Blood Borne Pathogen Standard (29 CFR 1910.1030)
Time: 10 minutes

Background to BBP Standard

1. Purpose: to prevent employee's exposure to Blood Borne Pathogens (BBP)
2. BBP include HIV, Hepatitis B and C
3. Applies to ALL occupational exposure to blood or biological material that presents a potential risk for infection. Covers Health care works and non-HCW because of their exposure
4. Defines occupational exposures as "reasonably anticipated skin eye, mucus membrane, or parental contact with blood or other potentially infectious materials that may results from performance of an employee's duty".

Exposure Control Plan – required by the standard

1. Written plan that describes procedures for protecting occupationally exposed employee from potentially infectious materials

2. Start by using engineering control to prevent exposures: e.g. disposable containers for needles and self sheathing needles (recent federal Needlestick Safety and Prevention Act law)

3. Must be reviewed annually

4. Use universal precautions – assumption is that all blood and body fluid is infectious, use gloves goggles if splash is likely.

Hepatitis B vaccine offered to workers at risk of needle stick injuries – Dramatic reduction in Hep B infections from 17,000 case in 1983 to 400 cases in 1995 believed to be result of BBP Standard.

FAA with NTSB represents the primary federal agencies for civilian a/c accident investigation

1. Presence of federal investigators at a/c accident scenes does not remove bodies but the subsequent on-site investigations they conduct place them at potential risk for BBP contamination.
2. Risk is jagged pieces of metal covered with tissue and body fluids present an additional hazard to the already dangerous environment.

What do you need to Know?

1. Exposure Control Plan when an employee's job can be reasonably anticipated to place the employee at risk of exposure to blood or other potentially infectious material.
   - Does the BBP program cover a plumber who occasionally cleans plugged sinks?

- Do not confuse hepatitis B (infectious) with Hepatitis A (sewage exposure)

2. Regulated Waste Red Bags could potentially release infectious material.
   - Feminine Hygiene products and bandages that don't release blood not included as regulated waste.
3. FAA and NTSB BBP program in civilian Accident investigation. FAA order 8020.14 established FAA' accident investigation BBP program

INDOOR AIR QUALITY

TIME: **20 Minute**

Case Presentation:

1. Worker complains of smell & itching wen in work environment. Worker states that unscheduled absences are due to the poor work environment
2. How do you approach this problem? E.g. send for a medical exam? measure everything in the environmental air?

Purpose of the presentation

1. Discuss what Medical services can offer in an IAQ investigation
2. **Ed** will follow in ventilation issues

Acute exposure – response of workers to construction or a spill in the area.

1. Medical exam emphasizes respiratory system – generally unrewarding for small spills
2. Issues related to return to work

Long term complaints - more usual, building manager wants measurement of common sources of pollutants

1. Physical measures of temperature & relative humidity
2. Volatile Organic Compounds
3. Particulate
4. Microbiologic contaminants

Most common response t inadequate IAQ is *perceived* discomfort for variation in relative humidity and temperature

1. ASHRAE standard 55 – relative humidity and temperature – 10% dissatisfaction
2. Odor threshold at different temperatures
3. Low relative humidity, winter, drying skin & mucus membranes

Volatile Organic Compound (VOC) – cleaning solvents, glues, sprays, propellants, pens & Markers, perfumes

1. Measurements using standards
2. Example – Formaldehyde – most ubiquitous indoor VOQ, off gassing from construction products
3. Medical effects – mucus membrane and eye irritation, pungent order which causes a person to leave an area before effects become toxic

Particulate – asbestos, fiberglass

1. No asbestos in construction insulation, historical interest in delayed effects on lungs including lung cancer & Mesothelioma
2. Fiberglass – itching from airborne fibers, episodic

Biologic contaminants

1. Fungal growth from water incursion in bathrooms, walls, window casements and damp basements
2. Specific agent – *stachybotrus, aspergillis* "toxogenic fungus"
3. Acute bacterial infection – Legionella Pneumonia of Legionaries disease, hypersensitivity Pneumonitis.

Environmental Tobacco Smoke

1. ETS increases risk of lung cancer and decreases lung function in non smokers
2. SG repots – separate room for smokers and non-smokers.

Ergonomic Injuries
Time: 20 minutes

Historical Prospective – interaction of the job on people who work the job

1. Low Back Pain – rail road spine
2. Carpal Tunnel Syndrome – writer's cramp, telegraphers hand

Occupational MusculoSkeletal Disease (MSD) – See appendix A of standard

1. Includes injuries or illness to muscle, tendon, ligament, nerves, cartilage and bone
2. Terms: sprain, strain, inflammation , irritation
3. Account for 43% of cases involving work loss e.g., LBP associated with high rate of work disability.

MSD – factors influencing the development and eventual control of MSD

1. Environmental factors – frequency, force direction needed for the job
2. Human biologic factors – anthropometric or innate attributes that influence ability to do job
3. Behavioral actors & healthy life style – acquired behaviors or person habits that affect a worker's risk of incurring MSD, e.g. amount of sleep, recovery from previous exertion, job satisfaction, diet
4. Inadequacies in existing health care or ancillary support – work environment, management style, labor-union collaboration in reducing disability

Disease States associated with MSD

1. Individuals can present with condition without presenting structural changes that would facilitate a diagnosis
2. Multifactoral causes – physical and psychosocial components
3. Outcomes from MSD – affected by many factors

Occupational Osteoarthritis

1. Physiology – inflammation around joints of hand, hip, knees
2. Symptoms – pain, swelling, stiffness in joints
3. Work relatedness – mechanical overloading of joint and repetition movement e.g. small joints in hand in cotton picker, knees and elbows in coal miners, meta tarsophalangeal joints in ballet dancers
4. Individual risk factors – age, gender, ethic and race background, genetic predisposition, obesity

Cumulative Trauma Disorder

1. Physiology – repeated motion, microtrauma to soft tissues such as nerves, muscle, blood vessels
2. Symptoms – shooting paints, swellings, burning sensation
3. Typical diagnosis – Carpal Tunnel Syndrome, OA of hips and knees, epicondilitis, tendinitis, bursitis

4. Individual Risk Factors – high association between symptoms & signs from the neck and upper extremities and perceived stress at work.

Nerve Entrapment & CTS as specific example

1. Carpal tunnel formed as transverse carpal ligament traverses over anterior portion of wrist bones
2. Median nerve in tunnel along with tendons of flexor muscles of hand
3. Symptoms – increases swelling, results from increased pressure on the nerve entrapped in the tunnel
4. Physical findings – thenar atrophy. Numbness in median nerve distribution
5. Differential Diagnosis – thyroid disease, diabetes, pregnancy, waster retention, previous fracture.

Low back Pain – another example of MDS

1. Muscular strain around lower back
2. Don't offer X-rays initially since hard to interpret
3. Gradual return to duty, no more than 3 days off work.

Safety office assistance in recovery from MSD

1. Job analysis , seek engineering controls to assist in lifting and moving e.g.: maintenance workers with LBP due to lifting latter, use lifting device
2. Offer light Duty
3. Encourage supervisors to alter works schedule, e.g.: 20 minutes of typing altered with 40 minutes of other duties
4. Establish back schools to train people how to lift
5. Establish ergonomic committee to track the sites that produce MSD, have committee with money to make simple changes in work environment
6. Establish criteria to screen new hires for position that have had previous ergonomic injuries ---ADA applies so apply to All employees in a category
7. Ask for second opinion for LBP that is off work for more that 3 days.

Time schedule for standard – as stated in standard, note similarities to established medical management of MSD

1. October 14, 2001 – Employer must begin to distribute information on the standard to all employees and begin to receiving and responding to reports of repetitive motion-related injuries
2. Within 7 calendar days after an employee has reported a MSD, the employer must determine if the employee's job meets the action triggers for further action
3. If the job meets the action trigger, the employer has 7 calendar days to provide the injured employee access to a health care professional and any temporary work restrictions if needed.
4. Within 30 calendar days after the job meets the action trigger, management leaders and employee participation programs must be implemented for that job, and similar jobs, in the same workplace

5. Within 45 days, employees involved in setting up and management the ergo program must be trained
6. Within 90 calendar days, after the job meets the action triggers, all employees in job similar to the injured employee's job must be trained and also supervisors or team members associated with those jobs
7. Problem jobs that meet the action trigger must undergo a job hazard analysis within 60 calendar days
8. Initial controls to correct ergonomic problems in that job must be implemented within 90 calendar days after the initial determination that the job meets the action trigger
9. Ergonomic programs must be evaluated by employers within 3 years after the job meets the action trigger
10. Permanent controls to correct ergonomic problems jobs must be implement no later than January 18, 2005

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Getting Older? The Government Says Blame Your Boss.

By Tama Starr

One of the most destructive legacies of the Clinton administration may be the Occupational Health and Safety Administration's new ergonomics standard, which was rushed through with little scrutiny and took effect Jan. 16. Starting in October, almost all employers with 10 or more employees will be required to educate some 102 million workers about a set of ill-defined syndromes and disorders—compensable illnesses they may be unaware they could be suffering from. In the absence of any known cause or cure, the victims themselves will recommend the remedies.

The outstanding fact about ergonomic illnesses—MSDs, or musculoskeletal disorders, in OSHA-ese—is that nobody knows quite what they are. OSHA takes the broad view, including any "disorder of the muscles, nerves, tendons, ligaments, joints, cartilage, blood vessels, or spinal discs" not caused by "trips, falls, vehicle accidents, or similar accidents"—that is, any chronic ailment from scalp to toenail. Sore back? Creaky joints? Diminished grip? Your employer is now responsible for your symptoms of aging—as well as for your high-school football traumas and overzealous weekend gardening.

OSHA puts the annual cost of compliance at "only" $4.5 billion: the price of retrofitting 30 million work stations at $150 each. But independent economists put the total annual damage at up to $125 billion. Even the government's own Small Business Administration said "the costs of the proposed standard could be anywhere from 2.5 to 15 times higher than those estimated by OSHA."

OSHA artfully erases the distinction between work-related and extracurricular injuries, defining a "work related" MSD as one where working conditions "caused or contributed to an MSD or significantly aggravated a pre-existing MSD." The employer must engage the services of an HCP (HealthCare Provider) to help determine if an MSD is work-related. But the HCP is forbidden to reveal any non-work-related contributory factors that may turn up. The 6.1 million employers subjected to OSHA's ergonomics routine will have to prove themselves innocent.

Given the phantom nature of the problem, the process necessarily starts with an ample dose of victim education. Employers must teach employees to distinguish between an MSD sign (perhaps decreased range of motion) and an MSD symptom (maybe tingling or numbness), as well as provide descriptions of the kinds of jobs and work activities associated (in the mind of OSHA) with MSD hazard. They must also offer surveys of the financial benefits available to MSD sufferers and lessons in federal government reporting methodology.

Having fulfilled these obligations, the employer sits back and waits. Starting on Oct. 14, says OSHA, "employers must begin receiving and responding to employee reports of musculoskeletal (MSK) signs and symptoms," whether work-related or not. Each report is an "MSD incident" and invokes the employer's next cascade of obligations.

The employer—or his full-time ergonomist—will determine if a complainant's job exceeds one or more of 12 "action triggers" by studying whether the job involves "the same motions every few seconds," a "cycle of motions every few seconds," a "cycle of motions more than twice per minute," pushing or pulling "with more than twenty pounds of initial force" (try opening a fire door), "gripping force" equivalent to 10 pounds (a hearty handshake?), "high" vibration levels, "awkward" body positions, and the like. Experts universally disagree on what tolerable levels for these activities are. Nevertheless, once one or more of the action triggers is hit, the dominoes fall. The employer must institute a comprehensive ergonomics program—unless he or she is lucky enough to be eligible for the "quick fix."

The quick fix, which OSHA believes "will be particularly useful for small businesses," is for the rare employer that incurs only one MSD incident within 18 months. The employer provides the triggering employee with medical evaluation, follow-up and medical management; temporary work restrictions if indicated; and wage replacement: up to 90 days at 100% pay for those on restricted duty, or 90% pay (plus 100% benefits) for those who stay home. This generous package pre-empts existing workers' comp laws, in direct violation of the 1970 Occupational Safety and Health Act. Given the chronic and often incurable nature of MSDs, there is no reason why ergonomically impaired employees should not experience a new "incident" every quarter.

The quick-fixing employer must also consult other employees with similar jobs, observe them performing their jobs, and solicit and document their ideas for remedial measures. The employer must implement "controls" that reduce MSD hazards to below ill-defined levels, train employees in the use of the "controls," review all affected jobs within 30 days, and keep meticulous records.

So much for the quick fix.

Predictably, the litigation guns are wheeling into position. The U.S. Chamber of Commerce and others have filed suit against OSHA saying there's no scientific evidence behind the rules and that they violate the 1970 OSHA Act. The AFL-CIO, despite a nagging sensation that the standard "is not sufficiently protective in a number of key respects," has intervened on OSHA's part. Legal experts predict a decision as early as spring of 2002.

Ergonomics was never conceived as either a disease-prevention mechanism or an antibusiness blunderbuss. It was, simply, the study of increasing productivity by making work stations more comfortable. It was never designed or intended to be used to prevent injuries, and not one scientific study has ever shown that it can. Meanwhile, the Bureau of Labor Statistics reports that ergonomics complaints have declined every year since 1994—a trend the regulation seems sworn to reverse.

Ms. Starr is CEO of Artkraft Strauss, a sign and outdoor advertising company in New York. Her latest book is "Signs and Wonders: the Spectacular Marketing of America" (Doubleday, 1998).

THE WALL STREET JOURNAL
Peter R. Kann

Recommended Reference for FAA Safety Manager
March 13, 2001

Print material

1. Industrial Hygiene & Safety News, Business News Publishing at www.ishn.com. This is a free monthly newspaper with topical articles written by users working in the Safety and IH fields. Numerous Ads and pictures are present
2. The Synergist, American Industrial Hygiene Association, Fairfax, VA
3. Occupational Health – Recognizing and Preventing Work-Related Disease and Injury, 4th Ed by Barry S. Levy MD, MPH and David H. Wegman MD, 842 pages, Lippincott, Williams & Wilkins, Philadelphia $54.95
4. Salazar GJ, DeJohn CA, Hansrote R, and Key OR, A BLOOD BORNE PATHOGEN PROGRAM IN CIVLIAN AIRCRAFT ACCIDENT INVESTIAGTION, *Aviation, Space and Environmental Medicine,* (70) 2 146 – 152, Feb 1999

Webb sites

1. OSHA Home Page: www.osha.gov
2. OSHA safety and Health internet sites: www.osha.gov/safelinks.html
3. National Institutes for Occupational Safety and Health: www.cdc.gov/niosh/homepage.html
4. American Industrial Hygiene Association. www.aiha.gov
5. Environ-Net MSDA index, contains MSDS alphabetically www.enviro-net.com/msds/msds.html
6.

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