

# A Systematic Program for Hearing Instrument Orientation and Adjustment

**T**he following description provides an individualized plan for orientation and adjustment over the 30-day trial period. This ensures that: 1) the patient has been trained in terms of how to manipulate and use all of the options associated with the hearing instrument; 2) the patient will contact the dispenser during the trial period if he/she is not getting the expected benefit or has forgotten how to manipulate some aspect

tion Check List (Fig. 3) gives the dispenser this information immediately. Follow-up appointments are used more effectively with the Hearing Aid Commentary (Fig. 6) and the Checklist for 1 to 2 Week Follow-up Visit (Fig. 8). A systematic approach reduces unnecessary patient contact and yet encourages needed contact (i.e., appropriate questions). This approach also provides what can be a very important paper trail of documentation.

The following is a description of how this system is used in day-to-day clinical practice. It is important to understand the philosophy of the 30-day trial in order to appreciate how this program is implemented. We do not see our role as selling a particular hearing instrument. Rather, the service is provided to improve communication ability, and through a comprehensive needs assessment, determine the best way(s) to improve communication. If a hearing instrument is part of the solution, we do not embrace the 30-day trial period as a time during which the patient decides to either keep or return a particular instrument. Rather, we approach this period as the time for the dispenser and patient to work towards a satisfactory hearing solution. The final goal of this "trial" period is a "satisfied" hearing instrument user and a "satisfied" dispenser, within the limita-

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The purpose of this article is to provide an organized approach to hearing instrument orientation and adjustment to be used by the practicing dispenser. It is intended to provide the dispenser with a format that can be implemented to meet the individual needs of each patient. The framework (or components) is the same for every patient, but the details change with each individual. In this way, the experienced dispenser can incorporate all of his/her expertise into this model. In order to approach the hearing instrument orientation in an organized manner and to ensure services are consistent among clinicians, we use a packet of forms, illustrated in this article, that serve as a guide to the hearing instrument delivery process.

of the hearing instrument for optimum use; and 3) the patient is making an informed decision regarding ownership of the particular hearing instrument at the end of the 30-day trial.

When looking at the series of seven basic forms to be used, one may be concerned that there isn't time to implement this approach in a busy practice. The opposite is true. The organized, form-based approach saves time in the long run. The dispenser does not spend time thinking over what needs to be covered and/or what has already been covered. A glance at the Hearing Aid Opera-

tions imposed by the impaired auditory system and current amplification technology.

This program has developed over years of hearing instrument dispensing and research, and interaction with dispensers, manufacturers and hearing instrument users. The authors have never attempted to collect data establishing the efficacy of this type of approach over some other approach. Perhaps this type of research will be encouraged as individuals present rationales for various approaches and funding agencies acknowledge that, no matter how good the technology, if it is not introduced effectively it will not produce "successful" hearing instrument users.<sup>1,2</sup>

We have used the words "satisfied" and "successful" in the introduction. Satisfied is generally defined as a hearing instrument user who plans to keep and use the hearing instrument and feels that his/her expectations have been reasonably met. A "successful" user is very hard to define. A *successful* user is often defined as someone who keeps the hearing instrument after the 30-day trial whether it is actually used or not. In our experience, a *successful* fitting means that communication needs origi-



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nally identified on the Hearing Demand, Ability, and Need Profile (Fig. 1) have been adequately addressed through the use of assistive devices, hearing instruments, communication strategies, environment manipulation and counseling.

**Candidacy and Needs Assessment**

Care must be taken in identifying an appropriate candidate for amplification. The reluctant elderly mom forced to come to the hearing instrument evaluation by the zealous adult daughter, may be better served with an assistive listening device connected to the TV. We have found that two criteria play a large role in creating the right attitude for adjustment to a hearing instrument: 1) the patient is motivated by internal forces to use a hearing instrument; and 2) the patient perceives some difficulty in certain activities and/or is avoiding activities in which he/she would participate if a hearing loss were not present. The first is evident from the patient's answer to the question "Why are you here today?" and the second is evident from the systematic needs assessment described below.

When faced with a patient who has not been internally motivated to pursue our services, discussion (counseling) is initiated to identify where he/she is in terms of accepting his/her hearing loss. Administering the Communication Profile for the Hearing Impaired<sup>3</sup> may assist in determining where the person is on the continuum of hearing loss acceptance. The profile provides information related to personal adjustment in the form of a variety of subscales including denial, displacement of responsibility, anger, acceptance of

loss, etc. The individual item responses or subscale scores provide a good starting point for conversation related to whether the person is ready to pursue communication solutions. The responses also may point to some specific situations that can be remediated with environment manipulation, relatively inexpensive assistive technology (e.g., portable telephone amplifier, smoke detector), and/or communication strategies which may be less threatening to the patient as compared with pursuing personal hearing instruments. This makes a connection and opens the door for the patient to return when he/she is ready to pursue complete communication solutions.

For the patient ready to pursue communication solutions, a basic case history is conducted in order to understand the patient's medical and hearing background. The Hearing Demand, Ability, and Need Profile<sup>4,5</sup> (Fig. 1) is used for the purpose of the needs assessment. Relevant communication situations are listed down the side of the page as well as extra space for special communication situations specific to the patient. The dispenser goes through each situation in an interview format filling out the categories going from left to right as you look at the page. First, it is determined in what circumstances the problem is present (e.g., home, travel, work/school, dormitory) and if the problem is present with and without a hearing instrument on (if this is a current user). An "X" is placed in all boxes that represent communication difficulty. Next, the dispenser works with the patient to try to determine what exactly is causing the problem (e.g., hearing, angle, noise, distance, visibility). Determination of the origin of

Name:

HEARING DEMAND, ABILITY, AND NEED PROFILE

(adapted from Healey, J. (1992) and Palmer, C. (1992))

| Description of Communication Situation                                                       | Communication Problem is Present... |                         |                          |                           |                               |                                |                        |                         | The Problem is Due To... |       |       |          |            | Currently I Compensate By...<br>(describe)<br>Comments |
|----------------------------------------------------------------------------------------------|-------------------------------------|-------------------------|--------------------------|---------------------------|-------------------------------|--------------------------------|------------------------|-------------------------|--------------------------|-------|-------|----------|------------|--------------------------------------------------------|
|                                                                                              | hearing aid on at home              | hearing aid off at home | hearing aid on in travel | hearing aid off in travel | hearing aid on at work/school | hearing aid off at work/school | hearing aid on in dorm | hearing aid off in dorm | Hearing                  | Angle | Noise | Distance | Visibility |                                                        |
| <b>ALERTING</b>                                                                              |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| Telephone bell                                                                               |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| Doorbell                                                                                     |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| Door Knock                                                                                   |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| Dependent (baby, adult)                                                                      |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| Alarm Clock                                                                                  |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| Smoke Alarm                                                                                  |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| Siren                                                                                        |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| Turn Signal Indicator                                                                        |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| Personal Pager                                                                               |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| <b>PERSONAL COMMUNICATION</b>                                                                |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| Telephone                                                                                    |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| TV/Stereo/Radio                                                                              |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| One-to-one (planned)                                                                         |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| One-to-one (unplanned)                                                                       |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| Group                                                                                        |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| Large Room                                                                                   |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| <b>OTHER COMMUNICATION NEEDS</b>                                                             |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| (e.g., stethoscope) fill-in below                                                            |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
|                                                                                              |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
|                                                                                              |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
|                                                                                              |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
|                                                                                              |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| Further Information (e.g., status of hearing aids, telecoil, DAI, communication environment) |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |
| Recommendations (HAD/S, Communication Strategies, Environmental Manipulation)                |                                     |                         |                          |                           |                               |                                |                        |                         |                          |       |       |          |            |                                                        |

Fig. 1: Hearing Demand, Ability and Need Profile Form.

Patient Expectation and Perception Worksheet

I am successful in this situation...

| Communication Goal (list in order of priority) | Hardly ever | Occasionally | Half the Time | Most of the Time | Almost Always |
|------------------------------------------------|-------------|--------------|---------------|------------------|---------------|
| 1 _____                                        |             |              |               |                  |               |
| 2 _____                                        |             |              |               |                  |               |
| 3 _____                                        |             |              |               |                  |               |
| 4 _____                                        |             |              |               |                  |               |
| 5 _____                                        |             |              |               |                  |               |

C = how the patient functions currently (pre-hearing aid or with old hearing aid)

E = how the patient expects to function post-hearing aid fitting

√ = level of success that the audiologist realistically targets

HA = how the patient actually perceives level of success post-hearing aid fitting

Fig. 2: Patient Expectation and Perception Worksheet.

the problem should guide the dispenser to appropriate technology choices (e.g., assistive device vs. hearing instruments, directional microphones, multiple memories, environmental manipulation, strategies, hearing instrument style, special circuitry, etc.). The patient is also asked how he/she is currently compensating for any problems (i.e., no compensation, depending on others to help, avoiding the situations, using particular assistive devices, etc.). Use the empty boxes under the "Other Communication Needs" section to fill in situations that are specific to your patient (e.g., a special athletic activity).

If the patient is considered a hearing instrument candidate based on case history, audiometric results and the needs assessment, the individual completes the Profile of Hearing Aid Benefit (PHAB).<sup>6,7</sup> This administration is considered the pre-test and the profile is re-administered toward the end of the 30-day trial. The PHAB is the only measure that we currently use to quantify hearing instrument benefit and, therefore, efficacy of treatment. There are several other hearing handicap measures<sup>3,8,9</sup> that have psychometric data associated with them and allow documentation of significant change, but we have found the PHAB (or the Abbreviated Profile of Hearing Aid Benefit<sup>10</sup>) to deal most directly with improvement expected due to amplification. We currently are not enthusiastic about any particular objective measure for the purposes of documenting change in performance. If some type of objective functional assessment is used, make sure it can be administered in a pre-post test type format whereby the data can indicate what constitutes a significant change.

For the purpose of this article, we are going to assume that the dispenser chooses the appropriate (or at least reasonable) technology for the patient (e.g., frequency response, output limiting, etc.). It is not our intention to minimize the area of selection in any way, but this is a topic for another complete manuscript.

The dispenser and patient fill out the Patient Expectation and Perception Worksheet (Fig. 2) together (this form is adapted from a form used by the National Acoustics Laboratory, Australia, which is entitled "Client Oriented Scale of Improvement"<sup>11</sup> or COSI). Oticon, Inc., currently is providing the COSI to dispensers as part of their Human Link program. The goal of this worksheet is to create a record of the patient's expectations and to motivate discussion regarding realistic expectations. Finally, the worksheet is used in the follow-up appointment to record the patient's perception related to specific

defined goals and to motivate further rehabilitation, if necessary. The patient and dispenser

agree on the top five communication difficulties that are of greatest importance. These should come directly from the needs assessment that was just completed. The dispenser has a role in this because there may be safety concerns that the patient does not assign priority to, but the dispenser does (e.g., hearing the smoke detector). State

the goals on the Patient Expectation and Perception Worksheet. For instance, if hearing in a group situation was revealed to be a problem, the goal might be "to understand the family dinner table conversation." Problems should be very specific so change (improvement) can be evaluated easily (i.e., do not use something like "I want to hear in noise"). The patient puts a "C" under the descriptor (hardly ever, occasionally, etc.) that illustrates how he/she is doing *Currently* and an "E"

under the category that describes how he/she *Expects* to be doing post-hearing instrument fitting. The dispenser then places a "√" under the descriptor that illustrates a realistic goal considering the patient's hearing loss and the hearing instrument that is being prescribed. If the "√" and the "E" are not in the same box, the dispenser should discuss what may limit the patient's ability in this situation, hopefully creating realistic expectations.

1.  Battery Insertion
2.  On/Off function
3.  Volume Control
4.  Hearing Aid Removal
5.  Hearing Aid Insertion
6.  Telephone Coil
7.  Remote /Multimemory Control
8.  Memory 1/ \_\_\_\_\_
9.  Memory 2/ \_\_\_\_\_
10.  Memory 3/ \_\_\_\_\_
11.  Memory 4/ \_\_\_\_\_
12.  \_\_\_\_\_
13.  \_\_\_\_\_
14.  \_\_\_\_\_
15.  \_\_\_\_\_

Fig. 3: Hearing Instrument Operation Checklist.

## TIPS

Expectations that will be helpful for the patient to bring to the dispensing appointment.

- I have begun the *process* of adjusting to a new hearing aid.
- My own voice may sound "different" when I am wearing my aids.
- I may have new perception of footsteps, doors closing, etc.
- Listening in background noise will still be challenging.
- I may not know what questions to ask until I have worn the instruments for at least a few days.
- My hearing aid is only a part of the hearing rehabilitation services my dispenser supplies.
- I will benefit the most from amplification if I use speechreading and positive listening strategies along with it (e.g., I should not judge the effectiveness of hearing aids by asking people to cover their mouths when they speak).

## The Process Begins

With the patient's approval, family members or significant others are included in all hearing instrument teaching/counseling sessions. Much of our "hearing instrument counseling" begins at the time that earmold impressions are taken (usually at the same appointment where the needs assessment was completed). We introduce the concept of the hearing instrument fitting as a process that has just begun.

Following the earmold impression, the patient and family are provided with the Krames Communication brochure entitled *Hearing Aids*.<sup>12</sup> We find this particular brochure to be visually appealing and comprehensive without overwhelming a patient by including too much information. There certainly are other brochures available that may meet this need (e.g., Better Hearing Institute, Starkey's *Aural Rehabilitation Review*, *Getting the Most Out of Your Hearing Aids* video<sup>13</sup>). When choosing a brochure make sure it includes: basic anatomy, causes and types of hearing loss, hearing tests, understanding audiograms, type of hearing instruments, realistic expectations, what to expect in the hearing aid evaluation, hearing instrument care, communication strategies and introduction to assistive technology. We stress to patients

**T**here are many communication strategies and tips that a person with hearing impairment can utilize to receive the minimum amount of information from a conversation. The following is a list of strategies for the person with hearing impairment to use when communicating.

- 1) Learn to anticipate and understand the topic of conversation by using situational cues, contextual cues and understanding of the logical sequence of events.
- 2) Face the speaker directly and on the same level whenever possible. Sit across from, and close to, the speaker with your better ear toward the speaker.
- 3) In your home, reduce competing noises by turning off or lowering the volume of TVs, stereos, radios, turning off running water, etc., for improved speech reception.
- 4) Become familiar with the way different people express themselves: facial expression, vocabulary, sentence structure, accent/dialect, etc.
- 5) Maintain an active interest in people and events. Knowing about national and world affairs, as well as those of your community and friends, will help you to follow any discussion or conversation more readily.
- 6) Utilize speechreading to the fullest!
  - a. Concentrate on the thought rather than individual words.
  - b. Do not interrupt the speaker until he/she is finished.
  - c. Observe expressions, gestures and the face of the speaker.
- 7) Remember that communication is a two-way exchange of information. Do not monopolize the conversation in an attempt to direct and control it.
- 8) Remember to wear your hearing aid along with your glasses in order to benefit from the visual and auditory clues that become available. ■

*For more information on how to improve upon and maximize communication if you are hard of hearing, contact: (Insert your business/clinic name, address and contact information here).*

**Fig. 4:** These tips may be presented in a one-page handout for use by hearing-impaired individuals.

that by reading and understanding this material they will be better prepared to use hearing instruments successfully. At this point, patients are advised about subsequent appointments. The first hearing instrument dispensing appointment will take about one hour and will include measures necessary to verify the physical and electroacoustic fit of the instruments. The remainder of the time will consist of teaching the patient the operation and use of the instruments. Patients are told that some modifications to the instruments may be necessary after the initial dispensing appointment, and that they may not necessarily go home with their new instruments after the first dispensing appointment. Similarly, patients are informed that more than one "teaching session" may be necessary before the instruments are taken home. Patients also are prepared to expect at least one follow-up appointment during the initial 30-day trial period.

## The Day of Delivery

The dispensing appointment begins by checking first for the physical and electroacoustic fit of the instruments. This is done prior to beginning the orientation session. It is not the purpose of this article to describe the validation process, but just as selection should not be minimized, neither should validation of fitting. A focus is made on defining what is audible to the patient given various input levels, and we carefully verify maximum output limiting. Once the fit has been appropriately verified and modifications have been made, the teaching/counseling begins. As stated previously, it is critical to include a family member or significant other at this point in the process. For those patients who have significant difficulty understanding one-on-one conversation, an assistive listening device is used during instruction. Alternatively, one aid of a binaural set may be worn. We keep a small sound level meter handy among the supplies in our hearing instrument dispensing room. This enables monitoring the target conversational level of 60-70 dB SPL during the orientation session. There is a tendency to get loud by the end of the day. Our initial orientation session is comprised of two components. The first is instrument operation, and the second is instrument use.

## Instrument Operation

The operation manual provided by the manufacturer is used as a guide to acquaint the patient with the instruments. We include all important information, telephone numbers, etc., in the manufacturer's manual in order to keep all important documents in one place for the user. We begin by introducing the visible landmarks on the hearing instruments. The clinician goes through the manual with the patient, demonstrating operation of the volume control, on/off/telephone switches, multiple memories, remote controls, etc. The focus during this time is on operation (literally manipulating switches and knowing where they are), as opposed to use of the operations. At this first orientation session, particularly for first-time users with telecoils and/or multiple memories, we often limit the instruction to the operation of the microphone on its "main" setting. At the follow up visit, we then reintroduce the more complex operations (e.g., multiple memories), with demonstration and practice included. Before the aids are sent home, we require that the patient demonstrate competency in insertion and removal of the batteries and the hearing instruments.

The dispenser refers to the Hearing Aid Operation Checklist (Fig. 3) while conducting the initial portion of the learning session. This checklist ensures that the

basic components of instrument operation have been reviewed. It includes the operation of any available memories, as well as blank spaces where the clinician may add other features or options specific to the instrument.

**Instrument Use**

Having completed all items in the check list, the dispenser moves on to the instrument use portion of the orientation. This format is used for both new and experienced users. It may not be appropriate to assume that experienced users can forego a detailed introduction to the new instrument, particularly in the case of multimemory instruments or those with updated features or options (i.e., direct audio input, remote control). The value of the instrument is only as good as the patient's ability to appropriately operate its controls.

The Instrument Use discussion is conducted with the hearing instruments worn with the volume control set at a comfortable level, while our target conversational level (still 60-70 dB SPL) is used. The first topic covered relates to the patient's perception of hearing his/her own voice when the hearing instruments are worn. The hurdle of the new sound of one's own voice is often the first step in adjustment. The best way to do this is to minimize the hurdle by using a long (deeply inserted) earmold<sup>14</sup> and by using appropriate venting. A recording that illustrates how awful one's voice can sound with a shallow insertion hearing instrument is now available<sup>15</sup> and will convince dispensers not to say, "Don't worry you'll get used to it."

We next allow for some general conversation among the patient, clinician and family so that the sensation of new sound can be experienced naturally, while background noise is at a minimum. Patients are then introduced to the concept of competing background noise. A controlled demonstration is presented, once again attempting to foster realistic expectations for the early period of use. The clinician begins by explaining the inherent challenges of listening in noise. A multispeaker babble tape is turned on, set at 70 dB SPL (at the patient's ear) angled from behind the patient's chair. The discussion is continued, focusing briefly on listening strategies that may be helpful for maximizing speech understanding (Fig. 4). For patients using multimemory instruments, this is a good time to demonstrate the use of the memories programmed for background noise. The multimemory user should be instructed as to how to return to Memory 1 at any time (e.g., on/off switch, removing and reinserting the battery, or pressing a button on the remote control). This method should be written in the user's manual. This is like a safety net and will help reduce frustration in the beginning of the trial period. The

patient is given ample opportunity to ask questions throughout this orientation session.

**The Wearing Schedule: Less is More**

At this point, all patients are provided with a wearing schedule and explained in detail how the schedule is to be followed (Fig. 5). The "Maximum In" column refers to consecutive number of hours during which the instruments should be worn at a comfortable volume setting. The "Minimum Out" column refers to an unaided rest time. As noted on Fig. 5, a number is assigned to each day that the instrument has been used (i.e., the day the aid is dispensed = Day 1, the day after the aid is dispensed = Day 2, etc.). Patients are instructed to wear the hearing instruments for not more

**Hearing Aid Wearing Schedule**

| Days of Use Category | Maximum In | Minimum Out | Maximum In | Listening     |
|----------------------|------------|-------------|------------|---------------|
| Day 1                | 1 hour     | 1 hour      | 1 hour     | A+B           |
| Day 2                | 2 hours    | 1 hour      | 2 hours    | A+B           |
| Day 3                | 3 hours    | 1 hour      | 3 hours    | A+B           |
| Day 4                | 4 hours    | 1 hour      | 4 hours    | A+B+C         |
| Day 5                | 5 hours    | 1 hour      | 5 hours    | A+B+C         |
| Day 6                | 6 hours    | 1 hour      | 6 hours    | A+B+C+D       |
| Day 7                | 7 hours    | 1 hour      | 7 hours    | A+B+C+D       |
| Day 8                | 8 hours    | 1 hour      | 8 hours    | A+B+C+D+E     |
| Day 9                | 9 hours    | 1 hour      | 9 hours    | A+B+C+D+E+F+G |

A. Inside your home, listening to quiet household sounds (e.g., water from faucet, toilet flushing, doorbell ringing, fan...).

B. Radio, television, quiet conversation with low background noise.

C. Quiet indoor work activities at home or office.

D. Quiet outdoor activities (e.g., gardening, walking, visiting in backyard).

E. Group conversation, dinner table discussion, entertaining visitors, driving car.

F. Theater, worship, classroom, other group listening.

G. Noisy work activities, back seat of car.

H. Other: \_\_\_\_\_.

I. Other: \_\_\_\_\_.

Fig. 5: Example of Hearing Instrument Wearing Schedule.

**Hearing Aid Commentary**

| Listening Category                 | Configuration 1<br>No Hearing Aids | Configuration 2<br>Hearing Aid Set to: mic | Configuration 3<br>Hearing Aid Set to: FM | Configuration 4<br>Hearing Aid Set to: FM+mic | Configuration 5 |
|------------------------------------|------------------------------------|--------------------------------------------|-------------------------------------------|-----------------------------------------------|-----------------|
| Quiet Conversation at home         |                                    |                                            |                                           |                                               |                 |
| Conversation with background noise |                                    |                                            |                                           |                                               |                 |
| Dinner Table                       |                                    |                                            |                                           |                                               |                 |
| Watching TV                        |                                    |                                            |                                           |                                               |                 |
| Back Seat of Car                   |                                    |                                            |                                           |                                               |                 |
| Talking on Telephone               |                                    |                                            | XXXXXXXX<br>XXXXXXXX                      | XXXXXXXX<br>XXXXXXXX                          |                 |
| Hearing Telephone Ring             |                                    |                                            | XXXXXXXX<br>XXXXXXXX                      | XXXXXXXX<br>XXXXXXXX                          |                 |
| Classroom Listening                |                                    |                                            |                                           |                                               |                 |
| Fencing                            |                                    |                                            |                                           |                                               |                 |

Fig. 6: Example of a Hearing Aid Commentary Form.

than the number of consecutive hours equal to the days of use. After each period of use, there should be a minimum of 1 hour when the instrument is kept out. Following this "rest time," the instrument can be put back in for the maximum consecutive number of hours allowed. This in/out sequence can be repeated throughout the patient's waking hours.

## TIPS

### Tips for Hearing Aid Instruction.

- The patient's reaction to the "new" sound of his/her own voice may often serve as a prognostic indicator of overall hearing aid success.
- Leave the patient alone to fumble with battery and instrument insertion.
- Teach hearing aid insertion by beginning with removal.
- Have the patient use tabs from the back of the battery to mark calendar for battery use.
- During the time that the aid(s) are worn in the clinic, the VC should be set to an audible, but comfortably soft level.
- As the dispensing appointment reaches its conclusion the patient is asked to remove the hearing aids, open the battery doors, wipe off the instruments, and store them in the appropriate container.

throughout the patient's waking hours.

As seen in Fig. 5, our wearing schedule shows the patient the order in which aided listening categories should be encountered (as far as can be controlled). Listening categories are assigned a letter value beginning with A equal to the least challenging, and to G equal to the most challenging. Two listening categories (H, I) are left open to be customized for the patient. The clinician assigns all categories to the day(s)

deemed most appropriate based on anticipated level of difficulty for the individual. For example, a patient who is anxious or timid about using new instruments may be advised to spend Day 1 wearing the instruments only for Category A activities. An active and outgoing retiree, who spends time gardening and visiting with neighbors, may do fine with Categories A,B,C, and D on Day 3.

Patients are encouraged to begin aided use in a quiet place at home, shortly after returning from the clinic. This

should begin the first hour of Day 1. Patients are actually instructed to go home and to put in the hearing instruments, turning the VC to a comfortable level (using their own voice as a guide). The patient is instructed to do a "listening tour" of household sounds (Category A). Such sounds could include water running in the kitchen or bath, air conditioner, fan, cellar door closing, toilet flushing, etc. After the first one-hour rest time, the progression to radio, television or quiet conversation can take place. The progression to more difficult listening situations is done in gradual steps for all patients, though the pace may vary depending on individual circumstances.

The listening situations (A-G) loosely represent the scales on the Profile for Hearing Aid Benefit<sup>6,7</sup> (A = aversiveness to sounds; B = ease of communication; C and D = familiar talkers; E = background noise; F = background noise and reduced cues; and G = reduced cues). Since the PHAB is used as a post-test, make sure the individual has listening experience within the various categories.

Our experience reveals that this conservative approach to hearing instrument adjustment serves to minimize any physical and/or auditory discomfort encountered by first-time users. Experienced users may need time to adapt to the altered auditory image presented by a new hearing instrument. There are data to suggest the need for a learning/adaptation period before the hearing instrument user is using amplification and/or signal processing to its full advantage.<sup>16,17,18,19,20</sup> For just this reason, all patients (including previous users) are encouraged to follow the wearing schedule. On occasion, it may be necessary for experienced users to wear their previously worn instruments during the "Minimum Out" period when they do not feel that they can go without amplification during any part of the day. With a few special cases, this has worked well in smoothing the transition from the old to the new instruments. Whether this may slow down or alter any adaptation that is required for listening with the new signal is unclear. Since the old hearing instrument will only remain part of the formula for the first nine days, we do not think this is a grave concern. For the patient who is rejecting high frequency amplification because he/she was used to hearing instruments that cut out around 3000 Hz, we have slowly brought up the high frequencies (using a trimmer or programmable hearing instrument) over the trial period. The schedule is based on our observations that a slow paced (gradual) approach to hearing instrument acceptance yields a more satisfactory long-term outcome.

## Hearing Aid Consent Form

I have been provided with the following regarding my hearing instrument fitting:

- 1) Information regarding the benefits of binaural vs. monaural hearing instrument use.
- 2) Information on the use of the "T" coil or direct audio input with my hearing instrument(s).
- 3) Information on special hearing instrument circuitry or technology that may be appropriate for my hearing instrument fitting.
- 4) Information on assistive listening and/or alerting devices necessary to maximize my communication ability and/or safety.
- 5) Information on the operation, maintenance and use of my hearing instrument(s).
- 6) Information regarding hearing instrument insurance programs and the manufacturer's warranty on my instrument.
- 7) Information on the Americans with Disabilities Act (ADA) and my rights under this law.
- 8) Information regarding proper battery storage and the dangers of ingestion of hearing instrument batteries.

(Patient Signature, Date) (Dispenser Signature, Date)

## The Hearing Aid Commentary

In addition to the Hearing Aid Wearing Schedule, we provide the patient with the Hearing Aid Commentary Form (Fig. 6). The patient is asked to record notes on communication outcomes in the listening categories using a variety of hearing instrument configurations. This completed form is used to guide the follow-up visit. The Hearing Aid Commentary is completed by the dispenser based on the patient's Hearing Demand, Ability, and Need Profile and the Patient Expectation and Perception Worksheet. Therefore, the listening categories reflect important conditions for the patient. The configurations should be dictated by what the dispenser and patient are trying to evaluate. For example, a patient might be using a new hearing instrument with a built-in FM receiver and trying to determine in which situations the FM should be used (if at all). The dispenser should shade in the boxes that would not make sense for a particular configuration (e.g., you would not use the FM setting to hear the telephone ring). Several manufacturers

Fig. 7: Example of a Hearing Aid Consent Form.

provide useful tools (e.g., the Oticon User's Diary) to encourage adjustment and to monitor progress. We prefer to use our own forms and have the patient associate them with our service.

Before the patient leaves, a return visit is scheduled to occur in 1-2 weeks from the delivery date. Occasionally, if a patient appears to need some extra hand-holding, the follow up appointment is scheduled for some time in the next 3-4 days. In addition to the scheduled follow-up appointment, it is emphasized that the patient should call immediately if questions or problems arise with their hearing instruments. The clinic phone number is written inside the manufacturer's manual so that it is readily available to the patient. The approach here is to intercept problems while they are still small, avoiding a disastrous first week for the user (and dispenser).

**The Consent Form**

As the orientation session reaches its close, the dispenser and patient review and sign the Hearing Aid Consent Form (Fig. 7). This form serves as a checklist for the dispenser to ensure that the basic information has been imparted to the patient. The handout we use to summarize the Americans with Disabilities Act is included in Fig. 9. This is given to all of our patients whether they are pursuing amplification or not.

**The Follow-up Visit**

Try to phone all new users within the first 2-3 days of the delivery. Patients are very responsive to a surprise phone call and a "We just wanted to know how things are going." At this point, they have usually come up with a

Checklist for 1 to 2 Week Follow-Up Visit

| ITEM                        | OUTCOME | ACTION PLAN | ✓ |
|-----------------------------|---------|-------------|---|
| Hearing Aid Commentary      |         |             |   |
| Hours Worn Per Day          |         |             |   |
| Able to Insert Aid          |         |             |   |
| Able to Remove Aid          |         |             |   |
| Cleaning & Maintenance      |         |             |   |
| Situations of Best Success  |         |             |   |
| Situations of Least Success |         |             |   |
| Assistive Devices           |         |             |   |
| Aural Rehab Follow-Up       |         |             |   |
| Review Telephone Use        |         |             |   |
| Memory/Features Options     |         |             |   |
| Warranty Expiration         |         |             |   |
| Insurance Information       |         |             |   |
| Consent Form Signed         |         |             |   |

✓ = Check off item if outcome is positive or when action plan is successfully completed.

\_\_\_\_\_  
Patient Signature

\_\_\_\_\_  
Date

Fig. 8: Checklist for 1 to 2 Week Follow-Up Visit

**The Americans with Disabilities Act (ADA)**

The Americans with Disabilities Act (ADA) was designed to ensure access to goods, services and facilities for all people with disabilities. This legislation provides protection in almost every aspect of society.

**Title I: Employment**

Title I of the ADA only applies to qualified individuals with disabilities, meaning only those individuals with or without reasonable accommodation, who can perform the essential functions of a particular employment position. This law prohibits employers from discrimination against a qualified individual with a disability in these areas: job application procedures, hiring, discharge, compensation, advancement and any other privileges of employment. These regulations not only include those individuals not already hired, but also those individuals with disabilities who are currently employed. In some situations, tax benefits are available to employers when they comply with the ADA employment requirements.

**Title II: State & Local Government**

Title II of the ADA ensures that all services, programs and facilities of state/local government agencies can be used by people with disabilities. These agencies include schools, motor vehicle departments, police/fire departments, parks and recreational programs, jails/prisons, libraries, food stamp offices, welfare and social services, public hospitals, clinics and counseling centers. Under the ADA, a government agency cannot exclude a person with a disability from participating in a service; deny the benefits or services, programs or activities of the agency; or subject the person to discrimination by reason of disability.

**Title III: Public Accommodations**

Under Title III of the ADA, people with disabilities will have equal access to all public places such as theaters, restaurants, doctors' offices, banks, stores and private schools. All of these facilities are required to provide auxiliary aids and services to ensure effective communication with deaf and hard-of-hearing individuals. Auxiliary aids include such things as interpreters, telecommunication devices, written materials, assistive devices and closed captioning. Also, public accommodations have to modify their policies to allow the use of guide or signal dogs. For existing facilities, the ADA requires that they remove any structural communication barriers. Any newly constructed building must be accessible to disabled individuals. (Note: Religious and private clubs are exempt from these regulations.)

**Title IV: Telecommunications**

This regulation requires that all telephone companies provide both local and long distance telecommunications relay service, 24-hours-a-day, from any location. Those individuals using this service may not be charged any more than a voice telephone user would be charged for the same call. Telephone companies also are required to publish information about their relay service. This includes their phone numbers in telephone books, billing inserts and through directory assistance. Title IV also includes television. It mandates that all public service announcements that are produced or funded by the federal government include closed captioning. By 1994, all new televisions with 13" screens or larger will have a computer chip built in that will decipher closed captioning. ■

Fig. 9: Americans with Disabilities Act Information Handout. (Handed out as single sheet to clients.)

new question or situation to discuss. It may be found that the client should come in sooner than the next scheduled visit (e.g., allergic to the earmold and ear canal is swollen but "I was going to wait until my appointment with you").

The Clinician Checklist for 1 to 2 Week Follow-Up Visit (Fig. 8) guides the dispenser through this appointment. The items listed are addressed in terms of the need for further action. For all the items listed on the checklist, space is provided for an action plan. Such an action plan could vary from adding a wind hood to ordering an amplified smoke detector. It is helpful to have this organized list of tasks necessary to complete the service for that day. A check is placed in the right column when the action plan is successfully completed.

The Hearing Aid Commentary is used to identify strengths and weaknesses of the fitting. Comments on this sheet may lead the dispenser to recommend particular listening configurations or may point to unresolved problems that will require special assistive devices. As mentioned previously, for patients with telecoils and/or multiple memory instruments, we include demonstration and practice at the time of the follow-up visit. For users of multi-memory technology, it is essential that they are comfortable selecting each memory and that they understand which memory is to be used in a particular situation. The dispenser should provide a written "map" of how to select the memory for a particular situation. Phonak, Inc., includes a feature in their programmable software where the dispenser types in individualized memory descriptions that are printed out with the hearing instrument information and can be given directly to the patient.

The patient is given the Patient Expectation and Perception Worksheet (Fig. 2) when the dispenser gets to the situations of best and least success on the Checklist for 1 to 2 Week Follow-Up Visit. The patient marks "HA" under the label that indicates the perceived level of success. If the "HA" mark falls short of the patient's expectations, an action plan (or appropriate counseling) should be initiated.

The sophisticated user who has mastered the operation and use of the hearing instruments at this point may have no need to schedule further follow-up visits before a year has passed. Other patients may have return visits scheduled weekly, until the hearing instrument and/or battery can be independently inserted and removed. Still others should come back after they have had a week or two of practice with the multi-memory feature. You may want to send these individuals home with a new Hearing Aid Commentary Form. If another follow-up visit is not scheduled, call the patient at the end of the 30-day trial to confirm that no other modifications are necessary at this time.

Re-administer the PHAB<sup>6,7</sup> when all of the check marks are entered into the right column of the Checklist for 1 to 2 Week Follow-Up Visit. This is a final tool used to identify areas that still may need to be addressed. Ideally, the plan, as proposed, resolves the problems prior to the post-test administration of the PHAB, and the measurement is simply used to quantify change for a particular patient. Although the 30-day trial comes to an end, it is advisable to maintain contact with your hearing instrument users to ensure continued satisfaction. The PHAB can be administered again, several months later, in order to evaluate change due to listening experience. You also may want to employ a customer satisfaction-type survey 90 days or more after purchase. Make sure you have some type of automatic means of keeping in touch with your hearing instrument users (e.g., battery clubs, newsletters, promotions, etc.). The reader who is interested in assessing all aspects of his/her hearing

instrument delivery system is referred to the Practice Effectiveness Audit.<sup>21</sup> This is a checklist from point of contact to post-fitting that allows you to systematically evaluate your current attitudes, policies and procedures.

### Summary

A comprehensive program for hearing instrument orientation and adjustment has been presented. The reader and potential user of this program should understand that we dispense hearing instruments in the context of providing comprehensive hearing management. Therefore the results of the initial needs assessment may lead us to a variety of solutions including hearing instruments. ■

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