

## CLINICAL HEARING AID DISPENSING: A FIVE YEAR REVIEW\*

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The provision of quality otolaryngological services in our ever-changing world requires not only constant study of new medical and scientific developments, but also a philosophical insight into the changes in the patient population and a resulting continual self appraisal regarding the provision of services. Only through such constant reassessment of professional services can responsiveness to patients needs be maintained. As a result of current trends in amplification technology, legislative intervention, and patient populations, many otolaryngologists and audiologists have included the dispensing of hearing aids as a part of their provision of clinical services.<sup>1</sup>

In 1973, while designing a new office facility, we reviewed our professional objectives for the provision of better patient services, and made the decision to include hearing aid dispensing for those patients whose hearing loss was not amenable to medical or surgical treatment.<sup>2</sup> Our primary philosophical objective in this decision was to provide a more all-encompassing total hearing health care within the clinic setting for patients with all type of hearing loss. Secondary objectives included the following: establishment of a constant quality dispensing service, improved patient follow-up, convenience to the patient,

research opportunities, and reduced cost to the patient.

Originally, the question in the minds of many otolaryngologists and audiologists was whether or not the dispensing of aids should be included within the realm of clinical services. At present, the question is not whether or not dispensing should be included within the services of an otolaryngological/audiological clinic, but rather, how to best provide those services in an efficient and effective manner. This change of philosophical focus reflects the widening expansion of the roles of both the otolaryngologist and the audiologist<sup>3</sup> as a result of that growing portion of patient population which has a hearing loss not amenable to medical or surgical treatment.

Hodgson and Skinner<sup>4</sup> have specified five principles associated with effective patient use of amplification. These principles also outline the professional objectives incumbent upon dispensing otolaryngologists and audiologists: 1) all patients who choose to consider amplification should receive a professional otologic examination and audiological evaluation done under adequate conditions by qualified professionals; 2) the selection, fitting and orientation regarding the use of a hearing aid should be integral aspects of

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a program in audiologic habilitation. This may include the trial use of amplification prior to purchase in order to determine the adaptability of a patient to amplification and the suitability of a particular hearing aid: 3) patients who choose to try amplification should be assured of objective advice in hearing aid selection, offered solely on the basis of the needs of the patient; this is not in conflict with provision of products or services for profit; rather, a patient should receive medical and/or surgical treatment or a prosthetic device based upon an objective evaluation of need; 4) prosthetic devices and related services should be provided to the patient-consumer at a reasonable cost; 5) adequate service and professional follow-up should be available for patients who use prosthetic devices just as for patients who receive follow-up evaluation and treatment provided for other hearing health needs.

Five years' experience with dispensing supports the concept that the hearing aid is a most integral part of the audiologic habilitation process. Our method for guiding clinic flow on a daily basis is designed to ensure a format of complete evaluation, examination and treatment as needed for each patient.<sup>5</sup> Procedures for each patient receiving a hearing aid fitting include: audiological evaluation, otolaryngological examination, physician counseling, audiological counseling, ear mold impression, hearing aid evaluation and fitting, thirty day trial period, and follow-up hearing aid counseling.

A typical fitting can be divided into three basic visits. During the initial visit, patients having a complaint of hearing loss are seen first in the audiology department for a complete audiological evaluation. This includes air and bone conduction thresholds, speech reception and discrimination measurements, and tympanometric and acoustic reflex measurements. Additional special tests, including recruitment measures, Bekey audiometry, and brain stem electric response audiometry, are performed as indicated.

The patient is then seen by the otolaryngologist<sup>6</sup> for a complete review of past and current medical history, a microscopic exam-

ination of ear canals and drums, and a thorough examination of the nose, throat and neck. Diagnosis is made, and an explanation is given by the physician as to the probable cause and available treatment. When it is determined that medical or surgical treatment is not available for the type of loss identified, the patient is referred for aural rehabilitative counseling. Referral may also be made if surgical treatment is declined by patient choice, or when hearing levels are not in the normal range following treatment. This counseling may occur on one or more visits depending on the severity of the problem involved. Often, at the end of the initial aural rehabilitative counseling session, an impression is made for a custom mold.

After receipt of the ear mold from an outside laboratory, the patient returns for a second visit, at which time a hearing aid evaluation is carried out in sound field, comparing two or three different aids. Once the audiologist has selected the appropriate aid, the patient receives guidelines for adjustment to amplification. This orientation and counseling session is an essential part of the evaluation and contributes greatly to high patient acceptance levels.

Near the end of the 30-day trial period, the patient returns for a follow-up visit. During this visit, the performance of the patient's aid is electroacoustically analyzed, and the patient's performance with the aid is rechecked in sound field. Any problems the patient is having with adjustment to amplification are discussed, and suggestions are made for their correction.

### Results:

Results of five years' experience in clinical hearing aid dispensing provide the necessary statistical data for measuring clinic progress toward meeting the aforementioned objectives. A within-clinic dispensary has established a constant quality hearing aid service. Having the dispensary also ensures that the patients are properly counseled, evaluated, and fitted and that adequate record keeping is maintained. This system leads to much improved audiological follow-up regarding

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rehabilitative procedures and progress, and medical follow-up. Prior to having the dispensary within the clinic, many patients failed to return for medical re-examination following the initial diagnosis and referral for outside hearing aid fitting. This may have resulted in lack of medical attention to subsequent ear pathology amenable to treatment.

Patients find it convenient to be able to have their medical status assessed by the otolaryngologist, to have their hearing evaluated by the audiologist, and to be able to have not only recommendations regarding an aid, but the actual fitting and guidance during the adjustment period, all from the same trusted professional group. Under these circumstances, they also feel more assured in returning for follow-up visits for hearing re-check, medical reassessments and electroacoustic analysis of their aids. Patients who are in need of amplification have often related their appreciation for the interest and concern which they feel is reflected by within-clinic dispensing.

Having the dispensary within the office has created a natural vehicle for related projects in research. For instance, the investigation and use of tinnitus masking devices has been much easier with the instrumentation already in use for hearing aid evaluation. Firsthand experience with new types of aid related technological innovations provides the optimum method for assessing their performance in specified types of hearing loss.

The total cost to the patient for a hearing aid reflects the invoiced cost of the product, an overhead factor and professional fees. Overhead charges are determined by a cost accounting analysis of all dispensary related operating expenses.<sup>7</sup> The dispensary fee structure has resulted in a monaural fitting costing approximately 25% less than the average price offered by hearing aid dealers in this area, while a binaural fitting may be 40% less than comparable dealer prices.

A current statistical review shows a total of 1,319 aids fitted since the inception of the dispensary in July, 1974. The ratio of patients using amplification is fairly even for both sexes.

An analysis of age groups reveals that three percent (3%) of the aids have been fitted on pre-school children, eight percent (8%) on school-age children, 30% on adults under 60 years of age and 59% on adults over 60 years.

Of the aids fitted in the last five years, 83% have been postauricular, 11% in the ear, three percent (3%) eyeglass aids and three percent (3%) body aids. Four percent (4%) of the dispensed aids are a form of CROS or BICROS instrument.

Eighty-nine percent (89%) of the patients fitted showed sensori-neural hearing loss, four percent (4%) conductive loss and seven percent (7%) mixed loss. Of the sensorineural losses, 11% show normal hearing through 1000 Hertz. In examining the degrees of loss fitted, 35% of the patient showed mild loss (less than 40 dB PTA); 48% moderate loss (41 to 60 dB PTA); 12% severe loss (61 to 80 dB PTA); and five percent (5%) profound loss (81 dB PTA or more).

Ten percent (10%) of the patients have returned their aid following the 30-day trial. Reasons for return include lack of significant improvement in communicative abilities, geriatric adjustment problems, emotional and psychological rejection, cosmetic rejection and financial difficulties.

Records indicate that 455 aids or 34% have been returned for factory service. When electroacoustic analysis reveals that an aid is not performing according to specifications, the aid is returned to the manufacturer for repair. During this time, loaner aids are available to patients.

### Discussion:

Hearing aid dispensing within the otolaryngological/audiological clinic represents an expansion of services concomitant with today's technological developments in amplification.<sup>8</sup> Conceptually, the fitting of a hearing aid should be considered as an integral component of the aural rehabilitative process. Oyer and Frankman<sup>9</sup> have identified six major stages in the aural rehabilitative process: 1) Deficit recognition, 2) motivation, 3) identification and acquisition of professional

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assistance, 4) measurement and evaluation of auditory deficit and handicap, 5) rehabilitative assistance and 6) evaluation of the effects of training and counseling. Who could be more appropriately trained, adequately equipped and interested in supervising these processes in aural rehabilitation than the otolaryngological/audiological team? As a part of role expansion, otolaryngologists should now not only make the diagnosis and evaluate whether or not amplification is indicated, but also counsel and motivate the patient for consideration of amplification. It is now possible for the large majority of hearing impaired persons to benefit from the use of an aid. This includes most patients with sensorineural hearing loss. The otolaryngologist provides the patient with a better basis to make an intelligent decision regarding the benefits of amplification by motivating the patient to consider a trial period.

The audiologist has increased his role to include the full process involved in selection and fitting of the aid, as well as supervision of the rehabilitation period. After a working diagnosis is established, a treatment plan based on any combination of the modalities of surgery, medicine and/or amplification can be formulated. The responsibility of the otolaryngologist and audiologist for follow-up continues regardless of whether the treatment is medical, surgical or prosthetic. If the treatment indicated is amplification, care and follow-up by the otolaryngologist remain a significant part of his responsibility.

### Summary

Results of five years' experience with the dispensing of aids in otolaryngological clinic have demonstrated benefits to both patients and to the clinic practice. No significant problems have been experienced. With the addition of a dispensary within the clinic, the provision of adequate hearing health services is assured for patients with all types of hearing loss. Having a within-clinic dispensary can provide a coordinated program of professional management for the aural rehabilitation process; in order to provide the professional management, qualified professionals and adequate instrumentation are necessary. When a hearing aid is dispensed in such a program, the quality of patient care for the hearing impaired can be significantly improved.

Our initial five years' experience has also served to point up future clinical needs. Foremost is the future development of a supportive all-encompassing aural rehabilitative program, including speech and language therapy, auditory training, speech reading and other therapeutic measures to assure the most effective utilization of amplification and residual hearing. In addition, such a program should be designed around and assist in developing tools for the evaluation of the efficacy of various types of therapeutic measures in order to improve our clinical knowledge in the area of aural rehabilitation.

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