

RECORDABILITY ISSUES

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POINTS TO BE COVERED

- Basic Requirements of OSHA, MSHA recordkeeping regulations
- Implications for Professional review of audiograms and determination of work-relatedness and recordability
- Importance of compliance with recordkeeping rules and tracking incidence of hearing loss
- Best practice for an effective hearing loss prevention program

OSHA, MSHA, ALPHABET SOUP

- OSHA -Occupational Safety and Health Administration
- MSHA - Mine Safety and Health Administration
- FRA- Federal Railroad Administration
- DOD- Department of Defense
- NIOSH- National Institute for Occupational Safety & Health

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QUESTION:
WHAT REGULATIONS PERTAIN TO YOUR WORK?

- OSHA
- MSHA
- FRA
- DOD
- More than one
- I am not sure

OSHA

What Records does OSHA expect to be kept?

29 CFR 1910.95

"Occupational Noise Exposure; Hearing Conservation Amendment: Final rule 8 March 83"

General Industry & Manufacturing

29 CFR 1904

"Recording and Reporting Occupational Injuries and Illness"

29 CFR 1904.10

"Recording criteria for cases involving occupational hearing loss"

29 CFR 1910.95
PROGRAM RECORDS

Have records to demonstrate:

- Noise monitoring procedures and results
- Noise control methods (engineering and administrative)
- Hearing protective devices provided and adequacy of attenuation
- Exposed employee annual training
- Hearing Conservation amendment is posted
- Program summary document
- Audiometric Monitoring Records

29 CFR 1910.95
AUDIOMETRIC MONITORING RECORDS

Audiometric records demonstrate:

- Baseline and periodic monitoring of exposed individuals
- License or certification of physician or audiologist serving as professional supervisor
- Determining if an STS occurred
- Notification of worker within 21 days if STS is work-related
- Audiometric Technician Training Documentation
- Background noise levels in testing environment
- Audiometer calibrations

MSHA

What Records does MSHA expect to be kept?

30 CFR Part 62

"Occupational Noise Exposure"

MSHA
PROGRAM RECORDS

Keep same program records as noted by OSHA.

Additionally:

- Post required administrative noise controls
- CAOHC or equivalent audiometric technician certificates
- Written feedback on all audiograms within 10 days
- Different recording criteria for hearing loss cases versus OSHA/FRA

FRA

What Records does FRA expect to be kept?

49 CFR 227 and 229

"Final Rule on Occupational Noise Exposures for Railroad Operating Employees, 26 Feb 2007"

FRA
PROGRAM RECORDS

Keep same program records as noted by OSHA.

Additionally:

- Demonstrate employee can understand and respond to communications and audible warnings
- Audiometry offered annually, but required only three years
- Audiometric technician can be CAOHC or equivalent certified, or demonstrate competence
- Post crew noise monitoring results

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QUESTION: WHICH IS NOT AN ESSENTIAL PIECE OF INFORMATION NEEDED TO MAKE AN OSHA RECORDABILITY DECISION?

- New STS present
- Age of individual
- STS associated with a 25 dB "fence"
- Work-relatedness determination

29 CFR 1904 RECORDABILITY

- There are three key components of every recordability decision:
 - New STS
 - Total hearing loss from audiometric zero meets or exceeds 25 dB
 - Hearing loss is determined to be work-related

29 CFR 1904.10 DEFINES RECORDABLE HEARING LOSS INJURY

Recordable (or reportable) :

If an employee's hearing test (audiogram) reveals that the employee has experienced a work-related Standard Threshold Shift (STS) in hearing in one or both ears, and the employee's total hearing level is 25 decibels (dB) or more above audiometric zero (averaged at 2000, 3000, and 4000 Hz) in the same ear(s) as the STS, you must record the case on the OSHA 300 Log.

STS (STANDARD THRESHOLD SHIFT)

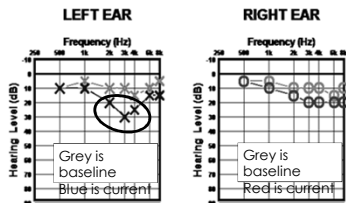
**An average shift (worse) of 10 dB or more
at 2000, 3000, & 4000 Hz relative to
the baseline audiogram in either ear.**

Example STS Calculation

	LEFT EAR							RIGHT EAR						
kHZ	.5	1	2	3	4	6	8	.5	1	2	3	4	6	8
Baseline 2005	10	10	05	00	05	10	05	15	10	10	05	05	10	05
Annual 2015	10	10	05	10	15	10	05	20	10	10	15	40	20	15
Diff.			00	10	10					00	10	35		
AVC	STS							STS						
AVC	$20/3 = 6.7$							$45/3 = 15$						

The STS calculation is straight forward math. Take the difference between the baseline and current test thresholds at the three frequencies (2, 3, and 4 kHz) and find the average. If the average difference is 10 or more, there is STS.

OSHA & FRA RECORDABLE HEARING LOSS



1. STS is present (this example is not age corrected).
 2. Recordable degree: current threshold average at 2, 3, 4 kHz = 25 dB HL $\frac{20 + 30 + 25}{3} = 25$
1. NO STS
 2. Not recordable

WORK-RELATEDNESS DETERMINATIONS PER REGULATIONS

29 CFR 1904.5 - Recording and Reporting Occupational Injuries and Illness
First "You must consider an injury or illness to be work-related if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing condition or illness."

This is called the "Presumption Rule"

WORK-RELATEDNESS DETERMINATIONS PER REGULATIONS

- **Second- Work-relatedness is presumed for illnesses and injuries resulting from events or exposures occurring in the work environment, unless an exception in 1904.5(b) (2) specifically applies.**
- OSHA 1904.5(b) (2) The injury or illness involves signs or symptoms that surface at work but result **solely from a non-work-related event or exposure that occurs outside the work environment.**
- Case-by case determinations are expected

WORK-RELATEDNESS DETERMINATION

Why do it?

Legal reasons

- Government regulations
- Workers compensation

Medical reasons

- Determine diagnosis
- Determine if work place contributed

WHO DOES WORK-RELATEDNESS DETERMINATIONS?

By OSHA 29 CFR 1904.5, for recordability decisions:

- Any licensed health care practitioner

By OSHA 29 CFR 1910.95, role of Professional Supervisor defined:

- Must be physician or audiologist
- Supervise audiometric testing technician for training and competence
- Review problem audiograms
- Determine need for further evaluation
- Revise audiometric baselines

WORK-RELATEDNESS DETERMINATION

Considerations:

1. Is there evidence of adverse health effect?
2. Is there evidence of workplace exposure to chemical, physical or biological agent linked to the health effect?
3. Is the exposure to that agent adequate enough to cause the health effect?
4. Is there evidence that the health effect developed at time of adequate exposure?

IS THERE EVIDENCE OF ADVERSE HEALTH EFFECT?

- Demonstrable hearing loss
- Subtle hearing loss as determined by a sensitive biological monitoring test

IS THERE EVIDENCE OF WORKPLACE EXPOSURE TO CHEMICAL, PHYSICAL OR BIOLOGICAL AGENT LINKED TO THE HEALTH EFFECT?

- Noise
- Chemicals

IS THE EXPOSURE TO THAT AGENT ADEQUATE ENOUGH TO CAUSE THE HEALTH EFFECT?

"The dose makes the poison"

Epidemiology

Toxicology



IS THERE EVIDENCE THAT THE HEALTH EFFECT DEVELOPED AT TIME OF ADEQUATE EXPOSURE?

"Temporality"

Immediate effects

Delayed effects?

APPROACH TO MAKING WORK-RELATEDNESS DECISIONS

- Is there an standard threshold shift present?
- If so, does audiogram look valid?
- Was the employee exposed?
- Is hearing loss consistent with Noise-Induced Hearing Loss (NIHL)?
- Finally, Is there a work-relationship to the observed hearing loss?

IS THERE AN STANDARD THRESHOLD SHIFT PRESENT?

- Compare to baseline
- Calculate the average hearing loss across 2000, 3000, and 4000 Hz.
- Decide whether to retest

IF SO, DOES AUDIOGRAM LOOK VALID?

- Calibrations
- Low test to test variability
- Ear canal patency and no recent medical issues
- Cooperation of test subject

WAS THE EMPLOYEE EXPOSED?

- Records of noise and chemical exposure
- Records for hearing protection

IS HEARING LOSS CONSISTENT WITH NOISE-INDUCED HEARING LOSS (NIHL)?

- Amount and trajectory of the hearing loss
- Notch and trending
- History of Temporary Threshold Shift
- Symptoms of tinnitus relative to work day
- Differential diagnosis
- Additional audiological testing

DID WORK EXPOSURE CAUSE, CONTRIBUTE TO , OR SIGNIFICANTLY AGGRAVATE A PRE-EXISTING CONDITION?

- Professional judgement

OSHA FORM-300
(29 CFR 1904.35)

- Log of work-related injuries & illnesses
- "Statistical tool only" - per OSHA
 - Number of deaths
 - Number of cases with lost work days
 - Number of days with job transfer or job restriction
 - Total number of recordable events
- Concern: incentives pays are often tied to log stats may create a conflict in interest

QUESTION: IS THERE AN STS?
IS IT POTENTIALLY RECORDABLE ?

500	1K	2K	3K	4K	6K	8K	AVG	YEAR	
00	00	00	05	10	10	05	5	2012	Hired/Baseline
05	05	00	05	10	10	00	5	2013	
05	05	05	10	25	15	15	13.3	2014	baseline reset
10	05	05	15	25	25	15	15	2015	
10	10	10	25	25	25	15	20	2016	
15	20	20	25	30	20	15	25	2017	

1000000
1000000

QUESTION: WAS THERE A NEW STS SEEN BETWEEN
2014 AND 2017

- Yes
- No

QUESTION: WAS THE 25 DB "FENCE" MET OR
EXCEEDED?

- Yes
- No

CASE STUDY: OTHER INFORMATION

- Exposure data shows noise exposure at 93 dBA Time Weighted Average
- There is no known ototoxic exposure
- Wears foam earplug of NRR 34 about 80% of the time
- No history of previous ear disease
- He states that he has occasional ringing in his ears after work



IN YOUR OPINION, DOES THE HEARING LOSS APPEAR TO BE WORK-RELATED?

- Yes
- No

IN YOUR OPINION, IS THIS CASE OSHA RECORDABLE?

- Yes
- No

IMPLICATIONS FOR RECORDKEEPING

- Recording on the OSHA Log
- Recordkeeping violations

OSHA VIOLATIONS PERTAINING TO THE 29 CFR 1910.95

- Willful/repeated violations fines between \$5000 and \$126,749 per violation depending on the seriousness
- Citation for non-serious violation up to \$12,675 per violation
- Conviction for making false statements on required reports up to \$10,000 and/or up to 6 months in prison.
- Failure to post requirements up to \$12,675 per violation

OSHA VIOLATIONS 29 CFR 1910.95

- Five Year Compliance Study (2000-2004)
- Over 10,000 citations with penalties over \$7.5 Million. Violations:
 - Lack of program 3,143
 - Audiometric testing 2071 **(56% serious)**
 - Noise monitoring 1,622
 - Employee training 1,351
 - Hearing Protection 1,168
 - Recordkeeping (75% for not posting standard!!!)

Ref: Sound Source, Bacou-Dalloz Hearing Safety Group Apr 2006)

BEST PRACTICE RECOMMENDATIONS

1. Don't wait until you see an STS
2. Insure the institution you support has a sound hearing conservation program document
3. Conduct periodic audits of your program
4. Be consistent in your recordability decision making process
5. Document the rationale behind your recordability decision
6. Good resources for best practices: NIOSH, NHCA, CAOHC
3. Comply with the applicable regulations!!

Questions ?

REFERENCES

- 29 CFR 1910. OSHA Hearing Conservation
- 29 CFR 1904. OSHA Recordability
- 30 CFR Part 62 MSHA Hearing Conservation
- 49 CFR 227 and 229 FRA Hearing Conservation
- NIOSH website: www.cdc.gov/niosh
- NHCA Position Statement: Guidelines for Audiometric Baseline Revision. www.hearingconservation.org
- NHCA Guidelines for Recording Hearing Loss on the OSHA 300 Log (April, 2011)
- Internet search: Bacou-Daloz Hearing Safety Group (Apr 2006)
- www.caohc.org
