



Occupational
Cancer
Research
Centre

Exposure to Carcinogens in the Ontario Mining Sector

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Workplace Safety North Mining Health and Safety Conference

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Towards a cancer-free workplace

Outline



- OCRC Background
- Occupational exposures and mining
- Ontario Mining Exposure Database
 - Issues we are examining
- Current and Future Research
- Other research ideas?



Occupational Cancer Research Centre

- Established in 2009
- Funded jointly by
 - Cancer Care Ontario, Canadian Cancer Society, WSIB (Ministry of Labour Prevention Office transition)
 - Supported by United Steelworkers and other stakeholders
- Steering Committee composed of representatives of the funders and stakeholders



Canadian
Cancer
Society

Société
canadienne
du cancer

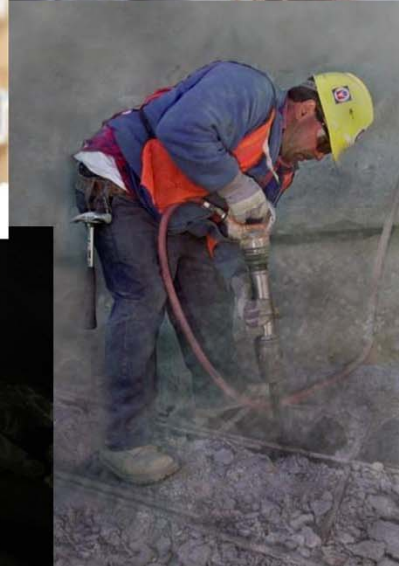
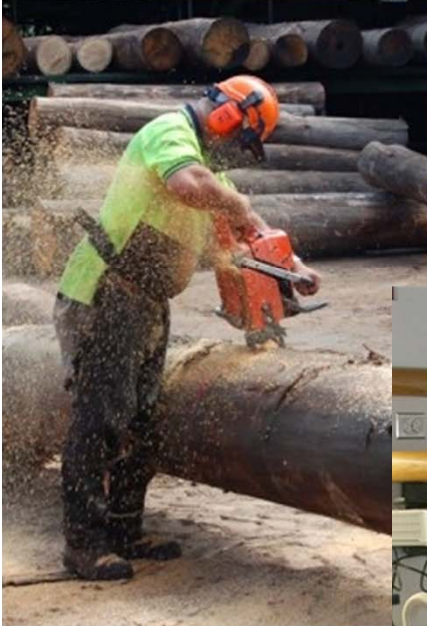
Cancer Care Ontario

Action Cancer Ontario

wsib
cspaat
ONTARIO

Workplace Safety
& Insurance Board

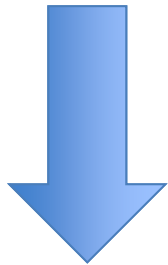
Commission de la sécurité
professionnelle et de l'assurance
contre les accidents du travail



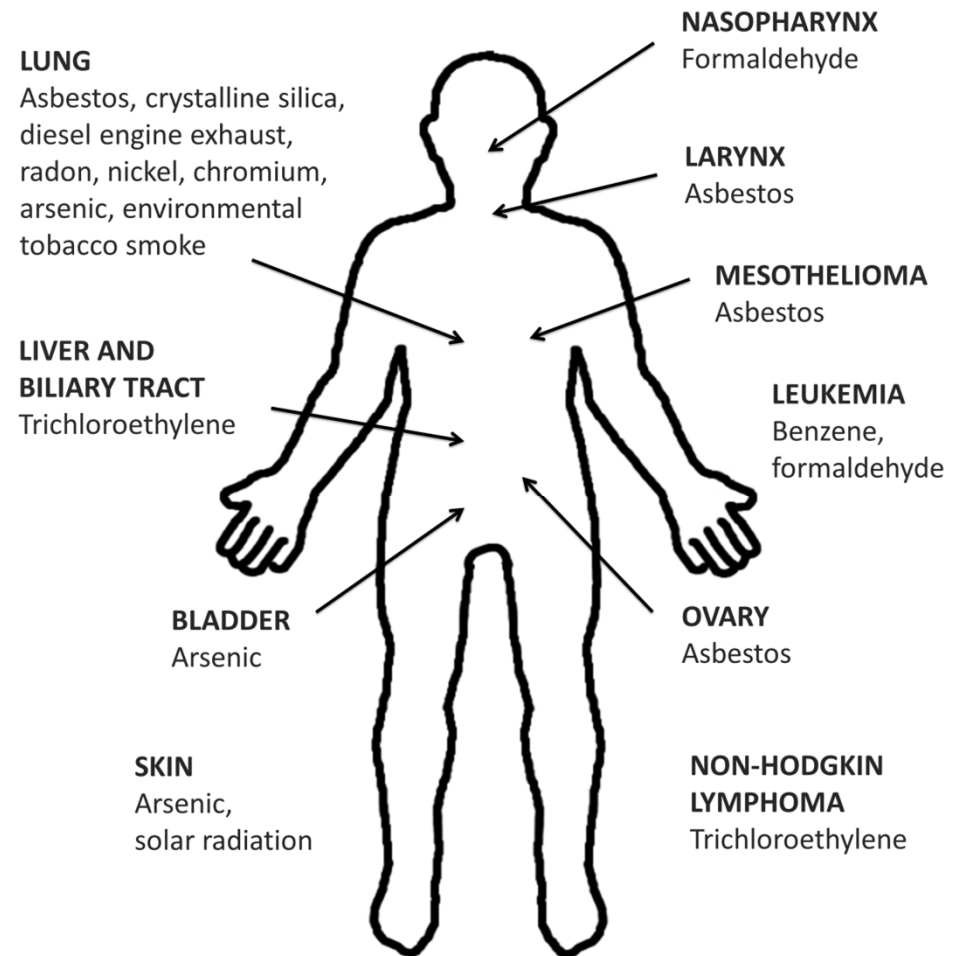
Assessing the Human & Economic Burden of Occupational Cancer in Canada*



44 Internationally
Recognized Workplace
Carcinogens



27 Different
Types of Cancer



* Funded by a CCSRI Team Grant in collaboration with CCS-ON

Ongoing Interest in Mining & Health



- “New” carcinogens in the mining sector
 - Shift work, diesel engine exhaust
- Improved methods for “old” carcinogens
 - Exposure assessment and analytical
- New exposures (e.g., biodiesel)

Ontario Mining Exposure Database



- Ministry of Labour measurements retrieved from Northern Ontario
 - 1970s and 1980s
 - 100,000+ measurements, 17 exposure agents
- Ministry of Labour Medical Surveillance (MESU) data
 - Approx. 300,000 measurements
 - 1980s and early 1990s
 - *Less than 1% of measurements are in mining*
- Ministry stopped collecting measurements in the 1990s

Ontario Mining Exposure Database



Ontario Mine Sampled Data

Close

Search for mining sampled data

File Box number starting with... Doc Num starting with... Records added in the last x days Company Name

Search for mining sampled data

File Box Number Doc Number Mine Type Prime Mine Type Secondary NAICS 1 of 2

Company Name Site Name Site Location (or nearest town) Aggregated Data

Area of the mine sampling occurred (mill, shaft, drift, etc) Sample (UG or Surface) Sample (Area or personal) Job Title

CCDO Occupation Code **Just for individual sampling data**

Sampling time (mins) Air Volume (L) Flow rate (lpm)

Note or Comment

Sampling Start Yr Start Month Sampling End Yr End Month

Job Task

Ventilation required
 PPE required (mask, gloves, etc)

Date of last update Last update by

Double click on any row to edit sampled details

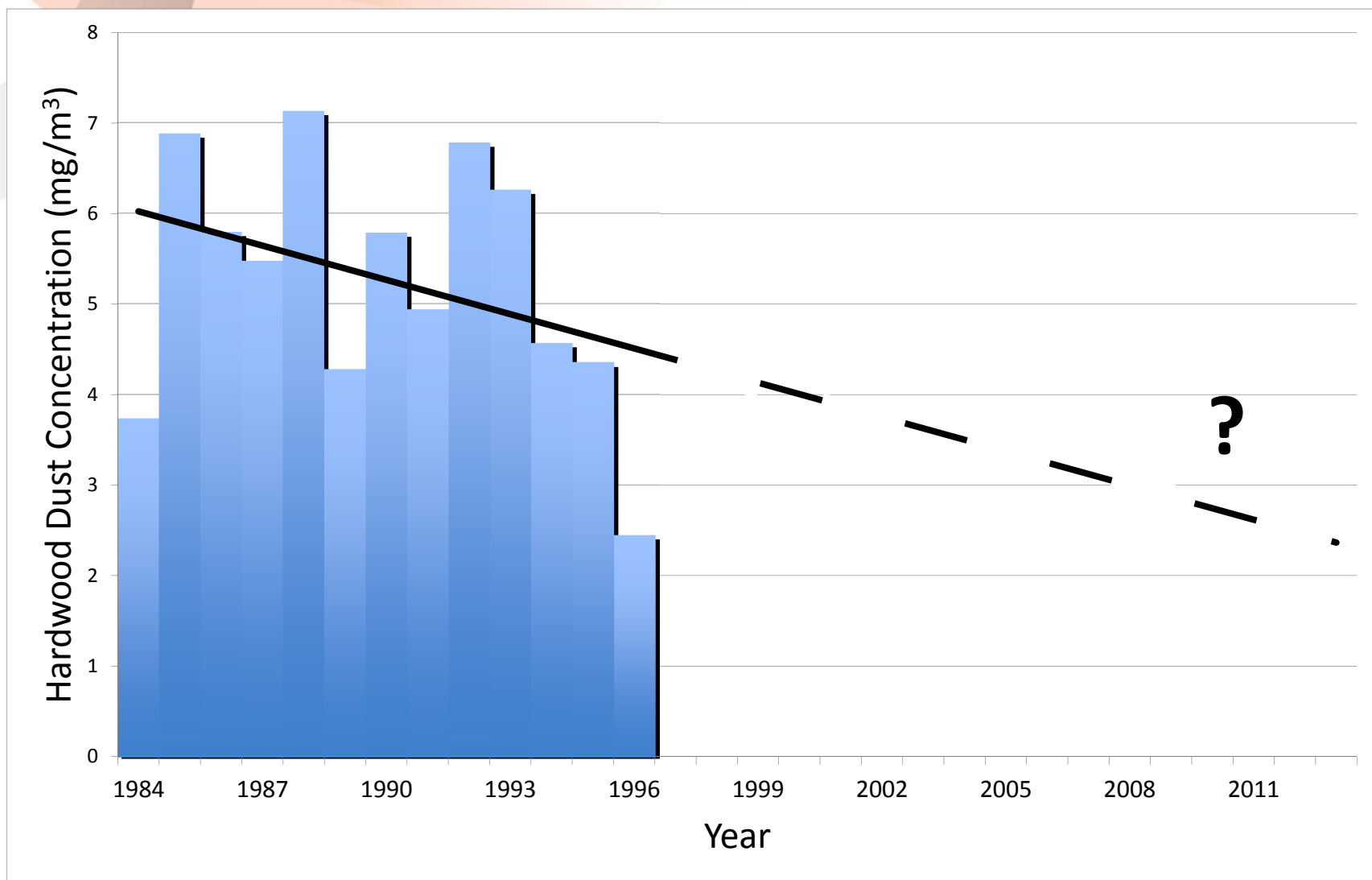
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| | 3 | 1 | Testing 1 | AG | 20 | | | | | | | |
| | 4 | 1 | Testing H | AG | 5 | | | | | | | |

Examining occupational mining exposure in Ontario



- Trends over time
- Geographic variation
- Impact of historical interventions
- Differences related to mine type
- Changes over the lifecycle of mines

Unable to Estimate Recent Exposures



* Data limited to measurements ≤ 50 mg/m³

Towards a cancer-free workplace

Impact on Prevention



- Where do we stand in relation to current and potential future OELs?
- Are there groups that are still over-exposed and should be targeted for prevention?
- Are there groups who were exposed in the past that should be targeted for screening?

Issues in Contributing Data



- Legally binding data sharing agreement
- Data continues to be owned by the contributing organization
- Secure electronic database
- Companies de-identified, aggregate reporting
 - Difficult to totally mask site
- An electronic version given back to the organization (not the entire database)
- Opportunity to query the entire database

Current & Future Research Efforts



- Current (2012) WSIB grant to develop the Ontario Mining Exposure Database
- Awaiting decision on MoL grant to create the complete Ontario Mining Exposure Database
- Seeking funding to extend follow-up and improve exposure assessment on the mining master file
- Exploring other existing cohorts of miners
- Assessing the burden of cancer associated with historic exposures

Next steps



- Complete the Ontario Mining Exposure Database
- Develop tailored prevention strategies
- Identify other research needs in mining





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Thank-you

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