Hearing assistance technology: Making a world of difference

By Mark Ross

It's been almost 30 years since I acquired my very first hearing assistance device (other than hearing aids, of course). It was a small alarm clock that signaled by flashing a strobe light and buzzing loudly. Prior to seeing it in the catalog of a large supplier of hearing aid accessories, I didn't know such things even existed. It was inexpensive, about $20, I believe, but it made a world of difference on some important occasions in my life. And that is really the point of this article.

At the time, I was doing a lot of professional traveling and thus could not count on my wife to wake me in the morning. I had to depend upon myself to get up in time for a morning presentation, session, or appointment. I knew that without my hearing aids I couldn't hear an audible alarm clock, a telephone, or someone knocking on the door. But I did have to get up.

My solution was to keep waking myself up every hour or two just to be sure I wouldn't oversleep and be late. Needless to say, this "solution" often left me rather bleary-eyed for the next day's activities.

But, using the visual alarm clock enabled me to sleep soundly, knowing I would be awakened in the morning. This was a very simple, but elegant, solution to a specific listening problem that hearing aids are not designed to address.

BETTER LIVING THROUGH TECHNOLOGY

Since then, I've acquired many other kinds of assistance devices. Now when I travel I carry with me a small vibratory alarm clock, a door-knock sensor, and a personal FM system. This last device not only provides me with a "third ear" for numerous communicative situations, but also permits me to listen and understand the TV in a hotel room. I simply place the mike close to the TV loudspeaker, and I'm able to keep the volume low and the intelligibility high.

I also have a body FM transmitter into which I plug two small conference mikes for use in meetings; these are placed on the table top among the participants. I used to bring an in-line telephone amplifier on trips, but now, with the Hearing Aid Compatibility telephone law in effect, I'm able to use my telecoil satisfactorily with most hotel telephones.

All these devices enable me to function in a fairly normal fashion while I'm on trips. I can wake up in the morning, respond to knocking on my door, hear on the telephone, understand the TV, and engage in conversations at noisy receptions and dinners. All these activities are difficult or impossible for me with hearing aids alone.

At home, I use a floor inductive loop (infrared) system for the TV, and all my telephones are amplified. One phone contains an audio output jack on both the phone and answering machine. This permits me to plug in a neckloop and thus listen to the telephone or the answering machine with both ears through the t-coil setting on my hearing aids.

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I also have a large infrared (IR) conference microphone with IR receivers for those "special" meetings (that I fortunately do not have to attend much any more!). I've recently installed three smoke detectors around my house; these transmit an RF signal to a strobe light next to my bed. This helps me sleep more soundly when my wife is traveling. Unfortunately, this is not an option while I'm traveling. The in-room smoke detectors with visual alerting signals provided by hotels are basically useless, since there must be smoke in the actual room for the detector to respond (see Ross and Mulvany[1] for a full discussion of smoke detectors for people with hearing loss).

Whether I'm at home or on the road, the only large-area listening events I attend (theater, lectures, etc.) are ones that make assistive listening systems available, except for religious services, since houses of worship are not covered by the Americans with Disabilities Act (ADA).

For some situations, such as Elderhostels and tours, I bring my own system and request that the lecturer or tour guide wear the lapel mike with belt transmitter. I do not believe I am being unreasonable in making this request. Without an *effective* assistive listening device (Note: This is a crucial caveat), I either cannot understand what the speakers are saying or I strain too much to appreciate the performance or the message.

It's not that I enjoy being somewhat assertive in these situations—I really don't like drawing that much attention to myself—but I have no choice. If I am to participate fully in

the social and cultural offerings of this society, then these actions on my part are required. It's also a good way to provide a little hearing education in some situations, such as at Elderhostels or tours, where I have found great interest in the devices I use.

The point I'm attempting to make is that these devices are not luxuries. Their operation directly affects the quality of my life, my ability to communicate effectively in many situations. And, indeed, insofar as smoke detectors are concerned, life itself can be at stake.

Unfortunately, however, except for noteworthy exceptions here and there, those who dispense hearing aids do not generally include the evaluation, selection, and dispensing of hearing assistance devices as one of their routine functions. What this undoubtedly means is that many of the hearing-related problems that their clients encounter (such as I did waking up in the morning while on trips) are overlooked during the hearing aid selection process. But if audiologists and other dispensers are not addressing such problems when they are selecting hearing aids, when will they be addressed? And who else would be the logical person to evaluate and respond to the hearing-related difficulties experienced by persons with hearing loss?

INFORMING PEOPLE ABOUT ASSISTANCE TECHNOLOGY

Most hearing care providers would argue that this type of information *is* being presented to their clients. Prendergast and Kelley reported that over 80% of 110 dispensing audiologists surveyed in their study stated that they provided their clients with such information.[2] This is an impressive figure, but, unfortunately, the vast majority of hearing aid users who are queried directly do not recall receiving information about any assistance device other than hearing aids.

Several years ago, I co-authored a study in which we surveyed 942 hearing aid users. We asked them, among other questions, about the services and information they recall having received from their hearing aid dispensers.[3] On the positive side, the results indicate that any time a question dealt with factors that directly concerned the hearing aid, a high percentage of respondents reported receiving appropriate information or service. Examples of this included: explaining the audiogram, reasons for selecting the specific hearing aid, and care of the hearing aid, battery, and earmolds. In this regard, hearing aid dispensers were doing exactly what they should be doing: helping people understand their hearing loss and how best to use and adjust to their new hearing aids.

On the other hand, only a minority of respondents recalled receiving any information or service not directly related to the hearing aids. This includes the explanation of features integral to the function of some hearing aids. These are reported in Table 1. To provide an overall perspective, Table 1 also shows the responses of the subjects regarding any service or information that can be broadly defined as rehabilitative.

These are not very impressive figures. It is possible, even likely, that hearing professionals presented much of this information to their clients. But, as Margolis points out,[4] communication breakdowns are common in almost every type of clinical practice. There is a large gap between what is presented to clients/patients and what they actually recall. And, of what they do recall (about 50% of the information presented), half is incorrect or distorted to some extent.

When it comes to hearing aid counseling, what people recall is all that matters, not what practitioners believe they told them. In brief, it seems we have gotten very good at managing hearing aids, but other services that are germane or potentially helpful to a hearing aid user are on some back burner.

MAKING HAT A PRIORITY

For various reasons, hearing aid dispensers do not generally assign a high priority to the evaluation, selection, and dispensing of hearing assistance technology (HAT). While a primary focus on hearing aids is understandable—indeed, I agree with it—the activities cannot be restricted to hearing aids alone.

We know, and my own experiences amply illustrate this, that at least some people can benefit from other types of hearing assistance devices. When clients raise needs that cannot be ignored, such as difficulty understanding the telephone or TV, advising them to look at an assistive device catalogue or buy an appropriate device through a retail outlet simply passes the professional's responsibility on to the client. This kind of response trivializes a client's communication needs.

The low priority given to assistance devices can be largely ascribed to simple inertia. HAT is not a familiar area to many

Service/Information	Recall receiving
Made certain I understood the T-switch	45%
Informed me of other hearing assistance technologies (e.g., TV and telephone, personal FM systems, signaling and warning devices)	31%
Explained use of directional microphones	23%
Discussed with my spouse and/or other family members the specifics of my hearing loss and communication strategies	20%
Provided information about Self-Help for Hard of Hearing People or other consumer resources	17%
Discussed coping and communication strategies	13%
Discussed communication strategies for dealing with my hearing loss at work	10%
Asked to complete a follow-up questionnaire after wearing the hearing aid to determine improvement	9%
Invited to participate in group meetings to help orient me to my new hearing aid(s)	5%

Table 1. *Average percentages* of *hearing aid users who recall receiving the indicated information/service from their hearing aid dispensers (after Stika, Ross, Ceuvas3).*

hearing care providers. For them to learn about the availability and operation of a large number of devices other than hearing aids requires time, energy, and the discomfort of moving out of a comfortable routine. Practitioners would have to develop procedures to evaluate the communication needs of their clients, a method of selecting specific devices, and a procedure for dispensing and following-up of the devices that are recommended. All this would have to be incorporated into their usual clinical routine and would undoubtedly take some extra time. And, as we know, time is money and economic realities cannot be ignored.

Currently, hearing assistance devices represent only 2% of the gross revenues of hearing aid dispensers.[5] In my opinion, this tiny figure reflects the lowly status given by dispensers to assistive devices, not their true importance or economic potential.

There is no professional consensus on the kind of model that individual practitioners or hearing centers can adopt to most effectively and economically evaluate and dispense assistive devices. Some clinical facilities include an assistance device demonstration center, but from what I have seen its incorporation into routine clinical practice seems chancy at best. To manage professional costs, other centers and clinics train and supervise a staff person to demonstrate and dispense assistance devices upon referral by the supervising professional.

Commonly, there is an area in the office where various devices are displayed. More committed centers may include an internal telephone line for demonstrating telephones and a TV set to demonstrate various types ofTV listening devices. The display case would likely include such basic items as a personal listening device, a neckloop, vibratory/visual alarm clocks, doorbell and telephone signaling lights, several types of amplified telephones, and visual/vibratory smoke detectors. More refined and specific needs can be elicited during the intake interview and/or the completion of a communication needs profile. Addressing these needs may require special-ordered devices, such as conference microphones and universal sound signalers (sensors for doors, telephones, a baby's cry, fire, etc.).

In an attempt to fill the communication needs gap, a few SHHH (Self-Help for Hard of Hearing People) chapters have organized assistance device demonstration centers. These are located in donated non-profit facilities (such as local libraries) and are staffed, usually intermittently, by volunteers. Some volunteers have technical backgrounds, some are technophiles who love working with devices, and some are SHHH members who have graduated from a yearly workshop conducted by SHHH and the Rehabilitation Engineering Research Center (RERC) at Gallaudet University. These demonstration centers differ in how they operate, but none, to my knowledge, actually sell the units. Rather, they refer people to specific, usually local, vendors.

At the national level, SHHH has organized a new department, the National Center for Hearing Assistive Technology (NCHAT), whose primary mission is to promote the use of this technology. Its informative web page (www.hearingloss.org/hat) lists several manufacturers whose products hard-of-hearing consumers can learn about on the web. Undoubtedly, consumers can do this most efficiently with the help of professionals, which one hopes will be forthcoming, since the need of people with hearing loss for such technology must be addressed.

EVALUATING NEEDS

The ideal model is for professionals to formally evaluate the communication needs

Name_____ Date_____

Telephone communication:

On a scale of 1 to 5, estimate the degree of difficulty you have communicating on the telephone, with #1 denoting no problem, #3 problems about half the time, and #5 unable to comprehend speech at all. Fill in intermediate points (#2 and # 4) as appropriate.

Without hearing aids _____ With hearing aids _____

Hear telephone ring:

Always _____ Sometimes not _____ Often not _____ Never _____

Understanding TV with ( ) and without ( ) hearing aids (check one)

Note your usual degree of listening difficulty on the same 1-to-5 scale: _____

Are you aware that your TV set probably includes caption capability? Yes _____ No _____

Check yes or no to the following

Do you live with someone with normal hearing? Yes _____ No _____

Do you have a visual or vibratory smoke detector alarm in your home? Yes _____ No _____

Are you aware when someone is ringing your doorbell? Yes _____ No _____

Do you have difficulty waking up to a sound alarm clock? Yes _____ No _____

Assistance listening devices

Are you aware of their availability in large public listening areas

(movie houses, theaters, auditoriums, etc.)? Yes No _____

If yes, do you use them at:

The movies or theaters _____

In auditoriums or classrooms _____

Houses of worship (devices not required by law) _____

Other (specify) _____ _____

Personal FM systems

Do you know what they are? Yes _____ No

Do you use one? Yes No

Table 2. *A one-page Communication Needs Profile.*

of each client and then take the appropriate steps on site to help the client meet these needs. This can best be done in cooperation with knowledgeable consumer activists, who could add a welcome personal touch to the process by acting as mentors and role models.

In my judgment, *every* potential hearing aid candidate should be asked to complete a formal Communication Needs Questionnaire. It is not sufficient to query clients informally about the nature of their hearing difficulties; too often, this leads to a sole focus on hearing aids as the answer to all their difficulties. The structure of a formal questionnaire focuses the attention of both client and hearing professional on specific issues that may otherwise be overlooked during the hectic process of selecting hearing aids.

Table 2 is a "Communication Needs" profile that I recently developed. It is not particularly original nor has it been formally field-tested. I simply made some *a priori* assumptions based on my professional and personal experiences regarding the most likely areas of difficulty for people with hearing loss. Every question relates to a topic that professionals should already be asking their clients about during the hearing aid dispensing process. My goal was to highlight these areas of need by making them explicit.

I limited the profile to one page to make it convenient to administer. The form highlights some areas of needs shared by just about everybody in our society.

I also see this Communication Needs profile as a form of client education. In asking the question, the examiner can inform clients about the availability of captioning on TV sets, the required presence of assistance listening systems in large-area listening venues, and the existence of personal FM systems. One cannot assume that people with hearing loss already know this information; on the contrary, *we* should assume that they do not and that it is our responsibility to inform them.

LOOKING TO THE FUTURE

There has been no shortage of information in recent years about hearing assistance technology. Various publications have been devoted to HAT, including journal articles, books, and a plethora of company catalogues. This issue of *The Hearing Journal* will add further up-to-date information on the topic. So, although they may be unfamiliar with specific devices, no professional can plead ignorance about their availability or necessity for many clients.

I'm not really sure why HAT has so often been relegated to a clinical back burner. Perhaps it is because historically the focus has been on hearing aids, and this orientation has carried forward over the years. Perhaps, sheer inertia plays a role, as commented on above. It is difficult to change a habitual routine that feels comfortable. Perhaps the financial incentives are insufficient to warrant the expenditure of time necessary to evaluate and dispense HAT.

Whatever the reasons, they do not accord with the reality of the diverse communication needs of people with hearing loss. Nor do they reflect the full scope of our professional responsibilities. Certainly hearing aids are a necessary ingredient in the care of our clients, but we should recognize that they are often insufficient to alleviate many of the communication problems that clients face.

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In short, as I see it, the greatest obstacle facing consumers in regard to hearing assistance technology is not access to the kind of information that can be found in these pages (as necessary as that is). Rather, I believe it is that hearing aid dispensers do not accord assistive devices the priority they require if their evaluation, selection, and dispensing are to be an integral part of every hearing aid selection process.

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Mark Ross, PhD, is Professor Emeritus, University of Connecticut.

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