

Volume 4, No. 3 Fall 2001

In March 2001, the Michigan Speech-Language Hearing Association (MSHA) held its annual conference in Dearborn, Michigan. The Michigan State University Occupational and Environmental Medicine Program sponsored a special Short Course during this conference to provide an update to the State's audiologists on issues related to occupational noise-induced hearing loss (NIHL). Three speakers presented a wealth of information on current research and knowledge about the causes, effects and prevention of NIHL. The next three issues of *Now Hear This*... will focus on the messages presented by each of the three speakers. This issue will begin with the presentation from Lee D. Hager.

Showcase on Preventing Occupational NIHL: Best Practices in Work Place Noise Control, Current Research and NIOSH Criteria Document & Recommendations



Lee D. Hager is Executive Vice President for James, Anderson & Associates, Inc. (JAA), a leading hearing loss prevention management and noise control firm. He has been active in the field of hearing loss prevention since 1986. He manages the Technical Services Division of JAA, which is responsible for conducting sound exposure monitoring studies and related

hearing loss activity for over 300,000 workers annually. Lee is active in numerous state and national professional associations related to hearing loss prevention, and has contributed numerous articles to health and safety publications. The following summarizes some of the key messages Lee provided during his presentation:

Noise Control IS Hearing Conservation

Lee began with some compelling statistics; an estimated 5 to 30 million United States workers are at risk of exposure to noise levels that are hazardous to their hearing. Additionally, there are approximately 28 million individuals in the United States with hearing loss; one-third of which can be attributed to noise. The estimated yearly costs related to lost productivity, special education and medical care because of un-

treated hearing loss is \$56 billion.

Controlling noise is key to hearing conservation. In order to control noise, however, a company must build and maintain a Hearing Conservation Program (HCP). The components of a HCP are: noise exposure monitoring; engineering and administrative controls; audiometric evaluation; hearing protection; education and motivation; record keeping; and program evaluation. The maintenance of an effective HCP relies on the belief that it is a continuous process, not a static program.

Lee described the rationale for each of the components of a HCP. The following examples illustrate key elements of each component.

Noise exposure monitoring is necessary in order to assess each workers' risk of noise exposure, as well as helping to interpret each workers' audiometric test results. Noise monitoring would be conducted if any evidence exists that noise levels would meet or exceed 85 dBA, for an 8-hour time-weighted average.

Hearing testing (audiometric evaluation) is conducted annually, in order to document and assess the effect of noise for each employee who works in noise levels that meet or exceed 85 dBA for an 8-hour time-weighted average. If an employee exhibits a change in their hearing ability, the company would then assess possible reasons for a hearing decrement, including noise at work as well as other possible medically-related conditions.

An example of an **administrative control** is the assignment of hearing protection devices until an **engineering control** can be established. A key point here is the appropriate selection and fitting of hearing protection, and an evaluation of the effectiveness of the

selected type of hearing protection.

Training is yet another important component of an effective HCP. Training of employees who work in noise provides the **educational and motivational basis** that employees need to understand and actively participate in a hearing conservation program.

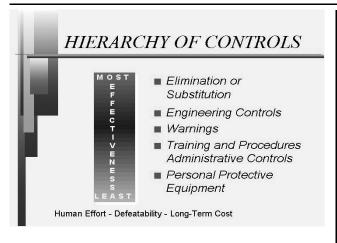
Record keeping includes the maintenance of noise surveys and hearing test results. It is important for the company to retain this information as a reference to document historical conditions at the facility.

Conditions at any given facility will change over time. That is why it is important to **evaluate** a HCP periodically, so that the program can be changed to fit with any changing conditions at the facility.

Lee discussed how noise reduction is not the same as exposure control; that exposure is a function of Noise, People and Time. Lee outlined ways to control noise--through engineering and administrative means, and why, when and how this would be done. Lee stressed the 3 keys to keeping machinery quiet: Buy It Quiet; Make It Quiet; and Keep It Quiet. Priorities for instituting noise controls would include large groups of employees in noisy areas, or areas where the noise levels are high. Also, feasible fixes that produce immediate results would be a good example of a priority area for noise control.

Lee next discussed the "Hierarchy of Controls," and the considerations that must be given when selecting a given type of control.





Lee provided real world, practical examples of sources of noise and ways a company can evaluate and control that noise. Standard control measures include: repairing compressed air leaks, installing mufflers and silencers, maintaining housings and enclosures as well as maintaining controls on new equipment, maintaining existing machinery and equipment, and controlling areas of metal impact, such as on chutes and tables.

Lee concluded:

- Simple fixes can yield good results.
- A consistent approach is needed, with maintenance staff as key individuals in noise control.
- Noise Control IS Hearing Loss Prevention.

Would you like to know more about how to prevent occupational hearing loss? The National Institute for Occupational Safety and Health (NIOSH) has developed: "Preventing Occupational Hearing Loss: A Practical Guide." This document, publication no. 96-110, can be found on-line at www.cdc.gov/niosh, or by calling 1-800-35NIOSH.

Future issues of Now Hear This . . .

Winter 2001-2002 Second in Three Part Series: Preventing Noise-Induced Hearing Loss with Coal Miners

Lisa Murray-Johnson presents current research at Michigan State University's Department of Communication to understand how groups can be motivated to adopt positive health behaviors. In her examples, Ms. Murray-Johnson shows how focus groups help define perceptions about hearing loss and appropriate health messages to encourage the use of hearing protection devices among a group of coal miners in Appalachia.

Spring 2002 Third in Three Part Series: Best Practices for Hearing Loss Prevention: Issues and Criteria

Mark R. Stephenson, Ph.D., from the National Institute for Occupational Safety and Health (NIOSH) outlines the rationale and development of the NIOSH criteria document on preventing occupational hearing loss.



Now Hear This...

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Address service requested.

In this issue:

First in three part series: Noise Control IS Hearing Conservation

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Michigan Law Requires the Reporting of Known or Suspected Occupational NIHL

Reporting can be done by:
FAX (517) 432-3606
Telephone 1-800-446-7805
E-Mail ODREPORT@ht.msu.edu
Web www.chm.msu.edu/oem
Mail MDCIS Div. of Occ. Health
P.O. Box 30649
Lansing, MI 48909-8149

Suggested Criteria for Reporting Occupational NIHL

- 1. A history of significant exposure to noise at works; AND
- A STS of 10dB or more in either ear at an average of 2000, 3000 & 4000 Hz. OR
- 3. A fixed loss.*

*Suggested definitions: a 25 dB or greater loss in either ear at an average of: 500, 1000 & 2000 Hz; or 1000, 2000 & 3000 Hz; or 3000, 4000 & 6000 Hz; or a 15 dB or greater loss in either ear at an average of 3000 & 4000 Hz.