

# ***Developing an occupational exposure limit for diesel exhaust – the challenges and options?***

Preventing the Burden of Cancer in Canada Conference  
November 5, 2015



# United Steelworkers of Canada

## Occupational Diseases aren't being recognized

- Latency period for chronic diseases (cancer, lung problems)
- Multi-causal nature of Occupational Diseases including aging
- Workers may not be aware that some exposures at work can cause health problems
- Primary care physicians (often pressed for time) are primarily interested in treating their patient's condition rather than going into the exposure history to find the cause of the disease
- Workers' compensation plans are often under economic/political pressures to reduce claims and restrict entitlement
- Solvent related neuropsychiatric conditions are difficult to diagnose and often not thought to be related to workplace exposures.
- Compensation agencies have been very hesitant to address workplace stress health issues
- Even diseases known to be almost exclusively work-related, like mesothelioma and silicosis, are under-recognized as occupational diseases (often claims are never submitted)

# Non aligned focus areas



## 1. Serious non monetary losses

- Fatalities and permanent disabilities where the magnitude of harm may be poorly reflected in claims costs



## 2. Slow acting harms

- Where there are many years between the initial cause of harm and the onset



## 3. Catastrophic risks

- Risks that seldom materialize but have the potential to cause widespread damage or loss of life

## 4. Invisible risks

- Risks that aren't fully revealed and may be hard to detect

## 5. Conscious Opponents

- Risks created by people who deliberately seek to avoid regulatory measures

## 6. Emerging Risks

- Long term, uncertain trends that aren't urgent yet, but may be important

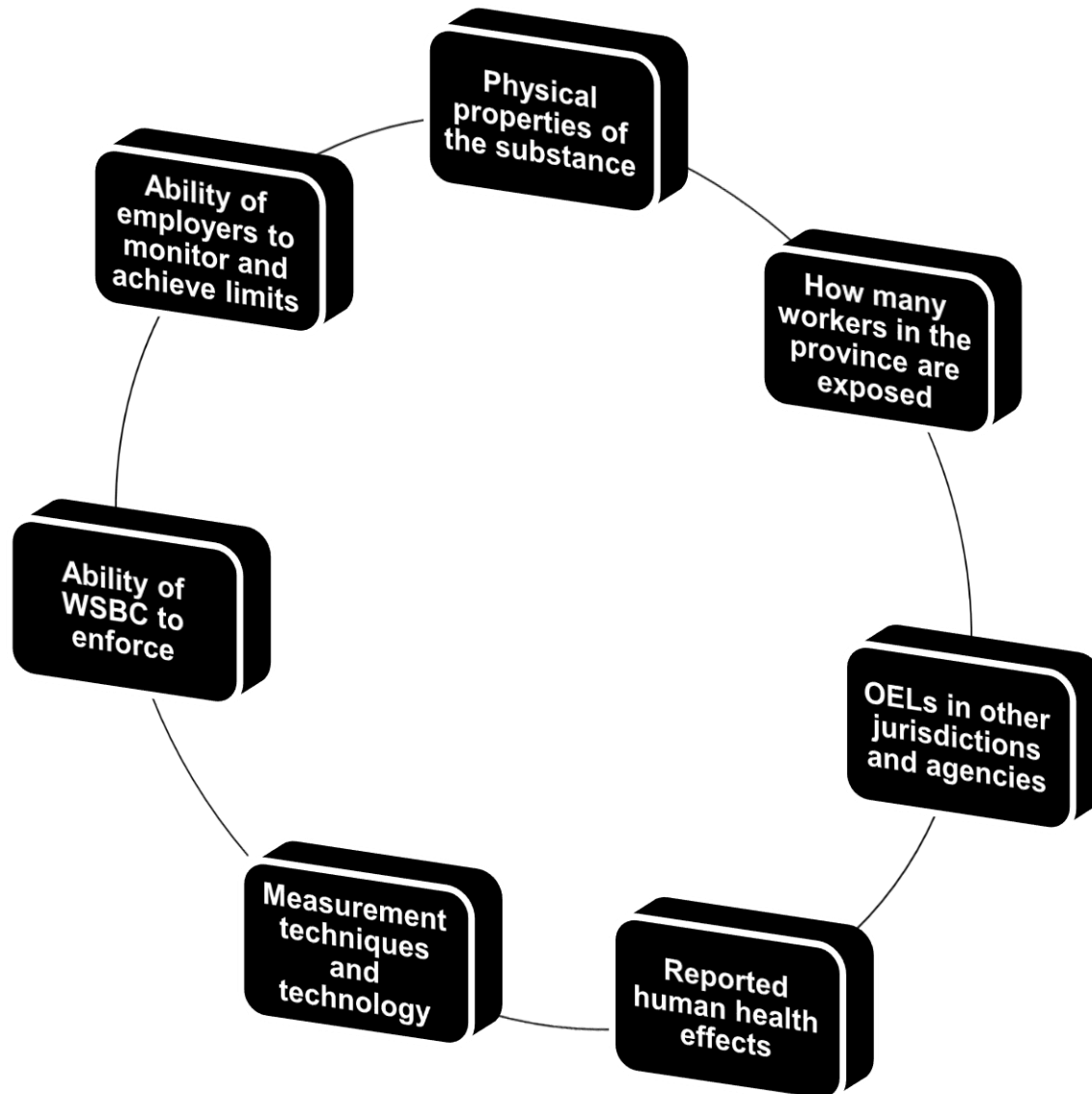


# OEL Committee



- Multi-faceted team
- Annual review
- **DO NOT**  
automatically adopt

# Considerations for Adopting



# OHS Regulation

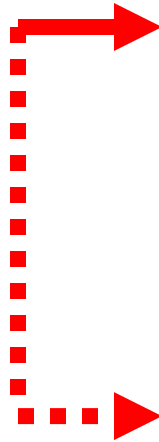
## 5.57 Designated substances

- (1) If a substance identified as any of the following is present in the workplace, the employer must replace it, if practicable, with a material which reduces the risk to workers:
  - (a) ACGIH A1 or A2, or IARC 1, 2A or 2B carcinogen;
- (2) If it is not practicable to substitute a material which reduces the risk to workers, in accordance with subsection (1), the employer must implement an exposure control plan to maintain workers' exposure as low as reasonably achievable

# Combustion



Carbon Source + O<sub>2</sub> + H<sub>2</sub>O



CO<sub>2</sub> + H<sub>2</sub>O + Energy

- CO
- NO<sub>x</sub>
- SO<sub>2</sub>
- CH<sub>4</sub>
- Polycyclic aromatic hydrocarbons (PAH's)
- Aldehydes
- Ketones
- Particulates

# Options

## **5.56 Oxygen deficiency**

The airborne concentration of any gas or vapour must be controlled so that a worker is not exposed to an oxygen deficient atmosphere, and there is no other hazard, such as fire or explosion.



# Health Effects



**NO<sub>x</sub>, SO<sub>2</sub>,  
Aldehydes,  
Ketones** }



**Upper Respiratory  
Irritation**

**CO, CH<sub>4</sub>**



**Headache, Nausea,  
Asphyxiation**

**PAH's**



**Cancer**

# Exposure Limits

## 5.48 Exposure limits

Except as otherwise determined by the Board, the employer must ensure that no worker is exposed to a substance that exceeds the ceiling limit, short-term exposure limit, or 8-hour TWA limit prescribed by ACGIH.

**Focus: CO/CO<sub>2</sub>, NO/NO<sub>2</sub>, PAHs**

# What Industries?



Ferry Workers – booths and ships



Trucking



Oil & Gas



Construction