

A Primer on Hearing Assistance Technology and the ADA

By David Baquis

Although the general public has long accepted the need for some disability accommodations, such as sign language interpreters for deaf people, we have only made a dent regarding awareness of assistive technology for people who are hard of hearing. Bottom line: hard-of-hearing people, in general, are missing out on communication and not functioning to their fullest, considering all the available resources. People who dispense hearing instruments and provide audiological testing are in key counseling positions to help change the tide of this long-standing problem.

The solution begins with awareness of available equipment. Hearing assistance technology includes: assistive listening systems, telecommunication devices and alerting equipment. Many examples of these devices and the companies that provide them are shown on pgs. 42-45 of this issue of *The Hearing Review*. The next

part of the solution involves educating consumers about when and where to obtain needed equipment, how to select and use it, and what are the relevant public policies and services.

Overview of Assistive Technology

It is useful to know about assistive device demonstration centers, which are showrooms that display equipment and give people a hands-

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on education. If an assistive device center is not currently offered by your business/practice, we recommend the establishment of one because it allows clients to understand how devices work in a tangible way that goes beyond the pictures of a catalog. Demonstrations also help hearing care professionals conduct a needs assessment, because consumers can efficiently determine which devices work well for them.

For example, some telephone amplifiers *clarify* sound, whereas others only *amplify* sound. SHHH provides a list (for a nominal fee) of over 250 such centers across the country.

Assistive listening devices (ALDs) include inexpensive corded amplifiers that can assist with face-to-face conversations, as well as FM, infrared and inductive loop systems. FM systems utilize radio frequencies, infrared systems transmit **light waves** and loop systems generate a magnetic field.

The main objective of assistive listening systems is to amplify sounds that might normally be lost due to distance from the speaker, cut out background sounds or override poor acoustics. People, regardless of whether or not they have a significant hearing loss, can use all of these systems and find them helpful. However, for those who do use a hearing instrument, the best result is gained through direct coupling via a telecoil built into the instrument.

Each system has its own set of advantages:

► *FM and infrared systems* are easy to set up because they are wireless. They are often offered at conventions or conferences due to their portability. However, FM systems can "bleed" through walls and would not be the right choice for use where, for example, different movies are playing side by side, unless the systems are set at different frequencies.

► *Infrared systems* offer privacy and would be preferred in a courtroom setting, for example.

► *Loop systems* are generally installed permanently. They are popular among hearing instrument users because they don't require the use of receivers, just a hearing instrument with a telecoil. However, loop systems are susceptible to magnetic interference.

Various attachments connect to FM, infrared or inductive loop receivers to bring the sound to the ear. Consumers may use neckloops, silhouette inductors (which rest behind the ear), cochlear implant patch cords, ear plugs or headphones. Information about these linkages has been unclear. For example, you can't place an earphone plug over a hearing instrument.

Telecommunication products include telephone amplifiers and text telephones or TTYs (also known as TDDs), which allow consumers who cannot understand speech without visual cues, to read the text of the inbound part of the conversation. TTYs can be used with telecommunications relay services when the hearing party doesn't have a TTY. Relay services employ communication assistants who type the other party's conversation to the hard-of-hearing consumer's TTY. Hard-of-hearing people with good speech can respond orally (using a service called voice carry over or VCO) instead of typing.

For the television, there are listening systems that improve reception. These devices not only enable personal amplification, but also help provide a clearer sound because the tones are not reverberating through the speaker-box of the TV set. Cap-

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tioning controls are also available that allow the user to read spoken words on the TV screen. Separate public policies pertain to captioning, such as a requirement that all new TVs with 13" screens or greater have built-in closed caption capability. Another rule requires a great deal of past and future TV programming to be captioned.

Other telecommunications equipment useful to people with hearing loss include: beepers, fax machines, cellular phones and integrated wireless devices. Some of these devices are considered "electronic curb cuts" because of their usefulness to everyone. Computers on the Internet are especially a great boon to hard-of-hearing people because they can be used for instant messaging as well as e-mail.

Alerting units include loud bells, light flashers and vibrating devices. These may work as single function units or as systems. For example, an inexpensive light flasher may go off

only at the spot where it is plugged in. However, a system with transmitters and receivers could set off lamps in various rooms of the house. The receivers could be tied in with different transmitters to alert consumers to the telephone, doorbell, security alarm, smoke alarm or a crying baby. Vibrating units include wake alarms, watch timers and personal pagers.

Hearing health care professionals need to educate consumers; consumers need to assert themselves and ask for their preferred assistive technologies according to their individual needs and facility managers need to consider the different needs of hard-of-hearing people when purchasing equipment to ensure true hearing instrument compatibility and accessibility.

Summary

The ADA has paved the way to bring hearing assistance technology

to people who need it. However, the ball is in everyone's court to ask for it where it is not provided. In addition, hard-of-hearing people must start using assistive devices in greater numbers and with greater frequency. All too often, for example, listening systems sit in the box office of movie theaters and playhouses because consumers do not realize their benefits (or that they even exist). Audiologists and hearing instrument specialists are encouraged to tell their patients and communities about what a difference assistive listening devices and other technology can make—in addition to and beyond hearing instruments. •

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Public Policy and the ADA

The Americans with Disabilities Act (ADA), passed in 1990, gives civil rights protections and equal opportunities to individuals with disabilities in employment, state and local government services, public accommodations, transportation and telecommunications. ADA rules have the potential for far-reaching impact on people with hearing loss in many respects, including mandates for the provision of assistive technology.

ADA Title One states that employers with 15 or more employees must reasonably accommodate the disabilities of qualified applicants or employees, unless an undue hardship would result. Work situations requiring accommodation might include: small staff sessions or trainings, large group conferences, social gatherings and one-to-one meetings. Assistive technology that might help includes computer assisted real-time captioning, in which a specially trained stenographic reporter enters the spoken words on a screen for all to see. Computer assisted note-taking is a form of captioning in which the main points of a discussion are typed and projected onto

a screen. Sometimes companies will use their own typists for note-taking. For presentations, visual tools such as handouts, dry erase boards and overhead transparencies can be helpful.

For telecommunications: amplified telephones, TTYs, intra-office text-based intercom systems, fax machines and computers are often utilized. Other technology helpful on the job could include amplified stethoscopes, flashing smoke alarms and door-knock signalers. In addition to technology, many other accommodations can be considered. For example, in meetings a horseshoe arrangement might be better than classroom style. Speakers should attempt to face the audience, articulate clearly and stand in good light, preferably in a room with good acoustics.

ADA Title Two states that state and local governments cannot discriminate against people with disabilities in their services, programs and activities. This includes: state and local courts, local legislatures and executive agencies, social service agencies, school systems, motor vehicle depots, prisons, public hospitals, libraries, state-operated airports

and transportation agencies. As a result of this section, telecaption decoders should be provided upon request for TVs in hospital bedrooms, for example.

ADA Title Three prohibits discrimination on the basis of disability in places of public accommodation. These places include: hotels and motels; restaurants; movie houses and theatres; conventions and lecture halls; doctor's and lawyer's offices; public transportation stations; museums and libraries; parks and zoos; homeless shelters and day care centers; and bowling alleys or health spas. Title 3 does not require the public entity to provide primary consideration to the consumer's preferred accommodation. So an individual may have to settle for captioning instead of a listening system, for example.

ADA Title Four requires all phone companies to provide both local and long-distance telecommunications relay services. Relay services serve as intermediaries to place calls between TTY users and non-TTY users. The rules set forth standards that include confidentiality and non-censorship of conversations. •