Hi! With the beginning of fall starts the beginning of school, and again the start of another educational year. This is true also for this fall’s newsletter. The OHC Corner describes many effective tips for teaching adults and keeping their interest in your topic. How often do we talk, lecture or explain to people, only to wonder if they are really listening? This article gives practical tips on how to keep things interesting and hold a person’s attention.

Many OHC’s have asked for help concerning audiometric baseline revision. We offer an excellent guide with rules in the reviewing audiologist or physician either for significant improvement in measured thresholds or for persistent standard threshold shift (STS).

Because the baseline audiogram is so important for detecting hearing change and reacting to prevent additional change, NHCA assigned a special committee to develop guidelines for reviewing audiometric baselines. The 16-member committee conducted research and evaluated various strategies over several years. The guidelines given here, which were approved by the board of NHCA in March 1996, represent the consensus of the committee. Following these guidelines will provide consistency across professional reviewers and audiometric testing service providers, thereby increasing the degree of protection for noise-exposed workers.

Note: although the guidelines require persistence of hearing changes before the baseline is revised, protective follow-up actions for the employee are needed as soon as significant changes for the worse are first shown.

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What’s Inside?

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Update on Worker’s Compensation for Hearing Loss

by Susan C. Meggison, MA, CCC-A
Representative of the American Speech-Language-Hearing Association

The Occupational Hearing Conservationist (OHC) has many duties in a Hearing Conservation Program (HCP). Although prevention of hearing loss is always the primary goal of a successful program, there are times when employees (with or without occupational hearing loss) will file for compensation. It is essential that the OHC be prepared for those times, both by being familiar with hearing loss compensation practices in his or her state jurisdiction, and by maintaining careful and detailed audiometric records which will be of benefit during assessment and processing of a claim.

Up to this time, OHCs have used as a reference a 1992 state survey of workers’ compensation practices for occupational hearing loss conducted by the American Speech-Language-Hearing Association and reprinted in Appendix IV of the CAOHC Hearing Conservation Manual. A new survey of American states/territories and Canadian provinces has been conducted and published in a chapter entitled “Workers’ Compensation” by Robert A. Kirsch, MD and Susan C. Meggison in The Noise Manual, 2nd Edition, American Industrial Hygiene Association, edited by E. H. Berger et al. (2000). The authors obtained the data in late 1998 and early 1999 by a survey of workers’ compensation officials in various jurisdictions. In some states, the state or province supplied a copy of relevant statutes while often simply completed the survey. A detailed summary of the survey results appears in the chapter.

Although the state survey is an excellent tool for general education and comparison purposes, due to the many special circumstances and qualifications surrounding the processing of a workers’ compensation claims for hearing loss, it is important for OHCs to become completely familiar with regulations and procedures within his or her jurisdiction. In practice, hearing loss claims evaluations are subject to many nuances that require an in-depth understanding of applicable regulations and practices. OHCs and their professional supervisors are encouraged to contact the appropriate workers’ compensation office to request the most current and comprehensive information available.

Following are highlights of the survey for U.S. states, territories and other jurisdictions. Please refer to the book chapter for a more complete synopsis of results and for information on Canadian practices.

Calculation of Impairment and Awards

Many methods have been used over the years to calculate: impairment ratings for hearing loss. Results of the survey revealed that the most commonly specified method for calculating hearing impairment is the latest formula recommended by the American Academy of Otolaryngology (AAO), the “AAO-79” method. Over two-thirds of states/territories reported utilizing the AAO-79 formula by specific reference or by virtue of a requirement to follow the most recent American Medical Association workers’ compensation guideline (which specifies use of the AAO-79 formula). Six states reported still using an older AAO method, the “AAO-59” formula, and several states reported having adopted other variations. It is notable that a full third of jurisdictions stated that a specific formula is not required, rather, that impairment ratings are based on “medical evidence.” Table 1 provides a summary of reported impairment formulas currently in use in the U.S.

The process for determining monetary awards for workers’ compensation claims is typically based on applying the impairment rating to a schedule for lump sum payments, or to extended payments based on a percentage of the individual’s wages. There is a great deal of variation across states in the amount of awards provided for occupational hearing loss. Depending on the state, maximum award range from as little as $30,000 to as much as $150,000 over and above replacement of lost wages.

Worker’s Compensation
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The session was turning out just as Joe had feared it would: people were still drifting in twenty minutes after starting time; he was in the middle of his explanation of the decibel, and Terry and Jim were carrying on a private conversation in the back of the room; Sue was falling asleep in a corner, and several others were reading the handout material he had given them yesterday. "Oh, well," he said to himself, "I'll just finish going through my outline and send them back to work. If they don't care about protecting their hearing, I can't make them care." He carefully avoided thinking about the remaining twenty sessions for this year.

You may enjoy teaching, or you may hate it. More important is how you feel about your students. Do you think of them as people? Are the sessions more enjoyable for you and your students?

Remember adult learning characteristics:
Adults have a lot going on in their lives and, often, hearing conservation training is not likely to be top priority on their list. You have to give them a reason to invest their time in what you have to say. Sending a message that OSHA required training will be held next Wednesday is unlikely to get an enthusiastic response. How about telling them that an information session will be held that will help them protect their hearing? It can work!

Adults want to learn things that will be of direct value to them. Adults want and expect their learning to be applicable to problems and situations they meet daily. They won't be very interested in calculating decibel levels from acoustic power measurements, but they just might appreciate learning how to insert an earplug so it doesn't hurt. Design the objectives for your training with this in mind (discussed below).

Adults have an extensive base of experience and beliefs that they bring into the training room. Take advantage of experience, tips and techniques that members of the group can share:

there is a hearing-impaired worker who is willing to tell others of his experience to illustrate the importance of hearing conservation?

Older people may not hear or see as well as younger ones. If you have a large group, you may try to speak up or use a microphone. If you have handouts or visuals, use larger type, fewer words. Power point and overhead transparencies should have no more than six lines of six words each.

Some people learn better from the spoken word, some from written material, some from pictures. Make important points using all three modes. Does everyone read and speak English? You may need to instruct in another language, use visual illustrations, or make sure that all the important information is in spoken form for those whose reading skills are limited.

Prepare thoroughly. What do you want people to know and do as a result of your training? Write specific objectives for the session. Use action verbs, stating what you would like the participants to be able to do after the session. For example: Wear hearing protection at all times in noise exposure areas. Conduct an audiometer calibration, or Identify the abnormal audiogram from a sample of four. These objectives are the core of what you are teaching, and all of your techniques and materials should focus on achieving them. Practice the learning material into simple stages. Take large concepts and break them down into small easy pieces. Start with simple concepts that the participants already understand, then move into more complicated ideas. Repeat the important points frequently.

In the classroom:
Maintain control of the session.

• Start on time. If you wait until everyone has arrived, you just waste the time of everyone who was on time. The message to them is "your time isn't as important as that of the latecomers." When someone comes in late, you can call attention to it in a friendly manner: "Hi, Charlie. Too bad you missed the opening points, they were important. Maybe someone else can fill you in later." Weed will eventually get around that 10 AM starting time really means 10 AM.

• Stick to the subject. Remember your objectives. If a discussion starts on something that's important, but isn't on your agenda, save it for another meeting. If a participant drifts off into irrelevancies, politely redirect them: "Interesting point, Fred, maybe we can cover this later. Bring it up at the end of the session."

• Insist on discipline. If participants start a side conversation, politely redirect their attention to the topic at hand: "Phancy, this is an important point, and I'm sure you won't want to miss it."

• End on time. Your participants have other important things to do, and so do you.

People remember 70% of what they hear in the first twenty minutes of a training session; they remember 15% of what they hear in the last twenty minutes. Go over the hand stuff first, and save the practice sessions and entertaining videos for the end.

Change presentation style frequently. An hour of lecture is a lot. Talk for thirty minutes, then start a discussion, show a video, hold a practice session, give a quiz or written exercise. After ten minutes of lecturing from the front of the room, walk to the back and continue. Breaking up the "energy flow" of a training session keeps the audience from getting stiff mental muscles.

Get feedback. Give a short quiz and have participants fill out an evaluation form. Does he/she feel more confident in whether he/she actually learned what you wanted them to, and what you can do to improve your next session.

A month after that first disastrous training session, Joe was finishing another. He looked over the grades on the quiz; everyone got 100%. Again. As he began to thank everyone for coming, they all sat down and applauded. Smiling shyly, he thought, "This is embarrassing. Once in a while, OK, but every class?"
One of the OHC's most important responsibilities is to communicate the value of hearing conservation to employees in the workplace. Most often, these opportunities occur in the context of audiometric testing or annual hearing conservation training. As a practicing OHC you have probably developed your own collection of informative materials and handouts that are easy to use and that have proven to be popular with employees. It's especially nice when one of these items finds its way home with an employee so that the message of hearing conservation gets communicated to an even wider audience. One of your professional goals should be to identify opportunities, even beyond the scope of your job, to educate and motivate people of all ages to preserve their hearing. The face-paced world of this issue of UPDATE is not just a technical activity "placemat" entitled, Noise and Your Ears: Worth Hearing About. It was originally developed as an educational outreach handout for elementary school children, to be used in the context of a career talk on occupational hearing conservation. It's also been distributed widely in the workplace, through booklets airline passengers receive during their flight, and National Security Week, and at science and health-related community affairs attended by the general public.

Although it was designed to appeal to younger audiences, the placemat is surprisingly popular with adults! Because the word searches, scrambles, mazes and crossword puzzles appear so cartoon-like and amusing, adults can't resist "playing" with them while waiting for an audiogram or for the hearing conservation training class to begin. Be sure to make a few spare copies for your next training session or for those employees who complete theirs before class and want extras to take home for their families. That's a sure sign that your program is succeeding!

HERE IT IS! ▶

Remove the entire center section (pages 5 thru 8) for reproduction and use in your hearing conservation program.

UPCOMING OHC CERTIFICATION AND RECERTIFICATION COURSES* 2000

The listed dates indicate day one of the scheduled classes; certification courses are 20 hours in length; recertification classes are 8 hours. Approved as of August 2000 (for a complete list of courses visit our website at www.coahe.org)

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* Please contact the COAHE Office at (414) 274-5339 for additional course availability. Publication dates may have been altered due to scheduling changes.

For your convenience, you may now update your mailing address, employer company name, phone number, or number, etc. on the OHC's website address at www.coahe.org. Click on the button titled "MY ACCOUNT". The mailing changes will be forwarded directly to you. In case of lost or damaged issues, please see page 2 of the OHC's address changes to the OHC office.
Worker's Compensation
continued from page 2

Table 1: Methods for Calculating Impairment Ratings for Occupational Hearing Loss

<table>
<thead>
<tr>
<th>Impairment Formula</th>
<th>Ear judgment Formula Definition (single ear)</th>
<th>T.S., Failure to Improve Use Hearing</th>
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<tbody>
<tr>
<td>&quot;Medical Evidence&quot;</td>
<td>Impairment rating determined by examining professional</td>
<td>AK, AR, AZ, CA, CO, CT, DC, DE, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MI, MN, MS, MO, MT, NE, NH, NJ, AK, NM, NV, NY, NC, ND, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI, WY, Guam</td>
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<td>AAO-50AA</td>
<td>Average hearing levels &gt; 25 dB at 500, 1000, 2000 and 3000 Hz; 1.5% per dB</td>
<td>AK, AR, CA, CO, CT, DC, FL, IA, KS, MN, NV, NY, NC, ND, OH, PA, RI, SC, SD, TN, TX, VT, VA, WA, WV, WY, US, DOL-FECA, U.S. DOL-Longshore</td>
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<td>AAO-59</td>
<td>Average hearing levels &gt; 25 dB at 500, 1000, and 2000 Hz; 1.5% per dB</td>
<td>GA, HI, MI, MD, MS, MT</td>
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<td>Illinois</td>
<td>Average hearing levels &gt; 30 dB at 500, 1000 and 2000 Hz; 1.5% per dB</td>
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<tr>
<td>Oregon</td>
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<td>Wisconsin</td>
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<td>Michigan</td>
<td>Not applicable*</td>
<td>*Individuals not compensated only if an injury to the ear occurs; a loss of wages</td>
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</table>

Other Considerations:

Waiting Period
Seventy percent of jurisdictions indicated that no waiting period is necessary for filing a compensation claim. For those jurisdictions that do impose a waiting period, expected timeframes ranged from three days to six months.

Duration and Level of Exposure
Many states include a provision that excludes a claim where the occupational noise exposure is below a specified level, such as 90 dBA TWA. In addition, some states require that the noise exposure duration exceed a minimum number of days in order for a claim to be considered. These requirements emphasize the importance of accurate and complete noise exposure assessment records as part of the HCP.

Statute of Limitations
The statute of limitations for filing claims varies from state to state, and was expected to be as short as 30 days to as long as 5 years. In some states, the date of injury is the last date exposed to noise, while in others it is the date the employee became aware of the hearing loss or its work-relatedness.

Age Adjustments
Over 40 states indicated in the survey that some type of deduction in impairment award may be made for presbycusis, or hearing loss related to aging. In other states, use of a "low fence" of 25 to 30 dB HL is usually considered to account for the effects of aging on hearing.

Tinnitus
Although tinnitus (ringing in the ears) typically accompanies noise-induced hearing loss, only about half of the states responded that tinnitus is taken into effect when calculating awards.

Apportionment or Allocation among Employers
Over 80% of jurisdictions reported that they have some provision for apportioning pre-existing hearing loss to previous employer(s). This consideration reinforces the importance of baseline and pre-placement audiograms as part of a company’s HCP.

Hearing Aids
In most states, hearing impairment is evaluated without consideration of the effect a hearing aid or other prosthesis might have on the claimant’s ability to understand speech. However, most states reported some provision for hearing aids as part of the claimant’s compensation.

Use of Hearing Protection Devices (HPDs)
Although many workers' compensation laws do not address the question of personal HPDs, approximately 40% of states indicated full claims would be denied or an award penalty assessed if an individual was found to have willfully disregarded a requirement to wear HPDs.

Again, to become familiar with the details of your state’s practices, you should contact your local workers’ compensation offices to obtain a copy of pertinent regulations and guidelines. Changes, updates, new interpretations and new precedents are frequent. And although a successful HCP will minimize hearing loss, a good working knowledge of the compensation system will help you improve the effectiveness of your efforts and reduce the financial impact of workers' compensation activity for your company.

1 The Noise Manual can be ordered at www.AIHA.org/ newspubs.html or by calling 703-849-8888.
### Audometric Baseline Revision

**Definitions**

OSHA STD: OSHA defines a standard threshold shift (STS) as a change for the worse in either ear of 10 dB or more in the average of thresholds at 2, 3, and 4 kHz, relative to the baseline.

**Significant Improvement:** OSHA does not specify definition of significant improvement. However, an example in Appendix P of the Hearing Conservation Amendment illustrates revision of the baseline after an improvement of 5 dB in the average of hearing thresholds at 2, 3, and 4 kHz.

**Baseline Audiograms:** Initially the baseline is the latest valid audiogram obtained before entry into the TCP. If no appropriate pre-entry audiogram exists, baseline is the first valid audiogram obtained within 6 months of entry into the TCP (12 months for mobile testing). OSHA requires 14 hours of quiet prior to the original baseline.

**Monitoring Audiograms:** Subsequent to the baseline audiogram, new audiograms are obtained at least annually. To increase the preventive function of audiometry, many professionals suggest performing annual audiograms during the workshift in order to detect any noise-related temporary threshold shifts which may occur.

**Age Corrections:** OSHA permits optional application of age correction values (from Appendix P) to annual audiograms when computing them to baseline for detection of STS, in order to account for median values of age change. Note: many professionals feel that if intervention for threshold shifts is delayed until after age-corrected STS has occurred, then significant hearing changes will not receive needed follow-up attention.

**How to Use NICA’s Guidelines**

**Professional Review**

These guidelines are meant to be employed only by a professional reviewer (audiologist or physician). Although the guidelines can be programmed to computer to identify records for potential revision, the final decision for revision rests with a human being. Because the goals of the guidelines are to find consistency among professional reviewers, the human override of the guidelines must be justified by specific concrete reasons. Separate Consideration of Each Ear: Each ear must be evaluated independently. If one ear meets the criteria for revision of baseline, then the baseline is revised for that ear only. Therefore, the two ears show different hearing trends, the baseline for the left ear may be set one test date, while the baseline for the right ear may be from a different test date.

**Use of Age Corrections**

Age corrections do not apply in considering revisions for improvement. The audiologist or physician may choose whether to apply OSHA-allowed age corrections in evaluating baseline revision for persistent baseline OSHA STD. Rule 2 applies in the same way whether optional age corrections are used or not. Application Exceptions

These guidelines for baseline revision do not apply to the calculation of the 25-dB average shifts which in many states are recordable on the OSHA log for occupational illness and injury. The original baseline is the appropriate reference for that purpose. Notice do the guidelines apply to identification of other (non-STSI) significant threshold shifts for the worse, which may be communicatively or medically important.

**The Guidelines**

**Rule 1: Revision for Improvement**

If the audiogram meets the criteria for 2, 3 and 4 kHz for either ear shows an improvement of 5 dB or more from the baseline value, and the improvement is present on one test and persistent over time, the test should be identified for review by the audiologist or physician for potential revision of the baseline. The baseline for that ear should be revised to the

---

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<th>Left Ear Thresholds (dB) by frequency (kHz)</th>
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<th>With Age Correction</th>
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<td>Baseline</td>
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<td>Reviewer decision</td>
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<td>22 initial</td>
<td>10 5 5 25 25 40 40</td>
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Male employee "L.M." born 10/05/83 See far right column for test date.
revision when STS is the result of temporary medical conditions affecting hearing. Although a special retest after six months could be given if desired to assess whether the STS is persistent, in most cases the next annual audiogram would be used to evaluate persistence of the STS.

Example Description

The examples below illustrate how the baseline revision guidelines apply to some audiometric records. The abbreviations used are: B for baseline, RB for revised baseline, STS for OSHA STS, and IMPR for improvement. Revisions are shown both without use of age corrections, as well as with use of OSHA age corrections (with the choice being up to the professional in charge of revision). In the left column, the baseline (or revised) test is followed by the revising audiologist or physician's name and the date of the test, then the STS is revisited to the test of 5/21/92 (without using age corrections). With age corrections, the left ear shows persistent STS in 1995, with baseline revised to the test of 7/25/94. In the right ear, baseline revisits for persistent STS without age corrections occur in 1994 to the test of 5/28/93. With age corrections, the right baseline is revised in 1996 to the test of 06/01/95.

Note that the table above shows values rounded to one-tenth of a decibel, resulting in some apparent errors of one-tenth in the columns showing change from baseline. For example, one comparison in the table indicates that 19.7 - 3.3 = 16.4 because the underlying values are really 19.67 - 3.33 = 16.34. Also recall that age corrections are not applied to baseline tests, but only to annual tests. Therefore, in the sections showing calculations with age corrections, the "corrected change" column shows change from the STS without age corrections for the currently applicable baseline compared to the STS average with age corrections on the current annual test.

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