Your Health & Ontario's Focus on Occupational Disease Prevention

Data, Tools & Resources to Address Risks

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Sandra Dorman, Director, Centre for Research in Occupational Safety and Health

Ontario

Refresher: Prevention Works-Ontario's 5-Yr Prevention Strategy

3 Areas of systems focus:

- **Occupational Illnesses**
- Work-related mental health and workplace violence and harassment
- Small Business

The Occupational Disease Action Plan (ODAP)

- Active from 2017 – 2020 with numerous accomplishments
- Activities were recognized by the Auditor General

Occupational Illness Prevention Steering Committee (OIPSC)

- Alignment with Prevention Works and other recommendations by the AG
- Goal of **collective impact** with evidence-based performance measures
- Mandate:
  - Improve the recognition and control of priority **exposures**, and
  - Improve recognition and reporting of **occupational illnesses**

  - to reduce the burden of occupational illness in Ontario, per the Occupational Illness Area of Systems Focus of the Prevention Works strategy

Occupational Illness Prevention Steering Committee

Occupational Health and Safety System and partners collaboration toward occupational illness prevention

Ontario

Why Occupational Illness?

COST

- person and family
- direct and indirect
- non-compensation,
- under reporting and under recognized
- WSIB vs OHIP

PREVENTABLE

- **Controlling Exposures**
- **Addressing Problem of under-recognition and under-reporting**

Past Successes: ODAP & OIPSC

- Noise campaign
- Irritants and Allergens (Skin and Lung)
- Data & Intelligence
- Electronic Medical Records
- Diesel Exhaust Particulates
- Respiratory Hazards Working Group (System Resources Inventory & MLTISD Initiatives)
- Engineered Nanomaterials
- OCRC Occ Disease Surveillance System & ODStats WEBSITE
- Selected from a list of over 25 different subject areas, including emerging issues
- www.preventoccdisease.ca & Physician/Clinician's Toolkit
- OHCOW Apps, Tools & Calculators

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OIPSC Accomplishments

Risk Based, Evidence Driven

Priority Hazard Setting, Logic Model

- Silica, asbestos and DEE *Welding Fumes was also included due to stakeholder feedback
- Allergies and irritants (potential focus on those with both lung and skin health impacts)
- Heat stress and UV/solar radiation exposure
- Noise

Occupational Disease Landscape in Ontario

- MAP Centre for Urban Health Solutions. Dr. Linn Holness and Janet Brown
- What is currently taking place with education and outreach

- Exposure and Surveillance: Data collection on workplace exposure
  - OCRC OD Surveillance Advisory Committee
  - Health Canada/OCRC Cancer in Firefighters Workshop
  - Led pan Canadian workshop. Dr. Paul Demers
  - What, how, who, will collect, collate exposure data and share with others

Occupational Health Clinics for Ontario Workers Inc.

OIPSC Accomplishments

Risk Based, Evidence Driven

SILICA CONTROL TOOL

Silica Control Tool- Construction Now Coming to Ontario!

- OHCOW in partnership with IHSA, BCCSA, CCOHS (building from Pilot)
- Cohesive Campaign MLTISD, WSIB, HSAs, U of T, CRE-OD
- Exploration into adaptation to other industries/exposures
  - Mining, Industrial, Welding Fumes, Asbestos

- Occ-tober Event-Worker Focussed Science & Prevention
  - Archived Webinars available On-Demand
- https://www.ohcow.on.ca/occupational-illness/

Ontario

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School of Public Health

Respirable Crystalline Silica and Diesel Engine Exhaust Exposure Levels in Ontario Mines

University of British Columbia
Melanie Gorman Ng

OHCOW
Kimberly O'Connell, Kevin Hedges

University of Toronto
Victoria Arrandale, Ali Shakeel

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Background on Exposure Data

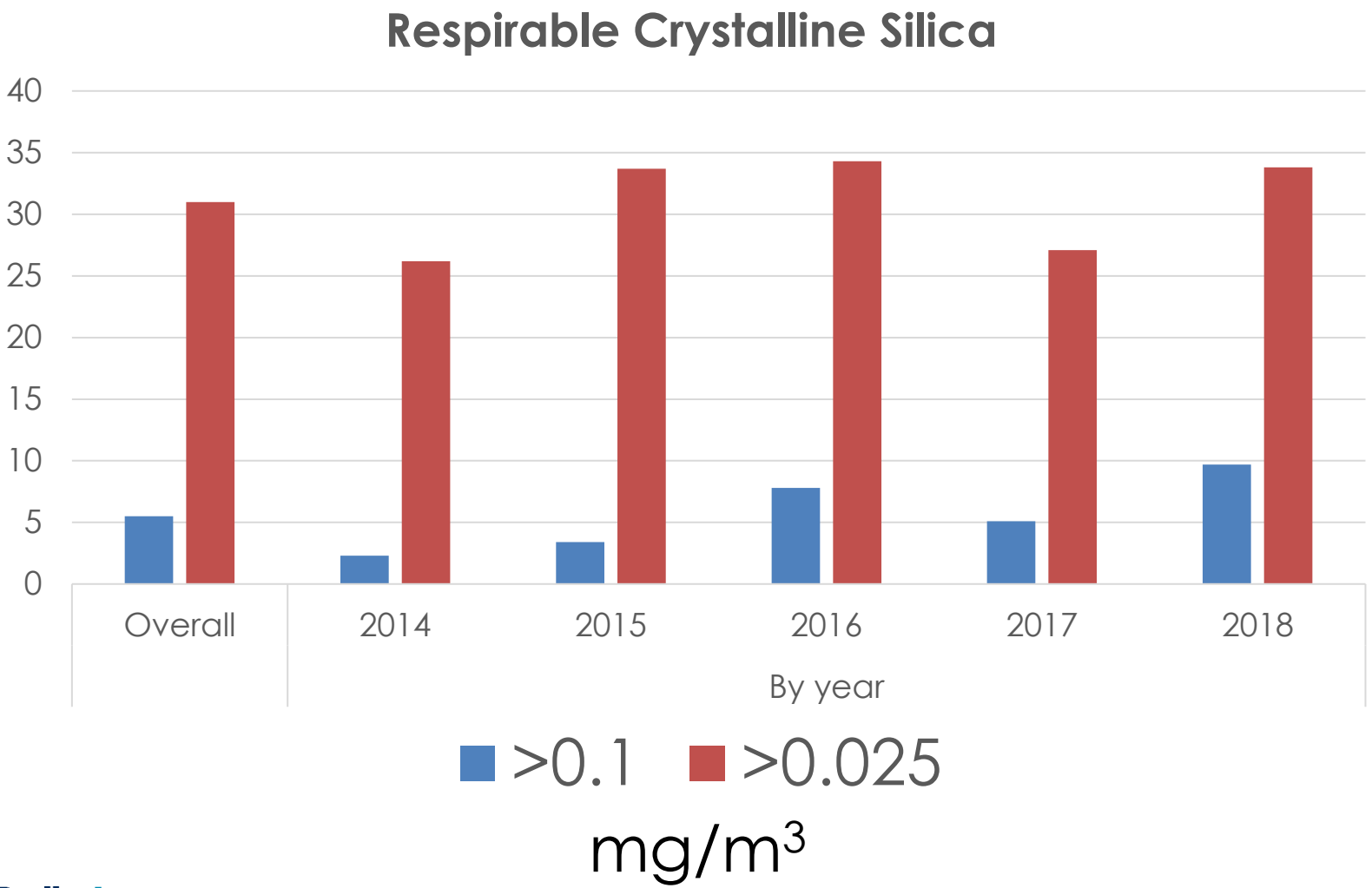
- Silica → Silicosis, lung cancer, COPD, kidney disease, connective tissue disease
- Understanding health effects requires an understanding exposure
  - Health data is held by Ministry of Health
  - Exposure data is now held by companies
- Exposure data sharing is challenging
- Occupational Cancer Research Centre previously constructed a mining exposure data base using historical data shared by the MLITSD
  - OMED data ends in the 1990s, not relevant for many current workers
- FOI request to obtain database of occupational hygiene monitoring data from Ontario mines

Exposure Measurements

- Collected from 2013 to 2018
- 14 companies, 12 hazards, 16,829 observations
- Sampling details (method, duration, personal vs. area, job type, comments etc.)
- Focused on mass and concentration

Elemental carbon	**902 samples analyzed**
Respirable crystalline silica	**1332 samples analyzed**

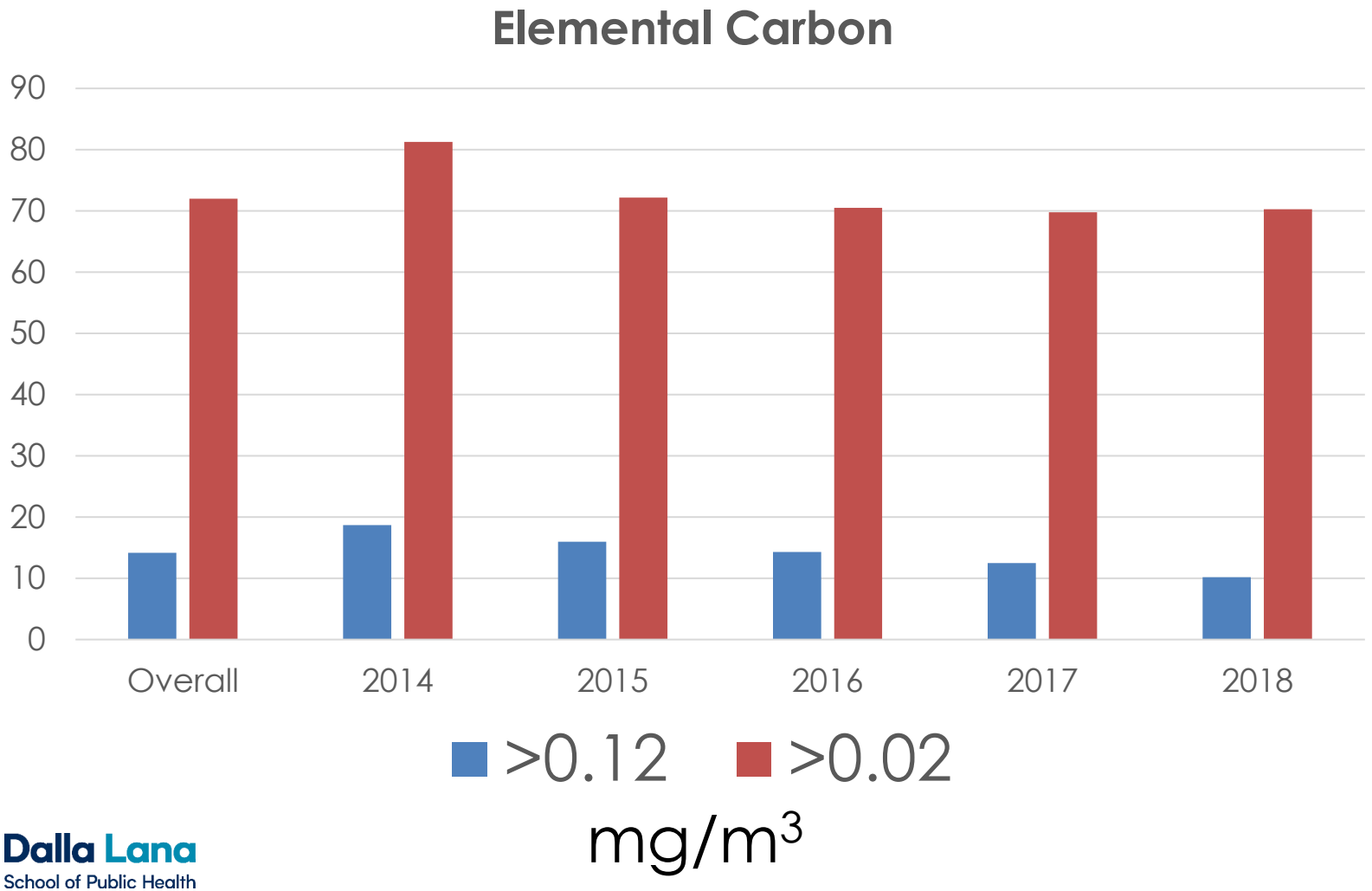
Percent above OELs



Blue > current ON limit

Red > recommended limit

Percent above OELs



Blue > **NEW** ON limit

Red > recommended limit

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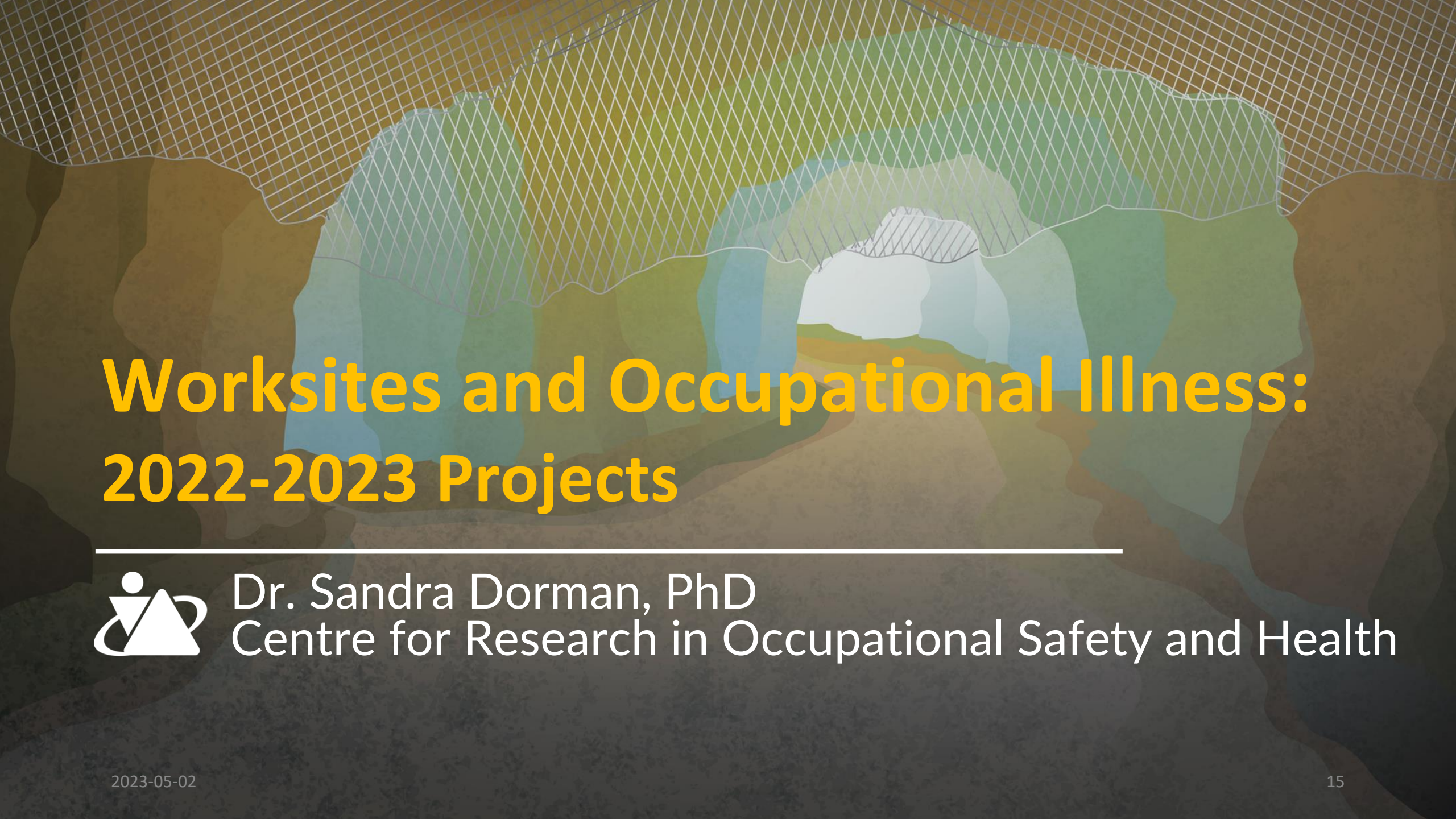
Time Trends

- Exposures continue to decrease over time
- Elemental carbon (diesel) decreasing faster
- There were differences between mines, opportunity for information sharing

Exposure	Annual Change
RCS	-1.8%
EC	-10.7%

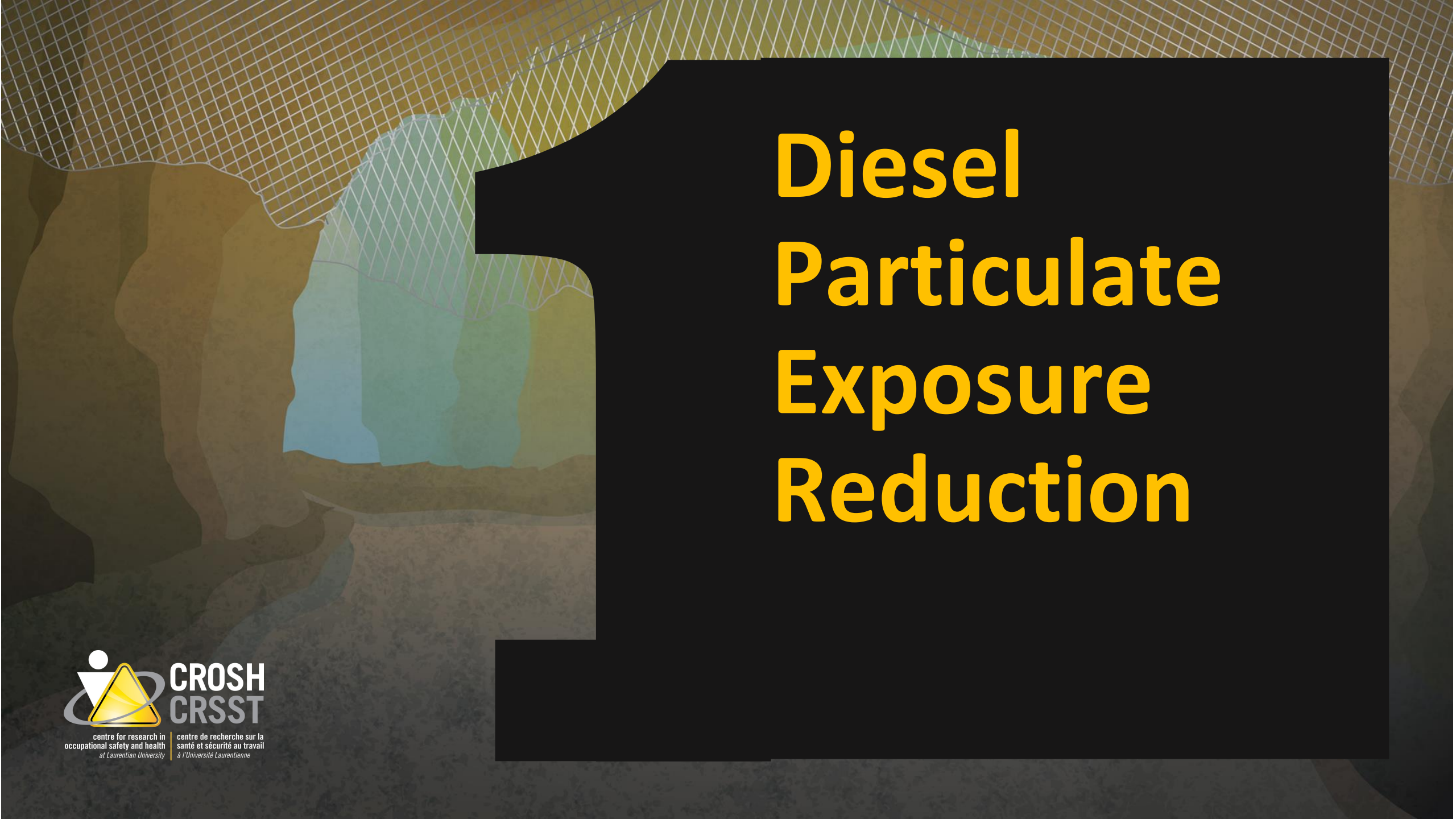
Main Messages

- Encouraging trend of annual reductions for elemental carbon, continued decrease for silica
- Majority of 2013-2017 measurements were compliant with current/proposed limits
- But 31% of RCS measurements and 72% of EC measurements above health-based levels
    - Information on respirator use and other controls not available
    - There is likely increased risk of disease at these exposure levels
    - Continued need to reduce exposure levels
- Exposure surveillance would be beneficial



Worksites and Occupational Illness: 2022-2023 Projects

Dr. Sandra Dorman, PhD
Centre for Research in Occupational Safety and Health


Diesel
Particulate
Exposure
Reduction
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centre de recherche sur la santé et sécurité au travail à l'Université Laurentienne

Summary

Ontario mine workers have some of the highest exposures to Diesel Particulate Matter.

Diesel Particulate is a known A1 Human Carcinogen.

CROSH is evaluating an educational intervention to enact change.

10:25am in Georgian C on Thursday, April 20, 2023

George Flagler, ECE, BPHE

"The United Steelworkers Diesel Particulate Project"

Diesel Particulate Project
United Steelworkers

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Summary

Heat strain risk is increasing

Despite equivalent work conditions, different workers respond differently

CROSH is developing a monitoring program to incorporate into current hot workplan practices

Implications

Current ACGIH standards cannot protect workers because:

- Some work cannot have time limits;
- Some work conditions fluctuate rapidly;
- Different workers respond differently to the same conditions;
- The same worker can respond differently, on different days, to the same conditions;
- Climate change is impacting more workplaces & workers; who currently don’t enforce guidelines or who create their own.

Why Monitor ?

Meaningful heat stress protection is:

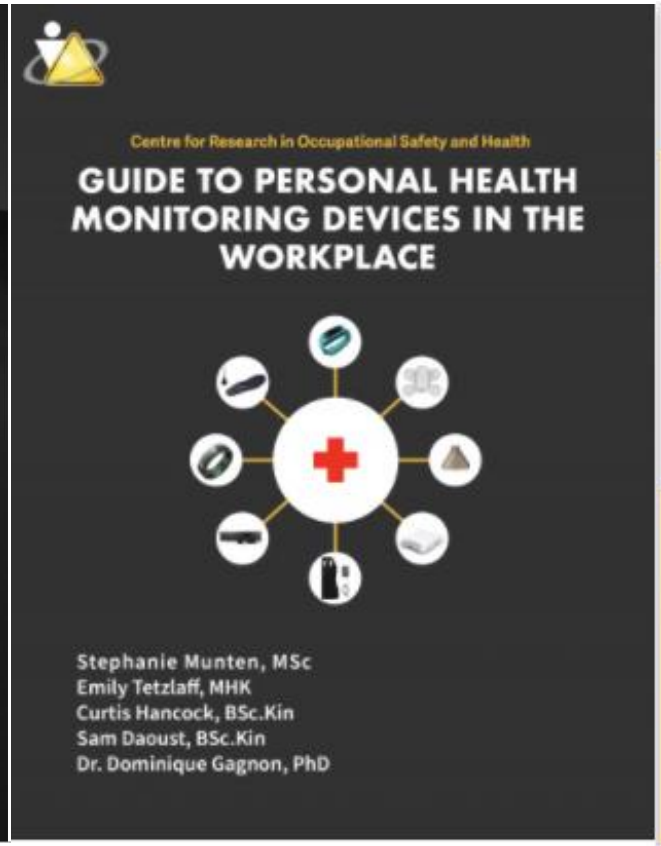
- Preventative;
- Rapid / real-time;
- Does not rely on secondary monitoring systems (e.g. check-in).

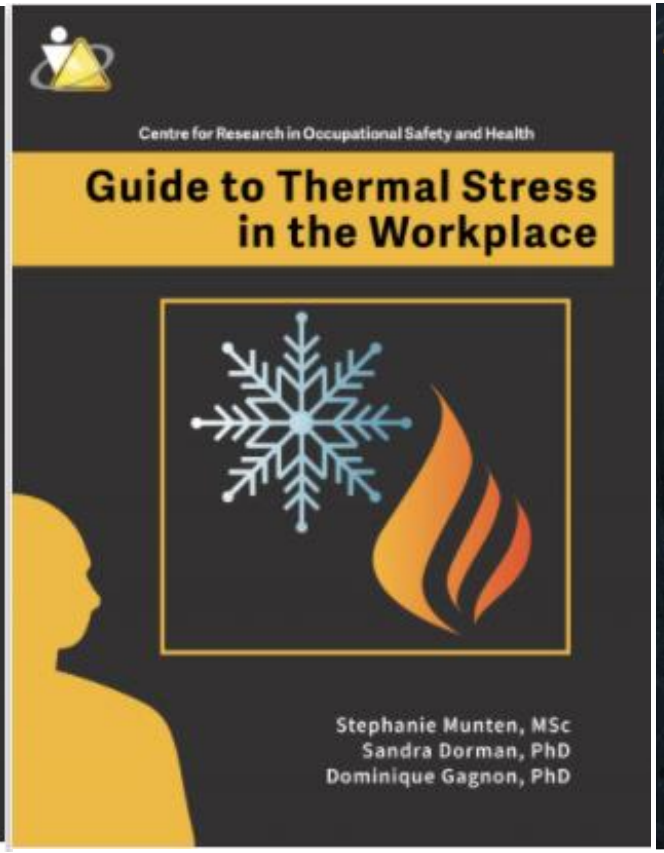
Future Directions

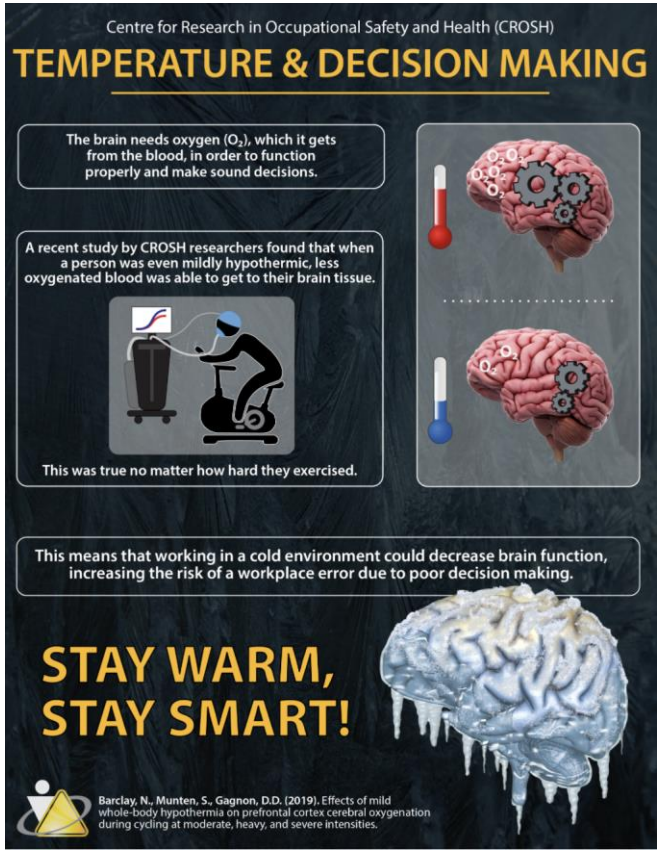
Implement and evaluate the Monitoring plan in an organization.

Implement and evaluate the Heat Strain Monitoring plan in an organization.

Resources







Konrad, Justin MHK; Gagnon, Dominique PhD; Serresse, Olivier PhD; Oddson, Bruce PhD; Leduc, Caleb MHK; Dorman, Sandra C. PhD Effect of a Simulated Mine Rescue on Physiological Variables and Heat Strain of Mine Rescue Workers, Journal of Occupational and Environmental Medicine: March 2019 - Volume 61 - Issue 3 - p 251-261 doi: 10.1097/JOM.0000000000001530

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Whole-body vibration: Health effects & evaluation in the workplace (WBV101)

CROSH Course: September 18th - 22nd, 2023

Developed and Instructed by

Dr. Katie Goggins, PhD, CCPE

- Physics of Vibration
- Human Response to Whole-Body Vibration (WBV)
- Examples of WBV Exposure
- WBV Standards
- Assessment of WBV Risk
- WBV Data Analysis
- Technical Reporting Requirements
- Strategies of Controlling WBV

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In Closing…

We Need YOU!
Comments/Questions?

Occupational Health Clinics for Ontario Workers Inc.

Centres de santé des travailleurs (ses) de l'Ontario Inc.

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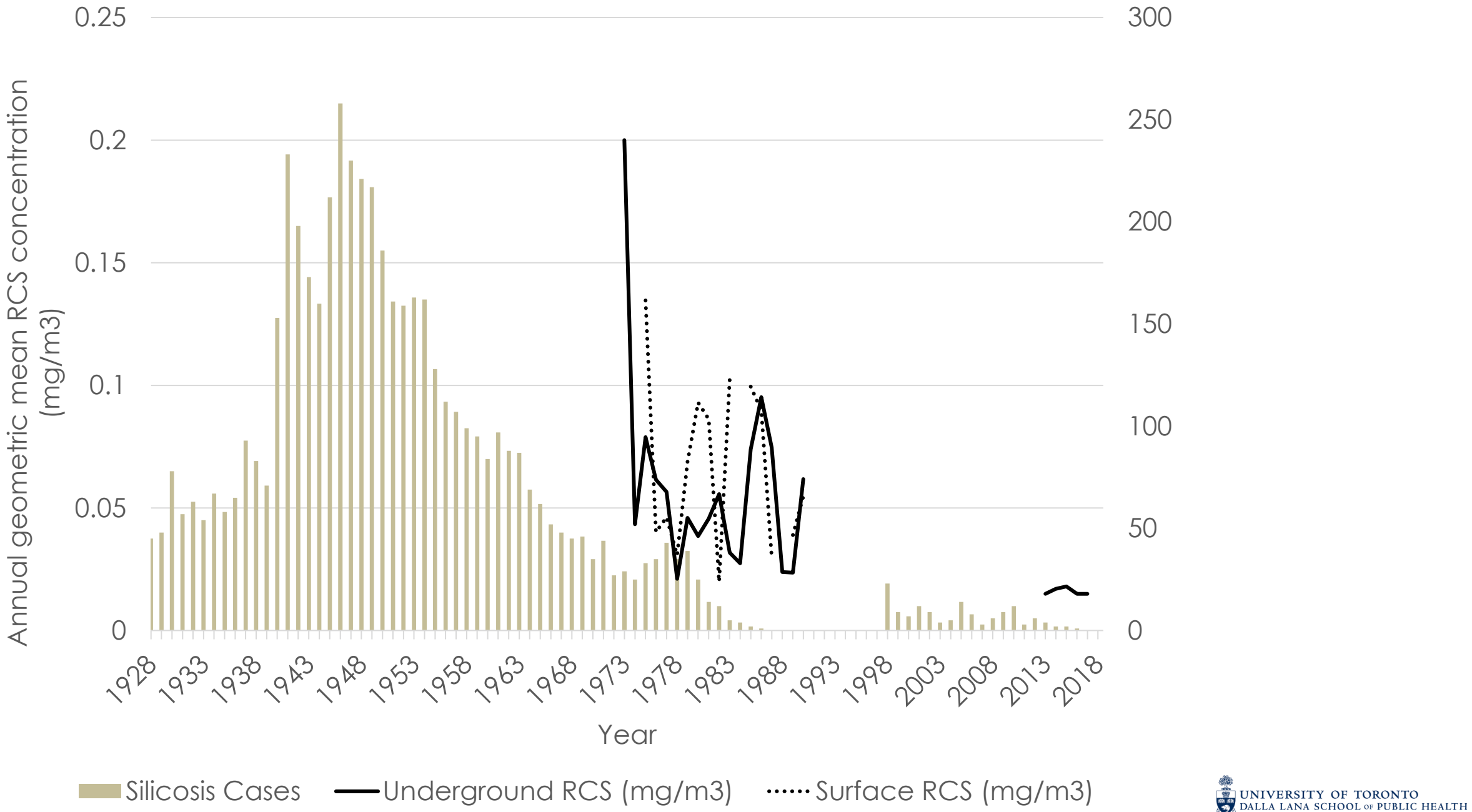
Extra Slides



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