

The future of hearing care and the role of audiology

BY IAN WINDMILL

The Clinical Director of Cincinnati Children's Hospital Medical Center and President-elect of the American Academy of Audiology reviews the status of the present day audiologist's remit, and discusses the changes we can expect with the changing demographic and behaviour of our future patients. As self-directed hearing care becomes more prevalent, **Ian Windmill** highlights the aspects and considerations of this aspect of patient-centred care, and how audiology will need to evolve to meet this gap that currently exists when compared to other health issues.

The primary role of audiology in hearing care is to assess hearing status, diagnose auditory system disorders, and treat hearing loss.

In the future, this role will likely remain unchanged. What will change, however, are the methods available to assess the status of the auditory system, the tools available with which to arrive at a diagnosis, and the options for treating hearing loss. Advances in knowledge, technology and clinical tools will necessarily cause hearing care, and thus audiology, to evolve.

This evolution in both the current and future responsibilities for audiology is being driven by a number of factors, including changing population demographics, evolution of technologies for measuring and assessing auditory system function, greater knowledge and understanding of the anatomical, physiological and functional aspects of audition, pharmacological and technological advancements for treating hearing loss, and consumer perspectives on accessing hearing care.

On the demographic front, the number of people in the world continues to grow, and importantly, people are

living longer. This ongoing shift in the population demographics towards older persons suggests an ever-increasing incidence of hearing loss, tinnitus and vestibular / balance disorders. Thus the need to continue the role for assessing, diagnosing and treating these disorders will remain. The traditional testing methods and processes (e.g. pure tone thresholds, tympanometry, speech recognition) will be supplemented, if not replaced, by advanced technologies to more directly measure auditory system function. Electrophysiologic testing procedures that employ better stimulus and recording parameters will allow measures of both neurotransmission and functional performance within the auditory system, and radiologic procedures, such as functional MRI, will allow visualisation of auditory system function.

In terms of treatment, the development of medications for sensory hearing loss, as well as genetic treatments that stimulate the regrowth of hair cells, are being investigated, and could lead to expanded options for patients. Also currently under development are drugs that prevent hearing loss, particularly for hearing loss due to noise exposure. Developments of this type could lead to greater emphasis on prevention, rather than simply treatment of hearing loss. As the understanding of the ear-brain connection grows, the management of hearing loss will expand to also include management of cognitive function, particularly as related to the geriatric

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population.

One area that will affect the look of audiology in the future, and whose origins can be observed today, is the expansion of the consumer’s role in hearing care, particularly with regard to self-directed hearing care. Over the past decade, the concept of patient-centred care has become a key factor in decisions regarding the delivery of healthcare services. Generally, patient-centred care is the provision of care that is respectful and responsive to individual patient preferences, needs and values, ensuring that the patient is involved in all clinical decisions [1]. Commonly, this is interpreted to mean that the provider and patient work in tandem to make decisions regarding healthcare matters.

Self-directed care is a component of patient-centred care, and specifically refers to that part of care before the professional is engaged. For many health issues, patients often undertake self-directed care in order to quickly resolve a problem. For example, a muscle ache in the legs might first be addressed with aspirin, or lotions, or stretching, or heat / cold packs, or even massage. Only after these remedies have failed is the professional engaged. Self-directed care implies the patient take direct responsibility for managing their care, promotes personal choice as to when and how professional services are engaged, and maintains financial authority over all financial decisions associated with that care.

In hearing care, the options for self-directed care are limited. Patients have the choice to do nothing, or to seek professional help. There is no in-between for patients. Over the past year, the lack of choices for patients to provide self-directed care has caught the attention of agencies such as the Institute of Medicine (IOM) and the President’s Council of Advisors on Science and Technology (PCAST). Both of these groups have been studying the access and affordability of hearing care, and both have taken apparent strong consumer-centric views during the course of their investigations.

The absence of opportunities for self-directed care has been noted by both the IOM and PCAST.

In this regard, the increasing intensity of the voice of the consumer will be a driving force in the future of hearing care and audiology. In an October 2015 report, the PCAST recommended the creation of an over-the-counter hearing aid, and the allowance of personal sound amplification products (PSAPs) to be used by persons with hearing loss. This would allow consumers the opportunity to self-direct their hearing care, by accessing amplification devices, without seeing the professional.

Beyond the possibility of over-the-counter hearing aids and PSAPs, there is a growing interest in the use of “hearables”. These devices are not designed for hearing loss, but rather serve the purpose of wireless communication devices that connect the wearer to the world. Hearables can monitor fitness, connect with smart phones and other electronic devices, provide information, and enhance hearing capabilities. The potential for hearable technology to merge with hearing aid technology is both real and coming soon. Already there are made-for-iPhone hearing aids, and companies such as Samsung and Apple may be ready to produce ear level systems that are a combination of contemporary technology and hearing aid devices.

Like any area of healthcare, hearing care and the role of audiology will continue to evolve. Driven by internal forces such as new knowledge and technologies, and external forces such as population demographics and genetic treatment options, the delivery of hearing care will have to evolve simultaneously. Very clearly, the potential for over-the-counter hearing care will have a profound affect on the manner in which hearing care is delivered today. But the need to assess hearing status, diagnose auditory system disorders and provide treatment for hearing loss will remain.

Reference

1. Institute on Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Available from: <http://iom.nationalacademies.org/Reports/2001/Crossing-the-Quality-Chasm-A-New-Health-System-for-the-21st-Century.aspx>. Last accessed 21 January 2016.



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Ian Windmill currently serves as President-elect of the American Academy of Audiology

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