

Current Canadian Clinical Concepts

The Mount Sinai Hospital "A Hearing Aid and Aural Rehabilitation Follow-up Program" began in 1976 as a lab notebook listing patients seen for hearing aid evaluations. Since that time, the program has expanded in terms of the numbers of patients seen, in terms of the complexity of recommendations made, and in terms of the follow-up provided. Hand in hand with the evolution of the program have come new interests in, and new needs for, record-keeping. Forms were developed to facilitate charting and computer record-keeping of individual patient information for each aspect of the program. A simple description of the computer database system and analysis of selected group findings for an annual caseload of 800 patients is outlined.

Anyone interested in further details may contact the authors. Comments, suggestions and contributed articles should be sent to the Co-ordinator:

Sister Janet Malone
Colchester-East Hants District School Board
P.O. Box 975
Truro, N.S., B2N 5G8

A HEARING AID AND AURAL REHABILITATION FOLLOW-UP PROGRAM

From: M. Kathleen Pichora Fuller, MSc.,
Martyn L. Hyde, Ph.D.,
Peter W. Alberti, MB, FRCS (C)
Audiology Unit and Silverman Hearing Research
Laboratory, Department of Otolaryngology,
Mount Sinai Hospital,
600 University Avenue,
Toronto, Ontario, M5G 1X5

Over the last five years, the caseload for aural rehabilitation has risen from 350 to 800 patients annually. With new hearing aid and earmold technology, even basic hearing aid fitting can be complex. Beyond recommendation of a hearing aid, hearing aid accessories, such as audio input attachments, and other communication aids, such as a telephone amplifier, may be recommended. Rehabilitation can be optimized through classes which aim to provide, for both the patient and his/her family, an understanding of hearing loss and means for dealing with it. An expanded follow-up after the hearing aid evaluation now consists of at least a one month check near the end of the trial period, and a ten month check near the expiry of the one year warranty on the hearing aid. If a patient does not return for follow-up appointments, every

effort is made to contact him/her by phone or letter.

The reasons for a new record-keeping system included: 1. documentation/charting of treatments, 2. queuing of follow-up contacts, 3. monitoring of patient progress, 4. measurement of program effectiveness, 5. patient care audit, 6. gathering of caseload statistics, and 7. research.

A revised non-computerized follow-up system was instituted in 1980 with the view that this system would be a pilot for a computerized system. Strengths and weaknesses of the old forms were evaluated and four new colour-coded forms, one for the hearing aid evaluation, one for information on prior hearing aid fittings, one for the one month contact, and one for the ten month contact, were devised. Categories of information, such as patient identification,

description of the hearing aid fitting, hours of use of the aid, are recorded. In many instances, the questions on two or three forms are identical thereby allowing pre- and post- rehabilitation comparisons. For instance, hours of aid use and patient satisfaction with aid performance in various situations are recorded for a previous aid fitting and for the new aid at the one month contact and the ten month contact. It is intended to add information obtained using questionnaires which attempt to assess the psychosocial and vocational aspects of hearing handicap. Other recommendations for aural rehab classes or communication aids are also noted.

Information gathered by means of these forms is now being stored in the Department of Otolaryngology computer database. The information then forms part of a network of databases dealing with otolaryngologic and audiologic information. The database is supported by the departmental PDP 11-23 minicomputer. The database system was designed and programmed in-house. It supports large-scale statistical analyses in several areas; for example, over 5000 cases of WCB compensation assessments, and several hundred neonatal screening tests by brainstem audiometry. It is a valuable tool which is increasingly used to organize, validate, store, and analyse the data for large-scale studies such as this one.

As well as providing for ease of computer entry, these forms now force the audiologist to thoroughly evaluate the aural rehabilitation candidate. D.P. Goldstein and S.D.G. Stephens, (Audiology 20: 432-452, 1981), in their paper "Audiological Rehabilitation: Management Model I", stress the importance of evaluating each patient's needs in terms of each aspect of an aural rehab program. It is felt that the program at Mount Sinai Hospital now achieves this uniformity of patient assessment. More consistent and higher

quality of aural rehab should result. Important considerations for record-keeping are, in fact, important considerations for accurate assessment of the aural rehabilitation needs of patients. These considerations are 1. determination of what information should be obtained, 2. non-ambiguity of information, 3. regularity of information gathering, 4. standardization of recording methods, 5. accuracy of entry of information, and 6. ease of access to information for a variety of purposes.

Preliminary pilot studies conducted using this new system of forms indicate a far from optimal aural rehab service. About 80% of those seen for a hearing aid evaluation receive a new hearing aid recommendation. The other 20% often require adjustment of an old aid, re-instruction in correct use of an old aid, or therapy. Of those who receive a new aid recommendation, 20% never try the aid, 10% try and return the aid, and 70% purchase the aid. Approximately 50% of those who try and reject the aid, and 65% of those who purchase the aid, attend the one month appointment. About 34% of the hearing aid purchasers attend the ten month appointment, and another 13% are reached by phone or letter. Half of those evaluated at ten months is considered to be successfully rehabilitated. Difficulties such as incorrect insertion of the earmold or battery prevent operation of the aid. Hearing aid options such as the telephone switch are used successfully by as few as 12% of patients. Repeated counseling and instruction are prerequisite to optimization of hearing aid use. Those who are considered to be successfully rehabilitated represent only 12% of the original population seen for hearing aid evaluations. The high proportion of unsuccessfully rehabilitated individuals reflects non-compliance, rejection of the aid, loss to follow-up, and difficulties with the aid.

Although virtually all patients seen are informed about the least expensive and most readily available communication aid, the handset amplifier, less than half purchases one. In

addition, less than 5% of patients receive recommendations to purchase other communication aids and only one third complies. Communication aids are not commonly used in Canada and considerable reinforcement of the concept and guidance by the audiologist is required for the patient to implement effective usage of these devices.

It is hoped that this computerized system will allow further exploration of the dynamics of rehabilitation success and failure so that it can be determined when and how much rehabilitation is necessary to optimize patient benefit.

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HEAR HERE

CSHA Members in Print

The following articles by CSHA member, Floyd Rudmin, have recently been published:

Rudmin, F. False Air-Bone Gap. Ear and Hearing, 4: 106-107, 1983.

A case is presented of a severely hearing impaired child with a large air-bone gap on repeated audiological evaluations at several different centres. Tympanometry and exploratory surgery showed no conductive problem. The false air-bone gap was apparently due to unusual vibrotactile sensitivity. A review of the literature is presented as well as some suggested audiological tests.

Rudmin, F. and Cappelli, M. Tone-Taste Synesthesia: A Replication. Perceptual and Motor Skills, 56: 118, 1983.

Holt-Hansen (1968, 1976) had reported that subjects listening to a pulsed pure tone of variable pitch could discriminate a pitch that seemed harmonious with the taste of beer. During cross-modal harmony, the flavour of the beer was enhanced and subjects reported rich, extraordinary experiences. A replication of Holt-Hansen's procedures, which does not include controls on the subjects or the experimenters, failed to replicate the reports of enhanced flavor and rich experiences, but did find a pitch of harmony comparable to that of the earlier reports.

Rudmin, F. Phonetic Factors in the Dichotic Alignment of the Staggered Spondaic Word Test. The Journal of Auditory Research, 21: 247-254, 1981 (printed 1983).

The SSW EC tape, which is widely used in the U.S., was aligned by a perceptual procedure. This study used factor analysis to explore the interactions of acoustic alignment and phonetic variables resulting from that procedure. It appears that 1) initial and final non-sonorant speech signals were valued less than their full durations, except 2) for non-sonorant speech signals in the final position of the second competing monosyllable. This finding is discussed in the context of perceptual centers for words.

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