Preventing Occupational Illness

Occupational Hygiene Association of Ontario
Toronto – March 23, 2012

Leon Genesove, MD DIH FRCPC
Chief Physician, Occupational Health and Safety Branch
Ontario Ministry of Labour
This presentation has been prepared to assist workplace parties in understanding their obligations under the Occupational Health and Safety Act (OHSA) and the regulations. It is not intended to replace the OHSA or the regulations and reference should always be made to the official version of the legislation.

It is the responsibility of the workplace parties to ensure compliance with the legislation. This presentation does not constitute legal advice. If you require assistance with respect to the interpretation of the legislation and its potential application in specific circumstances, please contact your legal counsel.
Objectives

- Learn about Ministry of Labour’s Safe At Work Ontario strategy to protect workers

- Understand what occupational illness is and what requirements in health and safety legislation may apply

- Review prevention of occupational illness

- Learn about medical surveillance requirements for common designated substances

- Resources
Safe At Work Ontario - Overview

- *Safe At Work Ontario* is the Ministry of Labour’s (MOL) occupational health and safety compliance strategy designed to:
  - Improve the health and safety culture of workplaces
  - Reduce workplace injuries and illness
  - Avoid costs for employers and the Workplace Safety and Insurance Board (WSIB)
  - Lessen the burden on the health care system
  - Provide a level playing field for compliant employers

- Cornerstones:
  - Focused inspections
  - Transparent enforcement
  - Intervention and system partnership
  - Sustained compliance through Internal Responsibility System (IRS)
  - Continuous evaluation and improvement of the strategy
Safe At Work Ontario – Overview (cont’d)

- **Two additional components:**
  - **Blitzes** (heightened enforcement focus), for example:
    - New and Young Workers (industrial & health care) May to August 2011
    - Personal Protective Equipment (industrial & health care) October 2011
    - Infection Control (health care) November 1 - 30 2011
    - Musculoskeletal Disorders (MSD) Industrial, Construction, Mining, and Health Care Sectors February 1 - 29 2012

- **Sector Plans:**
Sector Plans

- As part of Safe At Work Ontario, the MOL develops annual sector-specific enforcement plans that focus on hazards specific to those workplaces.

- The plans describe the health care, industrial, construction, and mining sectors and outline what inspectors will be looking for during an inspection.

- Sector Plans are posted by July 1 on the MOL website: http://www.labour.gov.on.ca/english/sawo/sectorplans/index.php
Chief Prevention Officer

- As recommended by the Expert Advisory Panel on Occupational Health and Safety, Ontario appointed a new Chief Prevention Officer, George Gritziotis in October 2011.
- As Chief Prevention Officer, Mr. Gritziotis is responsible for:
  - developing a provincial occupational health and safety strategy.
  - coordinating and aligning Ontario's workplace health and safety prevention system.
  - providing advice on the prevention of workplace injuries and occupational diseases.
What is Occupational Illness?

**Definition** (Occupational Health and Safety Act)

“occupational illness” means a condition that results from exposure in a workplace to a physical, chemical or biological agent to the extent that the normal physiological mechanisms are affected and the health of the worker is impaired thereby and includes an occupational disease for which a worker is entitled to benefits under the *Workplace Safety and Insurance Act, 1997*; (“maladie professionnelle”)
What workplace hazards may cause occupational illness?

Chemical Agents – dusts, vapours/gases, fumes
- solvents, metals, poisons, acids, bases, etc.

Biological Agents – infectious bacteria, viruses, parasites and mould,
- parts/products of animals, plants or microorganisms

Physical Agents – noise, heat, cold, vibration, radiation, high or low air pressures

Source: WSIB Occupational Diseases Fact Sheet (www.wsib.on.ca)
How does the body react to workplace hazards?

Three kinds of reactions in the body:

1. Immediate or acute reactions – example: shortness of breath, headache, nausea from one time exposure e.g. chemical spill
   - Usually not permanent

2. Gradual reactions – e.g. asthma or dermatitis (skin rashes) after exposure over days, weeks or months
   - Can get worse or persist

3. Delayed reactions – e.g. hearing loss, cancer, lung fibrosis after long-term exposure
   - May develop after exposure or job is finished

Source: WSIB Occupational Diseases Fact Sheet (www.wsib.on.ca)
Percentage of WSIB Fatality Claims by Year Allowed*

- Occupational Diseases
- Traumatic Injuries
- Pre-1990 100% Permanent Disability Pensions
Preventing Occupational Illnesses

- **Primary prevention** – preventing development of disease/illness by taking measures to avoid/control exposures

- **Secondary prevention** - early detection, intervention and treatment of an existing disease to prevent permanent impairment or reverse disease process e.g. medical surveillance

- **Tertiary prevention** – involves medical management of established disease to minimize impairment by restoring function and reducing disease-related complications
Primary Prevention of Occupational Illness

Elements include:

- Anticipation
- Hazard Recognition
- Hazard Control - Hierarchy of controls
- Education
- Regulation
Hierarchy of Controls

Source
- Elimination
- Substitution
- Source or process modification
- Automation
- Isolation / containment / enclosure
- Local exhaust ventilation
- General ventilation
- Increase distance
- Work scheduling
- Good working practice
- Operating procedures
- Personal protective equipment

Path

Worker

Prevention

Engineering

Procedures

PPE
Regulatory Framework - The Occupational Health & Safety Act and Related Regulations

- Occupational Health and Safety Act (OHSA) R.S.O. 1990

Regulations:
- Workplace Hazardous Materials Information System (WHMIS)
- Industrial Establishments Reg. 851
- Regulations for Construction Projects
- Regulations for Mines and Mining Plants
- Health Care and Residential Facilities O. Reg. 67/93
- Designated Substances O. Reg. 490/09 - Consolidated as of July 1, 2010
- Control of Exposure to Biological or Chemical Agents, Reg. 833
- Needle Safety O. Reg. 474/07
- Asbestos on Construction Projects and in Buildings and Repair Operations, O. Reg. 278/05

Reporting of Occupational Illnesses

- Employer’s responsibilities in Subsection 52(2) of the *Occupational Health and Safety Act*:
  - “If an employer is advised by or on behalf of a worker that the worker has an occupational illness or that a claim in respect of an occupational illness has been filed with the Workplace Safety and Insurance Board by or on behalf of the worker, the employer shall give notice in writing, within four days of being so advised, to a Director, to the committee or a health and safety representative and to the trade union, if any, containing such information and particulars as are prescribed.”

- 52(2) applies with all necessary modifications if an employer is advised by or on behalf of a former worker that the worker has or had an occupational illness or ...claim… (OHSA subsection 52(3))

- The prescribed information to include in the report may be found in the sector regulation applying to that workplace

- This includes occupationally acquired infections.

- The requirement to submit the notice does not require laboratory confirmation of an occupational illness or waiting for acceptance of WSIB claim
Regulatory Framework - Control of Exposure to Biological or Chemical Agents, Reg. 833

- Employer shall take all measures reasonably necessary to protect workers from exposure to a hazardous biological or chemical agent because of storage, handling, processing or use of such agent in the workplace

- Measures include:
  - Engineering controls;
  - Work practices;
  - Hygiene facilities and practices; and
  - Personal protective equipment under specific conditions

- MOL has regular review and update process for OELs for biological and chemical agents every year
Example of Prevention of Occupational Illness - Work Related Asthma (WRA)

- Asthma caused or triggered by an agent in the workplace.
  - e.g. dust, fumes, chemicals, mould etc.
- Approximately, 15% of all adult asthma cases can be work related asthma (American Thoracic Society).

WRA generally consists of two types

**Occupational Asthma (OA)**
caused by workplace exposures to sensitizers or irritants (reactive airways dysfunction)

**Work-Aggravated Asthma (WAA)**, or Work-Exacerbated Asthma (WEA)
worsening of asthma due to conditions at work.
Prevention of Occupational Asthma (OA)

Examples:


  - education & surveillance, elimination, substitution, reduction of exposure (↓glove latex protein; ↓glove powder)

Components of Designated Substances Regulation (DSR)

- Exposure assessment
- Control program (exposure limit)
- Consultation with joint health and safety committee
- Air monitoring
- Respirators
- Medical examination and clinical tests as per Code for Medical Surveillance
- Exposure record keeping
- Medical record keeping
- Fitness determination and notification
Objectives of a DSR medical surveillance program

- Ensuring fitness for exposure to a designated substance/identifying workers with conditions which may be aggravated by exposure to a designated substance and establishing a baseline measure for determining changes in health

- Evaluating the effect of a designated substance on workers

- Enabling remedial action to be taken when necessary

- Providing health education
Designated Substances Medical Surveillance Programs

- Employers must establish a medical surveillance program for the benefit of workers where prescribed (Occupational Health and Safety Act (OHSA) 26(1)(h))

- Employer shall pay associated costs (OHSA 26(3)(a)(b)(c))

- Worker participation is voluntary (OHSA 28(3))

- Medical surveillance programs as prescribed in the Designated Substances Regulation O. Reg. 490/09
  (http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_090490_e.htm)
Components of Code for Medical Surveillance

- Medical examinations (pre-employment, pre-placement, periodic)
  - history
  - physical examination

- Clinical Tests

- Action levels

- Health education

- Record keeping
Lead – Medical Surveillance

- **History**

- **Clinical tests**
  - Blood lead concentration – inorganic lead
  - Urine lead concentration – organic lead - tetraethyl or tetramethyl lead
  - Frequency of periodic blood and urine tests depends on the extent of the hazard and the worker’s previous test levels and should usually be at one to three month intervals

- **Health education**
  - Personal cleanliness, danger of eating, drinking and smoking in lead exposed areas, hazards from lead, discussion of examination results, need to notify employer and examining physician as soon as possible in the case of pregnancy
Isocyanates – Medical Surveillance

- **History**
  - Previous exposure to isocyanates (occupational and non-occupational)
  - allergies, asthma
  - past or present breathing or skin disorders

- **Periodic questionnaire**
  - prior to employment and at six monthly intervals
  - history of frequency and duration of exposure to isocyanates since previous examination
  - signs and symptoms that may be an early indication of isocyanates sensitivity
Isocyanates – Medical Surveillance

- **Clinical tests**
  - Pulmonary function tests if indicated by the questionnaire and at least every two years
  - Chest x-ray may be requested by the examining physician if indicated by questionnaire and pulmonary function results

- **Health education**
  - personal cleanliness, eating, drinking and smoking should be prohibited in isocyanate-exposed areas, hazards of isocyanates, discussion of examination results
Silica – Medical Surveillance

- **History**
  - Previous exposure to silica
  - Personal habits (smoking)
  - Past or present breathing disorders (particularly tuberculosis)
  - History of frequency and duration of exposure to silica since previous examination
  - Signs and symptoms of breathing disorders (shortness of breath, cough, sputum, wheezing, chest pain, etc.)

- **Physical examination**
  - Emphasis on the respiratory system
  - Frequency of periodic examination will depend
    - on the intensity and length of exposure to silica
    - be decided by the examining physician but
    - at least once every two years
Silica – Medical Surveillance

- Clinical tests
  - chest x-ray (one view) shall be taken once every two years
  - lateral view only necessary if required by the examining physician
  - when exposure to silica is discontinued the examining physician will determine the duration and frequency of follow-up which will be based on the intensity and duration of exposure and findings in previous x-rays
  - pulmonary function tests shall be taken in conjunction with the chest x-ray
Chest X-rays

<table>
<thead>
<tr>
<th>Normal</th>
<th>Silicosis</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.jpg" alt="Normal Chest X-ray" /></td>
<td><img src="image2.jpg" alt="Silicosis Chest X-ray" /></td>
</tr>
</tbody>
</table>
Asbestos – Health Effects

- Asbestos is a fibrous mineral with thermal resistance, tensile strength and acoustic insulation properties.

- Associated with cancers (lung cancer and mesothelioma) and non-cancerous disease (asbestosis, benign pleural effusions, pleural plaques).

- Occupational exposure to asbestos in Ontario occurs primarily on construction projects and in building and repair operations.
Asbestos – Work Report

- Activities that may expose a worker to asbestos are classified into type 1, 2 and 3 operations based on the severity of the potential hazard of exposure to asbestos.

- Employer of worker working in a Type 2 or 3 operation shall report the number of hours exposed to asbestos in Type 2 and Type 3 operations to the Ministry of Labour at least once in each 12 month period and immediately on the termination of the employment of the worker (Asbestos Work Report Form 1).
Asbestos – Workers Register

- The Provincial Physician, Ministry of Labour, maintains an Asbestos Workers Register listing the name of each worker for whom an employer submits an asbestos work report.

- Upon the recommendation of the Provincial Physician, Ministry of Labour, a worker listed in the Register may volunteer to undergo medical examination (medical questionnaire, chest x-rays, pulmonary function tests).

- Subsequent examination upon recommendation of the worker’s physician takes place at least two years after the most recent examination.
Asbestosis CXR
Resources

Ministry of Labour:

- Ministry of Labour Health & Safety Contact Centre
  Tel. 1-877-202-0008
  - Please contact the MOL’s Health & Safety Contact Centre anytime at 1-877-202-0008 to report critical injuries, fatalities or work refusals; or, if you suspect unsafe work practices.
  - Call 8:30 am to 5:00 pm, Monday to Friday, for general inquiries about workplace health and safety. In an emergency, always call 911 immediately.

Health and Safety Associations

- [www.healthandsafetyontario.ca](http://www.healthandsafetyontario.ca)

Canadian Centre for Occupational Health and Safety

- [http://www.ccohs.ca/](http://www.ccohs.ca/)
Resources (cont’d)

Workers Health and Safety Centre
- www.whsc.on.ca/contact/contact.cfm
- Tel: 416 441-1939 or toll-free: 1-888-869-7950

Occupational Health Clinics for Ontario Workers
- www.ohcow.on.ca/contactus/contact_us.html
- Tel: 416 510-8713 or toll-free 1-877-817-0336

Workplace Safety Insurance Board – Facts Sheets for Occupational Disease
http://www.wsib.on.ca/en/community/WSIB/230/ArticleDetail/24338?vgnextoid=2f432ac8e5e
d7210VgnVCM100000449c710aRCRD
Questions?

Thank you!