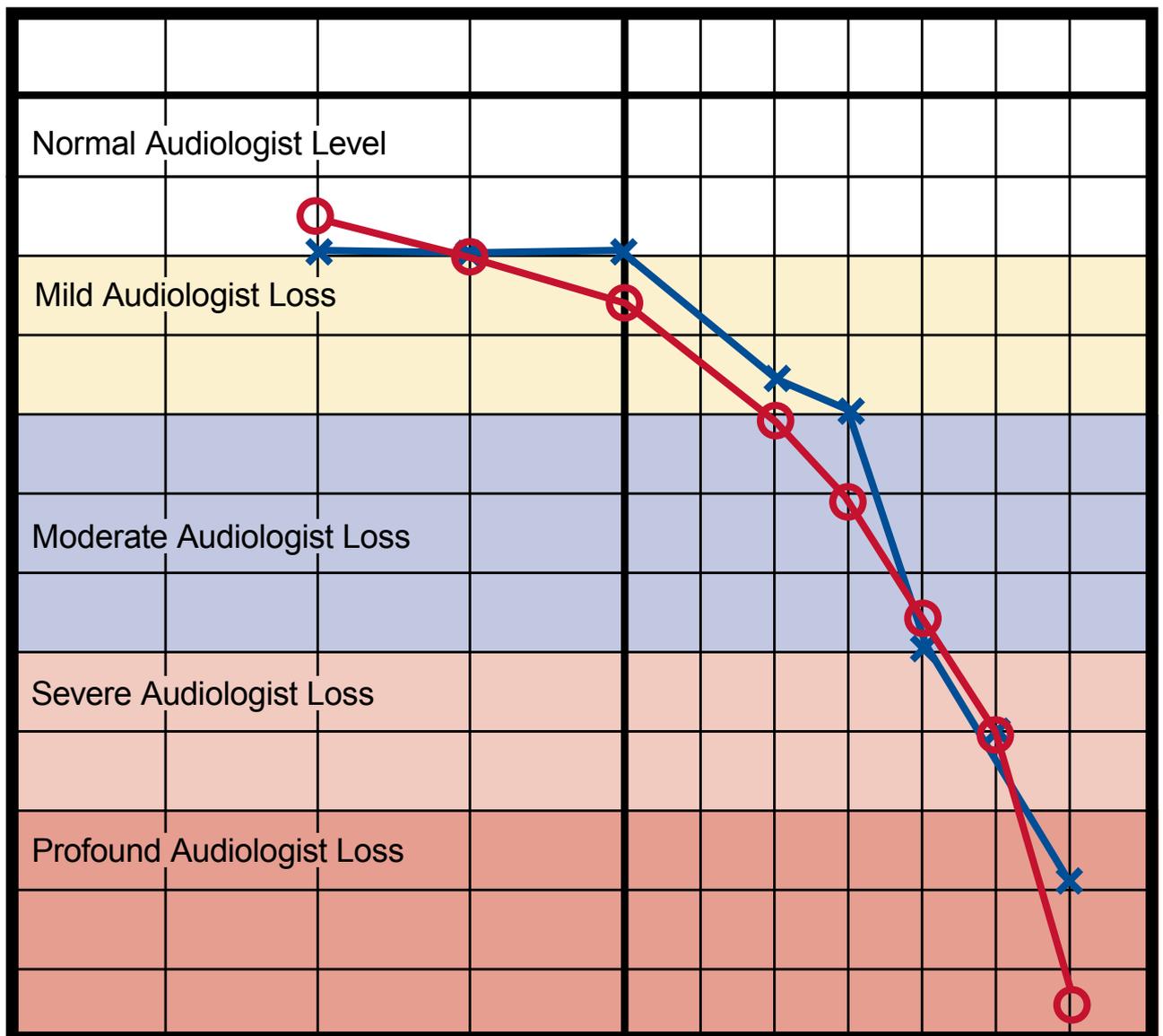


The Coming **CRISIS** in Audiology

BY BARRY A. FREEMAN



A shortfall in the number of audiologists is predicted to occur in the not-so-distant future. If we do not address this impending crisis, any gaps in care will be filled by alternatives outside the profession.

If you were to read the prospectus of a company seeking venture capital to enter the hearing health-care field, you would find that only about 8 million persons in the United States own hearing aids out of more than 30 million persons with hearing loss. You would sense the anticipation expressed in the prospectus for the potential revenue that might be generated by this huge unmet need of potential purchasers of hearing aids. Of course most, if not all, of these companies believe that they have the magic bullet to meet the needs of the more than 30 million who could benefit from wearing hearing aids.

Yet the brutal fact is that even in countries where hearing aids are provided at no cost to the majority of citizens (e.g., United Kingdom, Denmark, and Australia), market penetration for hearing aids does not exceed 40 percent of the potential users. It is not surprising, then, to read literature (Edwards, 2006; Amlani, 2009) that suggests the estimated actual maximum market potential for hearing aids in the United States is closer to 12–14 million persons, or 35–40 percent of persons with hearing loss, not the more than 30 million that often is cited. In fact, it is likely that currently we may be successfully penetrating 60–65 percent of the U.S. market potential. This is not to say that the remaining persons with hearing loss do not need audiologic services. In fact, this group of persons with hearing loss and no hearing aids would benefit from counseling, assistive technology, auditory training, and

many other audiology intervention and management services.

It is acknowledged by many that the number of persons seeking our services will, indeed, increase in the next several decades due to improved identification and awareness and the aging population. Our challenge as hearing health-care professionals is to assure that there will be an adequate number of qualified providers to identify and evaluate persons with hearing loss and provide intervention services, including hearing aid technology for the growing number of persons with hearing- and auditory-related problems in the coming decades. If we do not meet this demand, then it is possible that other health-care providers (e.g., physician assistants, nurse practitioners, etc.) will step up and take over a portion of our scope of practice, or perhaps some new delivery system will be adopted to manage the high demand for hearing and hearing-related services. Already, in other areas of health care, we have seen the introduction of disruptive innovation in the form of convenient care clinics (Kenagy and Christensen, 2002). These are menu-driven clinics at stores like CVS and Walgreens that are staffed by nurse practitioners who deliver cost-effective care to an estimated 10 million persons annually. You can imagine that a convenient-care hearing services model might utilize a hearing health-care kiosk with automatic hearing tests and easy-to-fit hearing aids (Mehrotra, 2009).

As audiologists, we must reinforce the need for qualified practitioners who maintain high practice standards in the delivery of hearing health care to avert the impact of lower quality health-care service delivery innovations.

Consumers of Hearing Health Care

Hamlin (2009) published a "Consumer Checklist for Purchasing a Hearing Aid," which outlined steps to a successful hearing aid fitting. The checklist identified numerous factors, including a comprehensive hearing examination, assessment of handicap and lifestyle, validation and verification of the fitting, as well as information on the dispensed product such as warranties and technology features. The Hearing Industries Association (HIA) released the results of a survey of 890 respondents with hearing loss on the "Top Ten Reasons for Hearing Aid Delight" (Hearing Industries Association, 2007). Consumers identified factors such as the professionalism of the provider, counseling, verification and validation, and the qualifications and expertise of the hearing health-care provider as critical to patient

"delight" with their amplification devices. When comparing the HIA study to the recent report from *Consumer Reports* (2009), there was strong agreement that (1) hearing aids can help patients "hear well;" (2) that while there are an array of options available to access hearing health care, the marketplace was "fragmented and confusing;" and (3) the key factor to success with amplification was related to the "qualifications and competence of the provider." Common to these studies was the lack of identification of product cost as a leading factor in patient success with their hearing aids. Again, it is important to note that the key factor to success with hearing aids was reported to be the qualifications and competence of the provider. We should acknowledge this finding in our practice patterns, recognizing that our focus should be on the highest quality provision of our professional services. With these facts in mind, then, the key question for the future remains whether there will be enough clinical practitioners to meet the anticipated growth in demand for hearing health-care services in the coming decades.

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Company Profile

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Practitioner Demographics

A survey of all audiology and hearing instrument specialist state license boards in the United States was completed to determine the number of active license holders in 2009 (Freeman, 2009). While TABLE 1 suggests that there are approximately 32,000 licensed providers, the number appears to be an overestimate of individual providers. The case in point is that in 16 states, audiologists are also required to be licensed hearing aid dispensers. It would be a conservative estimate to say that 50 percent of the active licensees in those 16 states are, in fact, audiologists. For example, in California, 52 percent of the 1,764 hearing

aid dispensers also are licensed audiologists. Therefore, the adjusted number of active licensed dispensers in the United States is estimated to be 10,616. In addition, it may be estimated that approximately 10 percent of licensed dispensers also hold an active license in a second state. That is, some dispensers who live near state border areas may be licensed in more than one state—leaving an estimated 9,050 hearing instrument specialists in the United States as shown in TABLE 2.

The data in TABLE 3 suggest that there are 17,383 active audiology licensees in the United States. In some states, audiologists who work for the Department of Education

Table 1. Active Audiology and Hearing Instrument Specialist (HIS) License Holders in the United States

Licensed Audiologists	17,383
Licensed HISs ^a	14,483
Total ^a	31,287

^aExcludes West Virginia.

Table 2. Licensed HISs Adjusted for Duplicate Head Counts

Licensed Specialists	14,483
Licensed HISs adjusted for states with dual licensure (AuDs and HISs) ^a	9,050 ^{b,c}

^a16 states require dual licensure. An estimated 50 percent of HISs were also audiologists.

^bPercent also licensed in more than one state.

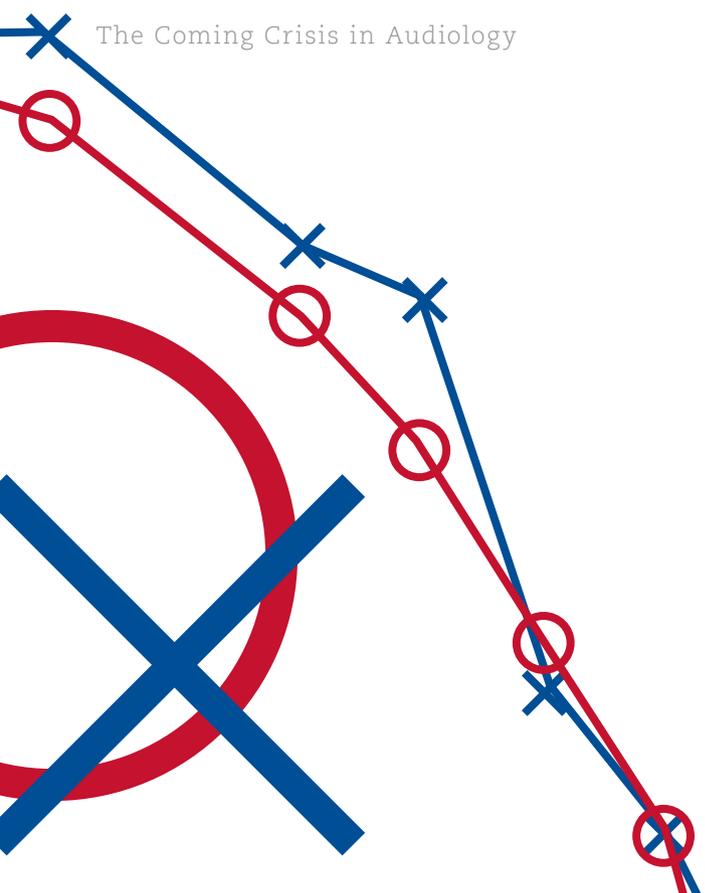
^cAn estimated 63 percent were over age 50 (Strom, 2006).

Table 3. Licensed Audiologists Adjusted for Duplicate Head Count and Estimated Unlicensed Practitioners

Licensed	17,383
Unlicensed (est.) ^a	500
Duplicate Count (est. 10%) ^b	1,788
Total Audiologists	16,095

^aIndustry, education.

^bLicensed in more than a single state.



(e.g., educational audiologists) are exempt from a state license, and an estimated additional 10 percent of audiology licensees are licensed in more than a single state. Therefore, it may be estimated that there are 16,095 audiologists in the United States. According to the Academy's 2008 *Compensation and Benefits Report* (unpublished), the full-time equivalent (FTE) of audiologists that work part and full-time is 80 percent. That is, of the 16,095 licensed audiologists, there are only 12,876 audiologists working the equivalent of full time. This is consistent with the U.S. Department of Labor's estimate in 2008 of 12,480 audiology jobs in the United States (U.S. Department of Labor, 2008).

The Age Factor: Retirement and New Graduates

According to the membership demographics of the American Academy of Audiology, approximately 38

Table 4. Demographics of Audiologists by Age

<30 Years	11%
31–40 Years	26%
41–50 Years	25%
51–60 Years	26%
>60 Years	12%

Table 5. Audiology Residential Doctoral Graduates and Admissions for the Years 2007–2012

71 Accredited Academic Programs 5 Consortium Programs 77 Total Universities	2007 Graduates	407
	2008 Graduates	512
	2009 Graduates	482
	2010 Graduates	582
	2011 Graduates	602 ^a
	2012 Graduates	629 ^a

^aAttrition estimated at 10 percent.

percent of audiologists in the United States currently exceed 50 years of age (TABLE 4). Thus approximately 6,000 audiologists (38 percent) will reach retirement age in the next decade. The Audiology Foundation of America (AFA) surveys university programs annually to determine the number of graduates and anticipated graduates of residential doctoral audiology programs (TABLE 5) (AFA *Residential Graduate Survey*, pers. comm., July 2009). While these (2009 or 2008) data might suggest a gradual upward trend in graduates, it should be noted that students graduating in 2007–2008 started their AuD programs when there were fewer universities offering the AuD degree. That is, prior to 2008, there were both accredited master's and doctoral audiology programs. AFA data collected prior to 2008 only accounts for students enrolled in doctoral programs and does not represent all students enrolled in audiology degree programs. Therefore, it is not that there are more students entering the audiology profession in 2009, but rather, all students are now in doctoral programs. Currently, according to the ASHA Council of Academic Programs, there are 71 accredited programs representing 77 universities (including consortium programs), and together they are enrolling approximately 600 students annually. However, it is likely that not all of these students will complete the doctoral degree program (with an estimated 10 percent attrition); other students will return to their native countries to practice; and still others will pursue additional education, take positions where they will not become clinical service providers, or perhaps choose not to work in the field of audiology for one reason or another. Thus, as a profession, we will graduate approximately 5,500 clinical practitioners during the next decade while an estimated 6,000 practicing and licensed audiologists will reach retirement age.

The audiology demographic trends are clear based on an analysis of these data: (1) there will be fewer students entering the audiology profession than the projected retirements of active audiologists; (2) the audiology profession will have little or no growth; and (3) there will be an increase in demand for hearing health-care services. It must be asked how the profession will respond to these challenges to meet patient demands.

Solutions: The Role of Audiologist's Assistants

Most other health-care professions have proactively addressed their shortages in providers by implementing standards and training programs for assistants to aid the professional in conducting routine and less demanding

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office tasks. Optometry and dentistry both have added assistants to their current delivery system. The field of optometry has in place the licensed doctor of optometry, the optician, and now the optometry assistant; similarly, licensed dentists have added dental assistants to their current long-time use of the dental hygienist.

If the public demand for hearing services and hearing aids increases without the needed changes in the supply of

clinical providers, then it is clear that other health-care providers may step in and take over our scope of practice, or alternative service delivery models will be developed and instituted. These new models may, indeed, exclude the licensed audiologist and will, no doubt, interrupt our current model for fitting and selling hearing aids.

In 2006, the Academy developed and published a position statement on audiologist's assistants. According to the Academy, the purpose of the audiologist's assistant is to (1) improve access to audiologists for hearing and balance health care by increasing availability of audiologic services; (2) increase productivity by reducing patient wait times and enhancing patient satisfaction; and (3) reduce costs by enabling assistants to perform tasks that do not require the skills of a licensed audiologist. The Academy recommends that the scope of practice, duties, and responsibilities should be decided by the supervising audiologist—making it clear that the audiologist is in charge of all activities performed by the audiologist's assistant. Currently, 20 states regulate audiologist's assistants in some manner although the definition, training, scope of practice, and qualifications described in the various legislative mandates are quite diverse. While efforts have been made to identify the necessary knowledge and skills of assistants (Hamill and Freeman, 2001; Kasewurm, 2006; Freeman, 2008), currently, there are no accepted national training and performance standards for audiologist's assistants.

In summary, it is clear that under our current system of graduate education and hearing services delivery, the profession of audiology will be challenged in the coming years to meet the anticipated increase in demand for our services. It is time for all audiologists and our professional organizations to become proactive and control our own future before changes in health care and service delivery disrupt our own efforts to manage and treat our patients.

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Also of Interest

The Academy will soon offer online resources for recruitment at the high-school and middle-school levels. Check www.audiology.org in mid-November to see the resources.