“Components of a Quality Medical Surveillance Program”

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  - Oversees state-of-the-art service of 285 professionals
  - 105 mobile units; 2800 clients; 11,000 locations nationwide
- President, Occupational Health Strategies
- Past President, American College of Occupational and Environmental Medicine (ACOEM)
- Board member, Medical Review Officer Certification Council (MROCC)
- Founding Senior Vice President, Institute for Health and Productivity Management (IHPM)
Agenda

- Medical Surveillance Overview
- Potential Hazards in Power Generation Industry
- Who, What, Why
- --- Interlude ---
- Where, When, How
- Questions, Discussion
Hippocratic Injunction

Primum
Non Nocere
Surveillance

Derives from the French word *surveiller*, “to watch over,” which encompasses the twin notions of careful observation and timely intervention.
Medical Surveillance Defined

- **What** - Periodic or ongoing medical testing, monitoring and assessment of the health of workers in potentially hazardous or hazardous environments

- **Purposes**
  - 1) to ensure that workers are not adversely affected by environmental conditions or other aspects of their jobs
  - 2) to detect as early as possible any signs of adverse exposure or health effects & secure appropriate treatment
  - 3) to help optimize health and productivity
Two Kinds of Surveillance

- **Broad Health Evaluation**
  - General health histories, physical exams, blood, lab/other tests
  - Suitable for those exposed to wide variety of potential hazards, e.g., maintenance workers, emergency response
  - Helps detect key risk factors for chronic disease (e.g., HBP)

- **Tailored to Specific Jobs or Exposures**
  - Hearing Conservation for those at 85+ dBA 8 hour TWA
  - Respirator Clearance/Fit Testing (pulmonary function)
  - DOT commercial driver exams/drug tests
  - Chest x-rays with B-reader interpretation for pneumoconiosis
  - Biological monitoring (e.g., blood lead - ZPP)
Power Generation and Delivery - Potential Hazards

- Noise
- Respiratory Exposures – Silica?
- Chemicals and Hazardous Materials
- Fire and Emergency Escape
- Asbestos
- Radiation
- Substances – Illegal drugs, Rx medication, alcohol
Who: Gets Tested?
Who: Gets Tested?

- Must clearly identify population at risk
- Put all workers in specified jobs into appropriate pools
- Create system to ensure that all workers in a pool get tested/evaluated on scheduled timetable
  - Careful scheduling
  - Required clearances
- Employer responsibility – cannot be contracted out
- Challenge to address “stragglers” - workers out for illness, vacation, etc.
Who: Does the Testing?

- Company responsibility
- Options include
  - In-house medical clinics
  - Local clinics
  - Mobile unit services

- Pros and cons to each (see Where?)
Who: Manages Results?

- Company responsibility; have discretion
- What is managed?
  - Assurance that ALL employees get tested
  - Review of individual medical reports to assure proper medical follow up
  - Employee pool of individual clearances
  - Aggregate data and group reports
- Can be managed by in-house medical professionals, IH/Safety, outside consultants, national providers
- Who is most competent to manage a program????
- Who do you trust????
What: Is Tested?

- Depends on health issues or concerns
  - What workplace hazards and potential exposures?
  - What are earliest possible health indicators of concern?
- Two Levels of Standards:
  - Federal/State requirements
  - Company/Industry standards often more stringent
- OSHA Standards often outline specific minimal testing requirements and type of clearance needed
  - Hearing Conservation: annual audiograms, comparison with prior data, determination of threshold shifts
  - Respirator Protection: baseline questionnaire, annual review of changes to job/medical status, annual fit testing
Standards Include

- Acrylonitrile
- Arsenic
- *Asbestos
- Benzene
- Bloodborne Pathogens
- Butadiene
- Cadmium
- Carcinogens
- Coke Oven Emissions
- Compressed Air
- Cotton Dust
- Dibromochloropropane
- Ethylene Oxide
- Formaldehyde
- *HAZWOPER
- *Hearing Conservation
- Laboratory Chemicals
- Lead
- Methyleneedianaline
- Methylene Chloride
- Noise
- *Respirator Protection
- *Silica
- Vinyl Chloride

* Pertinent to Power Generation
What: Paperwork?

- Consent forms
- Medical history questionnaires
  - OSHA issued specific questions for respirator & asbestos clearance, and may for silica (future)
  - Respirator questions TERRIBLE – virtually every worker would have positive answers to at least one question, thus requiring further medical evaluation
  - Adding supplemental questions can reduce number of medical evaluations and speed clearance process
- Medical reports with test results
- Medical clearance letters (audiometric notification)
- Group and aggregate data reports
What – New Silica Standard

- Medical and work history, with emphasis on
  - Past, present and anticipated exposure to RCS, dust, etc.
  - History of respiratory system dysfunction
  - History of TBC
  - Smoking status and history
- Pulmonary Function Testing (NIOSH certified)
- Chest X-ray with ILO interpretation (B-reader)
- TB Test
- Other Tests – PLHCP
  - e.g., kidney, immune, lung CT if chronic exposure
- Physical Exam & Medical Reports to EE & employer
Why?

- **Purposes of Medical Surveillance**
  1) to ensure that workers are not adversely affected by environmental conditions or other aspects of their jobs
  2) to detect as early as possible any signs of exposure or adverse health effects
  3) to help optimize health and productivity of workforce

- **Why test**
  - Surveillance helps assure a safe and healthy workplace
  - Required by federal (OSHA, EPA) and state regulations
  - Better to be too sensitive and pick up “false positives” than be lax and miss something important
Half Time

60 SECOND STRETCH BREAK
Where: to Test?

- **Onsite at Workplace**
  - In-house medical clinics
  - Mobile units

- **Offsite near Workplace**
  - Local clinics
Where: In-House Medical Clinics

**Pros**
- Direct Control
- Flexible Schedules
- Minimal EE downtime/lost production
- Continual access to data

**Cons**
- Limited Resources
- Testing can overwhelm other services
## Where: Local Clinics

### Pros
- Availability
- Scheduling flexibility
- Can handle small numbers
- Additional services, e.g., drug tests, follow-up physical exams

### Cons
- Lack of control, time spent managing process
- EE travel/waiting/downtime ➔ lost production/liability
- If multiple clinics, reports are different, inconsistent clearances, data not easily aligned
- Limited hours (e.g., evenings)
Where: Mobile Unit Services

**Pros**
- Standardized protocols, equipment, QA, staff, training, test reference ranges
- Streamline high volumes
- Minimal EE downtime/lost production
- Small staff can manage large testing program
- Centralized data, QC, sophisticated reporting/information systems

**Cons**
- Scheduling dates
- Minimal numbers to be cost-effective (est. = 10-15)
- Testing Stragglers
Consider on-site Medical Surveillance exams to reduce worker travel time & waiting time (down time) ⇒ enhance productivity on the job
When: To Test / Retest

- **Frequency** is based on regulatory requirements and company policy. Some requirements:
  - Hearing Conservation – annually
  - Respirator Clearance/Fit Testing – annually
  - HAZMAT/Emergency Response/Fire Brigade – annually
  - DOT Commercial Driver – 2 years maximum
  - DOT Drug – variable
  - Biological Monitoring - variable
When: To Test / Retest

- Company responsible for assuring workers get tested within required time limits. Want a vendor who will work closely to ensure timely testing.

- Some discretion about panel of tests and frequency they are performed
  - e.g., Pulmonary function tests for respirator clearance
  - e.g., Broader blood tests / urinalysis
When: Get Test Results

- **Same Day**
  - Audiograms from hearing tests
  - Respirator fit testing

- **Week**
  - Critical Alerts
  - Lab. Tests / X-rays / EKGs

- **3-4 Weeks**
  - Final medical reports
  - Medical clearance letters/reports

- **Month(s)**
  - Aggregate data reports and analyses
How? Administration

- **Power Company** - Strong leadership, financial support, administrative and logistical oversight
- **Vendor** – Strong leadership, financially healthy, state of the art, commitment to reinvest for long-term
- **Non-Cleared Worker** - Prompt medical resolution process that efficiently schedules follow-up appointments/testing and gets workers to the right place at the right time. This requires hands-on problem solving and effective communication.
- **Centralized Data Management & Record Keeping** - Valuable long-term investment
How: Tips of Using Vans

- Secure optimal van location (days/weeks)
  - Quiet area
  - Level ground
  - Within 100 feet of building for close access
  - Industrial electrical power outlets for quiet operation
  - Close to bathrooms/other rooms needed for physical exams

- Have staging area for workers to wait before entering unit
Importance of Data Analysis

- Analysis of Aggregate group data essential

- Example 1: Liver Function
  - Certain % of tests out of range in general population due to heavy alcohol use and hepatitis B or C
  - If percent of abnormal LFT is twice what is expected in population, red flags are raised

- Example 2: Musculoskeletal Injury
  - Workers’ Compensation or Injury data can direct root cause analysis, e.g., carpal tunnel syndrome, ankle/knee problems that can have ergonomic solutions
A Broader View of Risk Management

- We often discuss Risk Management without thinking of Health Risk Management
- **Leading causes** of worker illness, absence, medical costs and mortality are chronic diseases
  - Cardiovascular disease
  - Musculo-skeletal problems
  - Cancer
  - Diabetes
- **Wellness programs** often have low participation rates
- Consider including **key health risk measures** as part of your medical surveillance testing program
  - Blood Pressure
  - Hemoglobin A1c
  - Cholesterol
  - Percent Body Fat
Summary

- We’ve looked at a broad overview of Medical Surveillance
- Examined the Who, What, Why, Where, When, How of setting up/managing cost-effective, efficient, quality programs that meet regulatory requirements and benefit the health, productivity and well-being of your workforce
- Considered pros and cons of in-house/mobile unit testing vs. sending workers to occupational clinics
- Healthy workers = Healthy companies!!!!!!!!!!
Questions ????
Discussion ????