



Occupational
Health Clinics
for Ontario
Workers Inc.

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



Annual Report 2016-2017

*Prevention Through
Intervention*



Our aim is to protect workers and their communities from occupational disease, injuries and illnesses. We strive to address occupational hazards, to promote the social, mental and physical well-being of workers and their families.

“All staff were compassionate, polite & respectful at all times. I was so appreciative for every way I was assisted and the service was above and beyond incredible.

This experience was life altering in the best way. Thank you so much ”

Client Testimonial

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Our Services

OHCOW has long been a valuable injury, illness and disease prevention resource for the workers and workplaces of Ontario. The first clinics, proposed by the Ontario Federation of Labour (OFL) and funded through the WSIB, were founded in Hamilton and Toronto in 1989. In the years that followed further clinics were established in Windsor, Sudbury, Sarnia, Thunder Bay and Ottawa. Each clinic is built on a unique service model where teams of doctors, nurses, occupational hygienists, and ergonomists provide comprehensive occupational health services to workplaces regarding work-related health problems. Our clinics work in partnership with a variety of stakeholders to identify occupational injuries and diseases.



Medical diagnostic service for workers who may have work-related health problems.



Inquiry service to answer workplace health and safety questions.



Research service to identify, investigate and report on illness, injury & disease trends.



Outreach and education service to make people aware of health and safety issues and promote prevention.



Group service providing educational and investigative support for joint health and safety committees and workplace parties.

Highlights

- Interdisciplinary team of occupational health professionals responding to needs of workers in all sectors
- Direct involvement in occupational injury and disease through clinical services
- Funding model allows services to be provided free of charge
- OHCOW is at the frontline in the detection of work-related health conditions
- Rooted in strong labour values: prevention interventions are participatory and include a primary role for workers and representatives in assessing and addressing workplace hazards.
- Experience working effectively with employers and prevention system partners

The Occupational Health Clinics for Ontario Workers Inc. (OHCOW) is a unique organization dedicated to protecting workers from occupational illness, injury and disease. It is a well-respected partner in Ontario's Occupational Health and Safety Prevention System, funded by the Workers Safety Insurance Board (WSIB) through the Ministry of Labour.

Our Mission

The mission of the Occupational Health Clinics for Ontario Workers Inc. (OHCOW) is: to protect workers and their communities from occupational disease, injuries and illnesses; to support their capacity to address occupational hazards; and to promote the social, mental and physical well-being of workers and their families.

Our Vision

The detection, prevention and elimination of occupational disease, injuries and illnesses, and the promotion of the highest degree of physical, mental and social well-being for all workers.

OHCOW fulfills its **Mission** and cultivates its **Vision** through the evidence-based identification of workplace factors detrimental to the health and well-being of workers; the distribution of excellent occupational health, hygiene, and ergonomic information to increase knowledge among workers, employers and the general public; and the provision of services and tools designed to produce changes to improve workplaces and the health of workers. This Annual Report provides a summary of OHCOW's achievements from April 1st 2016 to March 31st 2017.

Message from the President and Chair of the Board, David Chezzi

As Chair of the Board, I was excited to see 2016/ 2017 off to an energetic start with such a wide variety of offerings and developments. In May 2016 we saw the McIntyre Powder Project's first intake clinic in Timmins, Ontario. McIntyre Powder was an aluminum dust miners were instructed to inhale in order to prevent silicosis, this dust may prove to have caused significantly more harmful health effects to miners and their families through secondary inhalation. The McIntyre Powder Project is gathering data from past and present miners on the effects of McIntyre Powder as well as other toxins found in Ontario mines. This project has a registry of over 350 names, illustrating the destructive effects this powder has had on the human body and how further research is required to determine the full extent of how dangerous and impactful this substance is. Due to the overwhelming response from this intake clinic a second was set up in Sudbury, Ontario in October 2016.

In March 2017, OHCOW also held an information session in Peterborough for workers from the General Electric (GE) Plant. Up until the 1990s health and safety precautions and procedures were not in place mainly due to lack of research and know how. Along with OHCOW, the Office of the Worker Advisor (OWA), UNIFOR and the WSIB were there to offer information and support to plant employees. There was also presence from the Ministry of Labour (MOL) and the Minister for Labour Kevin Flynn.

We also saw the hiring of a new Executive Director for the Eastern Ontario region, Kimberly O'Connell. Kimberly is a Certified Industrial Hygienist (CIH), Registered Occupational Hygienist (ROH) and Canadian Registered Safety Professional (CRSP) with over 20 years of experience. She has certainly brought a wealth of innovative ideas and experience to OHCOW. Additionally, we welcomed Laura Lozanski as the inaugural Chair of the Eastern Ontario Clinic LAC and member on the Board.

Over the past year OHCOW has developed many workplace safety and injury prevention resources and tools with apps such as Ergo Tools and AirAssess both available on the OHCOW website. Ergo Tools aids the user in setting up their workstation correctly in order to prevent repetitive strain injuries. Air Assess is an app to help determine the air quality in the workplace, this can also be used in many other locations.

The above examples are just some of the amazing work OHCOW has done over the past year. I want to personally thank all the staff at OHCOW both at the Provincial Office and in our clinics for their especially challenging work and dedication to all those we serve in the province. I am proud to work alongside the OHCOW staff and look forward to what the future will bring.

I look forward to enhancing the Strategic Directions set in 2015 as we move along our 5 year goal. We will continue to work with our funder and WSIB to be able to secure the necessary funding required to move our Mission and Vision forward to the benefit of all our clients. I look forward to the many new and exciting initiatives in the coming year.

Message from the CEO, Michael Roche

2016-2017 was the second year of our 5 year strategic plan. The plan includes six strategic directions with a key one being the leadership of our Board and Local Advisory Committee (LAC) members. This leadership helps us to meet the needs of the most vulnerable workers in the province.

In 1988 the Ministry of Labour issued a memo outlining the clinics original mandate. We note that it is as relevant today as it was the day it was issued. It noted “the importance of providing expanded, high quality and dedicated occupational health services for workers has never been greater”. This is exemplified in our expansion of the Clinics to the Eastern region of the province. The expansion aligns with our strategic direction for growth in order to provide services to all of the regions of the province.

Greg Sorbara, the Minister at the time, noted the primary goal will be to contribute to the prevention of occupational disease by improving the accuracy of diagnosis. For the fiscal year 2016-2017 OHCOW participated in multiple intake clinics and information sessions where we continue to address the needs of workers by providing accurate diagnosis in order to determine if there is a causal relationship between work exposure and health effects. Two significant projects related to this are the McIntyre Powder Project and the Peterborough Project. We continue to work with our partners, including the MOL, to ensure adequate resources are available to meet the needs of these workers.

A further contribution to the prevention of occupational disease is highlighted in OHCOW’s role in leading the Occupational Disease Action Plan (ODAP) for the province. The main priorities of the plan are as follows: General Occupational Disease Awareness, Noise, Allergens & Irritants (both skin & lung), Diesel Exhaust Emissions and Emerging Issues. The Sorbara memo also noted the need for: “improvement of worker and employer knowledge of work hazards, occupational diseases and prevention measures.” We note the major theme of awareness in the ODAP which addresses this direction.

Another area OHCOW has made significant contributions is with respect to mental health. By contracting with the polling company EKOS Research Associates we were able to get both Ontario and Canadian cohort data to be used for comparative purposes by survey participants using the COPSOQ survey. We are also planning for the survey process to be automated for the fall of 2017.

Lastly, I want to acknowledge the dedication of our tremendous staff who provide the services to the workers of the province. This allows us to achieve our sixth strategic direction of providing service excellence. We help to facilitate this by having an engaged and expert workforce and by showing support for the well-being of our staff.

Occupational Disease Investigation

Intake Clinics

In 2016, OHCOW gathered occupational health information from former miners at the McIntyre Powder Project Intake Clinics held in Timmins and Sudbury, Ontario. Interviews were held to better understand historical exposures along with an assessment of health symptoms. Data collected included workplace exposures, lifestyle, and health information from exposed mine workers and their surviving families. This intake clinic was carried out in collaboration with the United Steelworkers and project founder, Janice Martell.

The primary purpose of the project was to investigate the health effects relating to miners being forced to breathe in finely ground aluminum (ultrafine) particles to prevent silicosis. The evidence that breathing in aluminum powder can lead to neurological disease is known. However this still has to be substantiated in the context of these former miners. Unfortunately tens of thousands of miners would have been exposed to McIntyre Powder aluminum dust during the 36 years that the program ran. Other work related exposures such as silica and diesel emissions (confirmed carcinogens) were also recorded. Family genetics or exposure to aluminum outside work might also help explain how work exposures did or did not help to cause a disease. Since aluminum can be stored in bones and then released years later, lifetime exposures must be explored.

It is now more than 35 years since McIntyre Powder was last used in Ontario mines. Despite advances in laboratory testing, further research in this area is difficult because the miners with the highest levels of aluminum dust exposure have already passed away. The outcome from this program will also have widespread implications. For example the current occupational exposure limit for aluminum is set relatively high, and findings from this research may question whether the American Conference of Governmental Industrial Hygienists (ACGIH) and Ministry of Labour's Occupational Exposure Limit for aluminum respirable dust is suitably protective.

Collaboration with Australian researchers may also trigger action in Australia to better understand the extent of the problem – which clearly is an international issue.



Michael Roche, JP Mrochek, Sylvia Boyce, Alec Farquhar, Dave Wilken



Janice Martell, Founder of the McIntyre Powder Project



OHCOW Hygienist John Oudyk conducting an occupational history review on a worker

McIntyre Powder

McIntyre Powder was an aluminum dust miners were instructed to inhale prior to entering the mines. The theory was this dust would prevent silicosis. This dust most likely caused significant more harmful health effects to miners resulting in neurodegenerative disease such as Amyotrophic Lateral Sclerosis (also known as ALS, Lou Gehrig's disease, or motor neuron disease) is a disease that gradually paralyzes people. This project has a registry of over 350 names illustrating the destructive effects this powder has had on the human body and how further research is required to determine the full extent of how dangerous and impactful breathing in aluminum fine powder has been..

The McIntyre Powder Project is a voluntary registry that collects and documents data from past and present miners. The data gathered is on the health effects of not just McIntyre Powder but also other toxins found in Ontario mines. The goal of this registry is to establish further research into the long-term health impacts of aluminum dust exposure. Ultimately, this Project hopes to seek legislative changes to improve workplace safety and seek compensation for all workers who suffer health issues related to occupational disease or injury.

The inspiration behind the McIntyre Powder Project was miner Jim Hobbs. Jim was just 19 when he began working as an underground miner.

In the late 1970s, Jim was one of 10,000 miners employed at the Elliot Lake uranium mine. In order to be permitted access to the mine, workers were locked in an air tight room and ordered to inhale an airborne aluminum/aluminum oxide dust known as McIntyre Powder. This was under an industrial prophylaxis program that was theorized to prevent silicosis. Jim later developed idiopathic Parkinson's, despite having no family history of neurological disorders.

In April 2015, Jim's daughter, Janice Martell, founded the McIntyre Powder Project to document the health issues in aluminum dust-exposed mine workers, with the goal of stimulating research and changing the way compensation cases are handled for occupational disease.

Sadly, on May 24, 2017, Jim Hobbs died after more than 16 years of struggling with Parkinson's. Along with Janice, OHCOW and the United Steel Workers continue the fight for answers in honour of her father's life and the miners of the McIntyre Powder experiment.

This project and subsequent research from this project is getting international attention and support from the United Kingdom, - Keele University <https://www.keele.ac.uk/> and Australia, - Flinders University <https://www.flinders.edu.au/> and here in Canada grateful assistance is being provided by Laurentian University - <https://laurentian.ca/>, McMaster University <http://www.mcmaster.ca/> and University of British Columbia <https://www.ubc.ca/>

A recent international meeting was held in Vancouver and organized through Keele University in March 2017 which has been running all over the world since 1995 (<https://www.keele.ac.uk/aluminium/keele-meetings/>) has provided strong evidence on the toxicity of aluminum. Information shared at this meeting, coupled with ongoing research, will provide qualification about whether or not breathing in aluminum (McIntyre Powder) can lead to neurological disease.

The Peterborough Project – Shining a Light on the Workers’ Stories

In 2004, OHCOW was invited to partner with the then Canadian Auto Workers (CAW) union to put on an Occupational Disease Intake Clinic in Peterborough, ON. The event was held for General Electric (GE) workers and retirees as well as for family members of GE workers who had already died. Workers from the manufacturing companies of Ventra Plastics and Pan-Oston Ltd. also attended.

Workers and retirees were concerned about their own health and that of their co-workers. They talked about the conditions in which they worked and the substances to which they were exposed on a daily basis, often without ventilation or protective equipment. Workers also talked about the deaths of many of their colleagues and wondered if they were work-related.

Seven hundred and fifty people registered at the event; about 650 of these were from GE.

Over more than a decade since, OHCOW medical and hygiene staff worked extensively on the organization of the files as a whole, identification of common diseases and a summary of exposures, especially in the Armature and Wire & Cable Departments as well as painstaking individual case report development.

Common diagnoses included:

- Asbestosis & asbestos-related disease
- Chronic Obstructive Pulmonary Disease (COPD)
- Work-related asthma
- Ischemic heart disease
- Noise-induced hearing loss
- Cancers: Lung; stomach; brain; kidney; bladder; bowel; colon; prostate; breast; liver; pancreatic; throat; laryngeal; pharyngeal; esophageal; Non-Hodgkin’s lymphoma; leukemia; skin

OHCOW summary by the end of December 2016:

- Medically assessed 460 workers
- Reports supporting 265 compensation claims
- Claims accepted by the Workplace Safety and Insurance Board (WSIB) include:
 - Noise-Induced hearing loss, Asbestos-related disease, COPD, Various cancers, including lung, kidney, stomach, rectal, colon, laryngeal

Many of the claims were denied due to a lack of exposure or disease link.

Media Spark

In December 2016, an article published in the Toronto Star served to shine a renewed light on the experiences of GE workers, highlighting the working conditions at the GE plant and subsequent health effects suffered by workers. This article, entitled Lethal Legacy, and written by Sara Mojtehedzadeh is available at: <http://projects.thestar.com/lethal-legacy>.

GE Information Session

In March 2017, past and present Peterborough General Electric workers and their families were invited to a three day information session hosted by the Ministry of Labour, providing an opportunity for workers and their families to learn more about the WSIB claims system, the status of any claims and the steps to take in a claim process.

OHCOW, along with UNIFOR, GE Retirees, the Office of the Worker Advisor, the Occupational and Environmental Health Coalition of Peterborough and the WSIB were present to provide workers with as much information as possible.

Over 100 clients were seen and registered with OHCOW during this event.

Many of the workers were employed at GE for more than 30 years and have been diagnosed with various forms of cancer and respiratory issues. Through medical examinations and detailed work history-taking, plus related research, OHCOW continues to interpret and write reports on whether it is probable that workers developed their illnesses and injuries through harmful exposures in the workplace.

Advisory Committee Report on General Electric Production Facility 1945 - 2000

Retrospective exposure profiles of the facilities, process reviews and cataloging of documents by researchers and workers was in its draft stages during the GE information session. It was subsequently released in May 2017.

http://www.unifor.org/sites/default/files/documents/document/ge_advisory_cmtt_report_may_15_final_for_web.pdf

What is an Occupational Disease Intake Clinic?

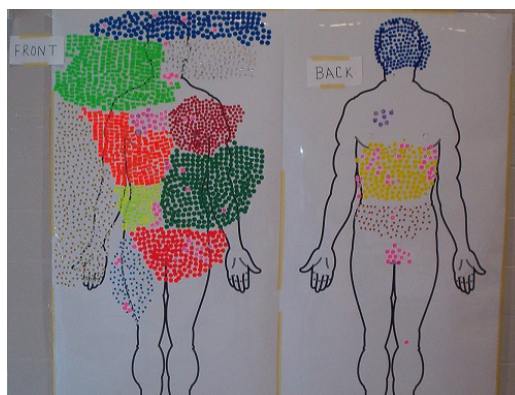
This is an event held when a group of workers, sharing the same employer or workplace or the same workplace exposures, has reason to believe they have similar and related health concerns. Intake clinics are multi-purposed. The goal of the event is to capture information about the workplace and its processes; the working conditions; the workers' exposures to various materials, substances, chemicals; and to record the work and health histories of the workers. It is also an opportunity for workers to learn that others have the same kinds of health issues and that they are not alone. As a result of participating in an occupational disease intake clinic a worker may decide to initiate a compensation claim.

Body Mapping

The event can include the process known as body mapping. A Body Map is a tool for collectively gathering and displaying data whereby health problems and patterns are indicated visually (with stickers, symbols, and/or words). Body mapping is used to chart injuries, illnesses & diseases using life-sized body posters.



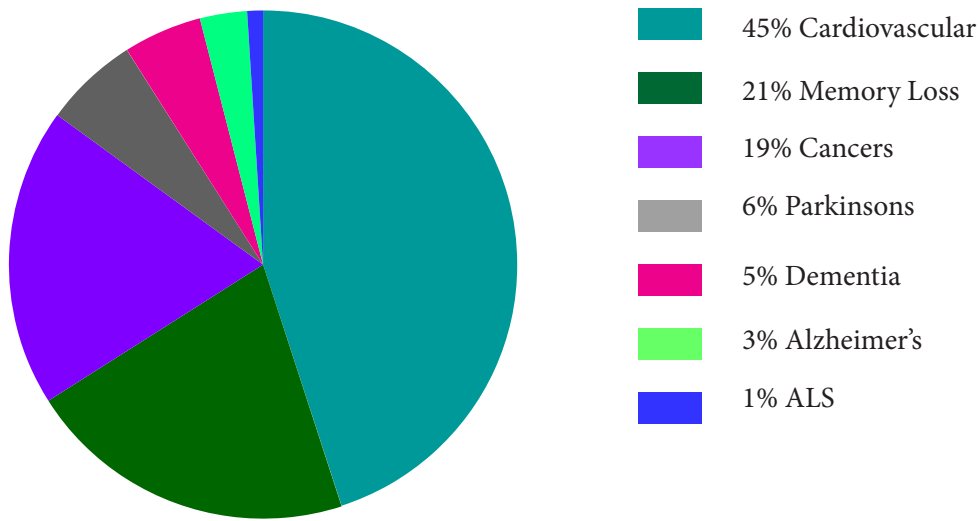
Michael Roche, Dave Wilken, Minister Kevin Flynn, Mary Coker, Leslie Piekarz and Maria Vieira



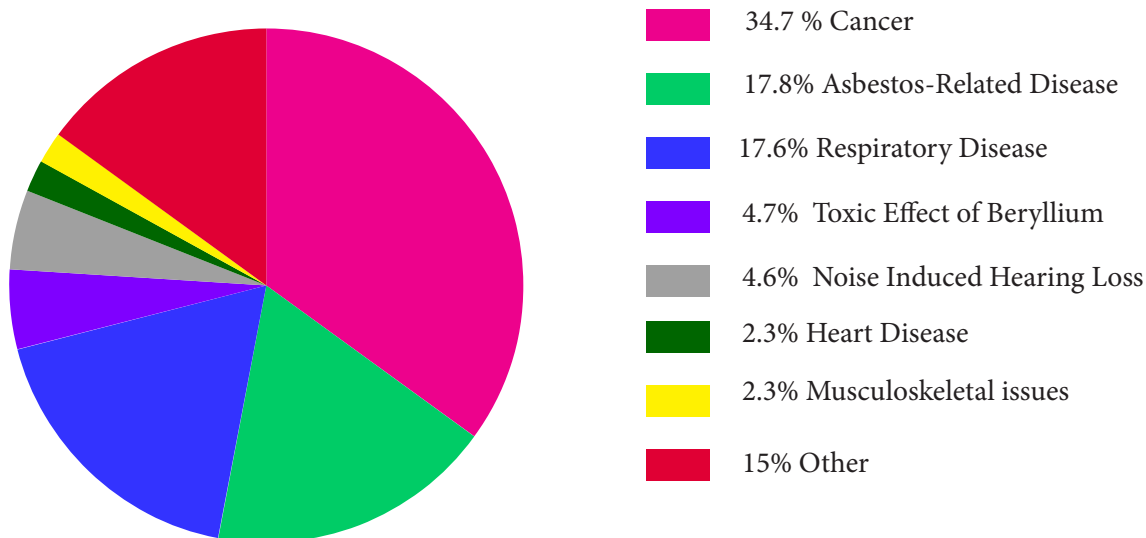
Body Mapping Image from Intake Clinic Identifying Injuries or Health Affects of Workers

Occ Disease Projects - Recorded Illnesses

McIntyre Powder Project



GE Peterborough Project



1305
Clinical Cases

771
Inquiries answered

278
Educational Sessions

49
Staff Members

19
Board Members

7
Clinics

Mental Health is an Occupational Health Issue!

OHCOW staff have long been advocates for the recognition of workplace mental health as an Occupational Health issue, particularly in the context of causative workplace stressors. In 2016/17 we continued our leadership of the Prevention System on this important subject by investing in tools and resources to assist workplaces in the recognition, evaluation and control of psychosocial hazards.

OHCOW has been the main Canadian user of the well-regarded Copenhagen Psychosocial Questionnaire (COPSOQ) international survey tool as part of its Mental Injury Toolkit (MIT) since 2010. But until we retained EKOS Research Associates to conduct the survey of 4000+ workers across Canada in early 2016, all comparisons and conclusions were based on Danish data (which we have now learned is quite different than that of Canadians). The Canadian cohort results were validated and normalized with colleagues at the Institute of Work and Health.

The survey used by OHCOW (and EKOS), expands on the COPSOQ and includes questions on: 14 psychosocial risk factors, 6 offensive behaviours, work-life imbalance, job satisfaction; symptoms and self-rated general health; H&S conditions; demographics; opinions of working conditions (security, resources, attitudes, tolerance of offensive behaviours) and a global rating of psychological H&S climate & culture. It also includes questions proposed for the new version of the COPSOQ: role conflict (& task legitimacy); social support from colleagues; sense of community at work; insecurity over employment or working conditions; and need for “double presence” at work and home.

OHCOW has now evaluated and assisted 100+ workplaces, and has almost 14,000 survey responses in the data base. Recognizing the value of the Toolkit, and particularly the survey data, in helping workplaces across the country identify and solve mental health hazards, we committed in the winter of 2017 to build a self-serve version of the MIT survey with our partners at the Canadian Centre for Occupational Health and Safety (CCOHS). Entitled StressAssess, it will include an implementation “wizard” to take a workplace committee step by step through the process of setting up, administering, learning from, driving change and re-assessing using the survey and its results.

Look for it early in the Fall of 2017.

economic sector	undesired sexual attention	threats of violence	physical violence	bullying
Agriculture, Forestry, Fishing, Hunting	8%	8%	6%	21%
Mining	12%	17%	11%	46%
Utilities	9%	14%	9%	25%
Construction	10%	12%	6%	27%
Manufacturing	7%	11%	6%	29%
Wholesale Trade	15%	14%	13%	32%
Transportation and Warehousing	11%	20%	7%	31%
Information, Information Technology	16%	14%	8%	27%
Finance and Insurance, Real Estate Rental and Leasing	9%	6%	4%	21%
Administrative Support & Waste Mgmt/Remed Services	19%	26%	11%	30%
Educational Services	8%	17%	15%	33%
Health Care and Social Assistance	16%	28%	22%	36%
Arts, Entertainment and Recreation	15%	15%	6%	29%
Accommodation and Food Services	20%	10%	4%	35%
Public Administration	12%	18%	11%	35%
Retail Trade	21%	16%	9%	31%
Professional, Scientific and Technical Services	8%	6%	2%	26%
Other Services (Not including Public Administration)	12%	15%	5%	32%
Canada	10.2%	15.7%	10.1%	31.4%
Denmark	2.9%	7.8%	3.9%	8.3%

Occupational Disease Action Plan

According to WSIB reports of allowed claims, fatalities from occupational disease have outnumbered traumatic fatalities in each of the past ten years, increasing each year since 2012. In addition, it is well recognized that hundreds more work-related deaths and illnesses go unrecognized, unreported and/or are denied for lack of an evidentiary link.

After years of reflection and consultation on ways to tackle such a complex issue, the Ministry of Labour decided to begin the process of developing an Occupational Disease Action Plan. OHCOW, as the Prevention System's Occupational Health specialists, was thrilled to be asked to lead it.

Development began with a Research and Data workshop studying a variety of disease information, concluding the plan should:

- Focus on exposures that lead to diseases vs. the diseases alone;
- Ensure new and emerging risks are included
- Strengthen occupational disease surveillance systems to inform future prevention efforts

A Reference Group was soon established, led by OHCOW's South Central Executive Director, Valerie Wolfe, and supported and coordinated by Steven Grossman from the MOL Prevention Division. A varied membership, including system & external partners, allowed for stimulating discussion and consensus building.

Members include:

- Occupational Health Clinics for Ontario Workers Inc.
- Workers Health and Safety Centre (WHSC)
- Infrastructure Health and Safety Association (IHSA)
- Workplace Safety North (WSN)
- Workplace Safety and Prevention Services (WSPS)
- Public Services Health and Safety Association (PSHSA)
- Workplace Safety and Insurance Board (WSIB)
- Institute for Work and Health (IWH)
- Centre for Research Expertise in Occupational Disease (CREOD)
- Occupational Cancer Research Centre (OCRC)
- Public Health Ontario
- Ministry of Health and Long-Term Care
- The Lung Association (formally the Ontario Lung Association)
- MOL, Operations Division (Occupational Health and Safety Branch, OHSB)
- MOL, Policy Division (Health and Safety Policy Branch, HSPB)
- MOL, Communications and Marketing Division (CMD)
- MOL, Prevention Division

The first step in building the plan involved ranking a list of the 14 most prevalent and significant occupational disease exposures, based on need (prevalence & severity) and impact (including opportunity):

ODAP 2016-2017 Priorities:

- General Occupational Disease Awareness
- Noise
- Allergens & Irritants (both skin & lung)
- Diesel Exhaust Emissions
- Emerging Issues

The plan was then built into 28 initiatives spread among 8 different approaches: Intelligence & Decision Support; Research & Data Management; Awareness; Advisory & Support Services; Education and Training; Programs; Enforcement; and Legislation

Chief among these, was to develop a Communication and Marketing Plan to raise awareness and prevention of the 3 priority exposures plus OD in general.

In early 2017, the Reference Group transitioned into an Implementation Team which set principles; strategize, plan & guide; and particularly, network to expand reach & impact.

Five working groups were created (Emerging Issues; Intelligence & Data; Noise; Diesel Engine Exhaust; Allergens & Irritants) who are already prioritizing and activating relevant ODAP actions including identifying deliverables and quantifiable measures of success.

Given that all the issues, particularly the priority exposures, have a different state of awareness, activity and legal framework, each group is proceeding at its own pace.

In the final quarter of 2016/2017, the Noise Working Group accelerated their efforts, bringing in communications expertise to develop common messaging (Avoid Noise) and branding for Ontario's inaugural celebration of International Noise Awareness Day. In order to get people to "Do Something about Noise", OHCOW staff assessed a number of noise measurement apps and created a webpage for sound level uploading (or "crowdsourcing") to better understand real, current workplace exposures – and thus, to inform and target future prevention initiatives.

The ODAP was a huge "occ-omplishment" for OHCOW and Ontario's Occupational Health and Safety System in 2016/2017. Its work will likely never be complete, but these critical first steps, meant to be both aspirational and achievable, will truly lead the way to making Ontario a healthier place to work.

Vulnerable Worker Migrant Farm Worker Program (MFWP)

The Migrant Farm Worker Program, running at OHCOW for more than 10 years now, continues to grow in scope and scale. The goal of the program is to bring services to, and better understand the occupational health needs of this uniquely marginalized worker population, many of whom work seasonally for years in Ontario, but have limited access to health care and other government services.

The core of the program remains a series of mobile occupational health clinics staffed by medical professionals (and translators), which allow us to help individuals while identifying key issues to effectively direct our broader prevention efforts. We now work in partnership with several local Community Health Centres who are increasingly striving to support and assist this worker population. OHCOW's contribution to these expanded efforts includes providing advice, resources and consultation to ensure the primary health care and other services offered are relevant to the MFW circumstances and work experience.



Michelle Tew, RN. Conducting a Medical Assessment of a Worker



Dr. Donald Cole MD

In recent years OHCOW has successfully expanded our delivery of programming on farms. In 2016/17 we connected to several agricultural producers who benefitted from prevention-based workshops on Eye Health, Heat Stress & Sun Safety, Lifting and Back Care, and Basic OHS awareness, plus several other services. Facilitation of dialogue and problem solving among the workers, supervisors and employers builds on MFWP education and discussion, and works for everyone! We also offered workshops and provided a variety of information resources to workers at several Health Fairs across the province.

The historic and current success of all aspects of the MFWP result from extensive collaboration with a wide variety of community partners. In 2016/17 we continued to take an active role in the the MOL Agriculture/Horticulture Action Plan roll-out in partnership with Workplace Safety and Prevention Services and the rest of the implementation team. We also worked with the Ontario Pesticide Education Program on facilitating delivery of their sprayer and assistant sprayer training in Spanish.

In November 2016, Community Outreach and Program Coordinator, Eduardo Huesca and Occupational Health Nurse, Michelle Tew, participated in the Mid-west Conference on Migrant Farm Worker Health, delivering a well-attended session on the incidence and prevention of eye health issues. Networking with fellow presenters and attendees greatly enriches OHCOW's program, particularly in the form of Spanish and bi-lingual resources.

The big news in 2016/17 was the MFWP's receipt of an MOL innovation grant to develop and pilot a new workshop (with materials) on Pesticide Safety for Farm Workers. The initiative was sparked because program staff are regularly approached by workers with concerns about pesticide exposure and drift. The majority of these workers also noted that they had received little to no information or instruction on the related hazards and associated precautions. Generally, existing pesticide safety materials focus on sprayers. This new workshop is targeted for all workers to gain a general understanding of hazards, exposure prevention, emergency response, as well as basic health and safety awareness. Having everyone at the workplace educated on pesticide hazards and safety measures is a best practice, and more effectively supports pesticide safety on the farm. While manual and workshop development occurred this year, the project will continue through 17/18 with delivery on farms and at community events.

Another new initiative grew out of a partnership with settlement agency Immigrant Services Guelph-Wellington. OHCOW's MFWP staff developed and piloted an introductory workshop on the Occupational Health and Safety Act (OHSA) for Syrian Refugees, reviewing their rights and responsibilities at the workplace, and what to expect from Ontario employers and supervisors. A total of 45 refugees have participated thus far, and have found it very useful. As these refugees are preparing to enter the local labour market, providing them a foundation in understanding the OHSA will foster engagement with health and safety in their future workplaces, and knowledge of how, when and where to communicate should they require information, support or to raise a concern.

Altogether, a great year for the MFWP.



Justice for Injured Workers Bike Ride

May 24 – June 1st 2016

The second annual Justice for Injured Workers Bike Ride, led by Richard Hudon, Peter Page and Allen Jones, hit the road from Windsor on May 24th. The Windsor OHCOW Clinic joined labour activists, injured workers, and local politicians to give the “Justice for Injured Workers” riders an early morning send-off at the Canadian Labour Congress’ injured workers monument, located west of the Peace Fountain at Coventry Gardens in Windsor. Windsor Clinic’s LAC member Nicole Simpson organized the Windsor leg of the event.

The riders rode over 200 kilometers on the first day arriving at the Sarnia OHCOW clinic later that evening where all the participants were welcomed by the greater community to enjoy a BBQ. The event was part of a 600 km bike ride that visited 10 communities in total, including Toronto on June 1 where the cyclists took part in a rally at Queen’s Park.



John Millholland, Peter Page, Sandra Kinart, Mark Parent, Andrew Bolter



From left to right – Richard Hudon, MPP Lisa Grestky, Tracie Edward (LAC), Peter Page, Brian Masse MP, Rolly Marentette (LAC), Percy Hatfield MPP, Karl Crevar ONIWG, Allen Jones, Nicole Simpson (LAC).

Toronto OHCOV Clinic Local Advisory Committee Forum

On September 24, 2016, the Toronto Clinic Local Advisory Committee held a Forum on Workplace Mental Health, generously hosted by the Ontario Secondary School Teachers Federation (OSSTF). The goal of the forum was to raise awareness about mental health and mental stress in the workplace.

Topics covered during the forum included:

Mental Health – the Stigma

Mental Stress in the Workplace

Current Legislation & Standards

Workplace Safety & Insurance Board Mental Health Case Studies

Case Studies on the Implementation of the CSA Standard on Psychological Health and Safety in the Workplace

The roster of speakers included Ed Arvelin and Edie Strachan from OPSEU; Glenn French from the Canadian Initiative on Workplace Violence; John Bartolomeo from the Workers' Health and Safety Legal Clinic and Maryth Yachnin from the Industrial Accident Victims Group of Ontario. The CSA Standard on Psychological Health and Safety in the Workplace was discussed by Kathy Jurgens from the University Health Network and by Sari Sairanen, the National Health and Safety Director of UNIFOR.

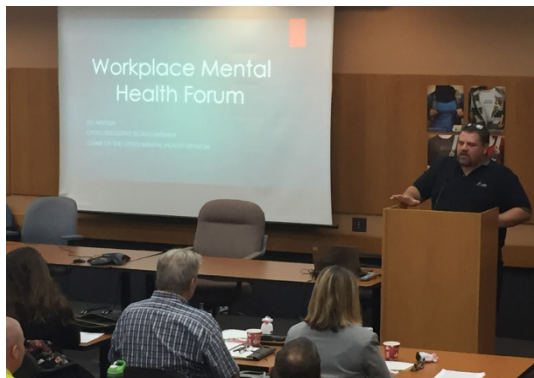
This Forum was an excellent opportunity for the dozens of advocates and the worker representatives present to hear from specialists in the field.



David Chezzi, President & Chair of the OHCOV



Sari Sairanen, Director of Health, Safety and Environment, UNIFOR



Ed Arvelin is a member of the OPSEU Executive Board and the Chair of OPSEU's Mental Health Executive Committee.

Now in its 2nd year, this important annual Symposium on Occupational Health and Disease Prevention, grew in stature, attendance and scope in 2016. In the interest of sparking awareness, and particularly engagement, a number of research projects were shared with the diverse audience of MOL and Prevention system staff, academics, safety professionals, advocates and workers. Key among these were two projects involving OHCOW directly: Completing the Picture, in which we worked with the Occupational Cancer Research Centre and several Community Health Centres to raise awareness of occupational health issues with primary care staff, and have them include screening questions in their intake process; and the McIntyre Powder Project, which is covered in more detail on pages 8 & 9.

The audience also benefited from a Sneak Peek at the draft Occupational Disease Action Plan, including an introduction to its 4 priority exposure targets. Plus they had the opportunity to see preliminary findings from a trans-national project sifting the literature for evidence-based Occupational Disease Prevention Strategies.

Several new Tools and Resources were also highlighted in the form of brief “Occ-omplishments”.

Two developed by OHCOW staff: ErgoTools (6 online resources assembled to assess and aid decision making about work organization, layout and equipment); and AirAssess (a smart-phone app created and presented in partnership with CCOHS to help identify and solve Indoor Air Quality problems). Plus an introduction to the suite of tools and resources newly launched at Sun Safety at Work Canada.

The day was bookended by important Occupational Disease concepts: Epidemiology and Causation at the opening, and wrapped up looking at the big picture of Environmental, Public & Occupational Health.

A great day of learning, enhanced understanding, partnership and engagement to drive prevention going forward.

Click here to watch the Occ-tober presentations

[Dr. Kevin Hedges presents on the effects of diesel exhaust](#)

[Dr. Mike Sonne presenting on ErgoTools](#)

[Dave Wilken presenting on the McIntyre Powder Project](#)

[John Oudyk presenting on Noise](#)

[Val Wolfe presenting on the Occupational Disease Action Plan](#)

[John Oudyk and Sue Freeman - AirAssess](#)

The year of 2017 marked the 18th anniversary of the first International RSI Day event. Repetitive Strain Injury (RSI) refers to a category of injuries involving damage to muscles, tendons and nerves (also known as musculoskeletal disorders) and account for 42% of all lost time claims and 50% of all lost time days. The program this year highlighted work by several OHCOW staff to raise awareness to these issues and a call to action for participants to implement something learned from the day in their respective workplaces.

Program Highlights:

- ErgoTools: Desktop and Mobile Applications for MSD Prevention
- The Implications of Sit-Stand Workstations
- When Technology Hurts: Laptops, Tablets and Smartphones and Your Body And an added “PLUS”
- Noise: Health Effects and Methods to Reduce Exposure-What Can We Do!

What's that? Noise you say? That's not an RSI? But it is an RSI _{PLUS}. Adding the “PLUS” to the name of the event enabled OHCOW to expand it's offerings. Noise could be described as a repetitive strain illness. This coupled with OHCOW's work is leading out the Occupation Disease Action Plan drove us to add this important issue to our day. A Sneak Peak into the Prevention System's “Avoid Noise” campaign and an OHCOW Noise Web App; encouraging participant to Do Something About Noise - crowd sourcing sound level data using smartphones was presented.

Videos and Presentations from the Event can be found [Here](#)

The event continues to grow with over 526 attendees from all over Canada and Internationally, either in person or virtually via livestream.



Melissa Statham & Trevor Schell



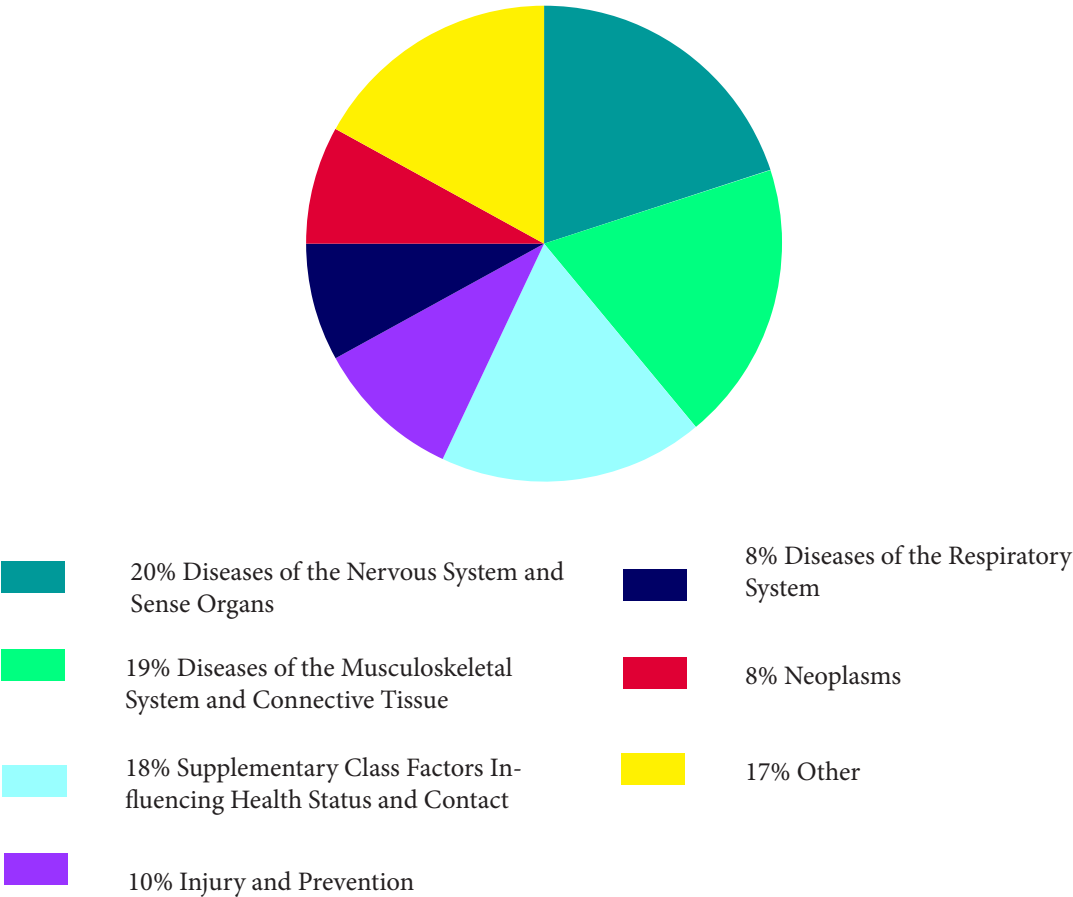
Dr. Mike Sonne and Dr. Kevin Hedges



Chelsie Baizana

Clinical Cases: Diagnoses at a Glance

Greater than 60% of OHCOW resources are used for clinical cases. An important consideration for prevention is being able to identify how exposures affect the health of workers. Identifying these causal relationships allows for the ability to engage in prevention activities. In every instance where workers present at the clinics, the interdisciplinary team at the clinics assess if the exposures are causing the health effect and makes suggestions for prevention interventions. This next section presents some examples of clinical cases:



Summary

The case for an electrician (now deceased) who worked at Algoma Steel from 1963 to 1992 initially had his claim denied. It was stated in 2009 “an occupational cause of pancreatic cancer could not be identified in the workers case”.

It should be noted that in the workers case and review by OHCOW “the role of polychlorinated biphenyl and chlorinated hydrocarbons had been overlooked in the analysis of the worker’s case” (Dr. Reinhartz OHCOW January 4, 2010).

This reinforces the importance of capturing and considering “all exposures” in the retrospective exposure assessment.

Included in an OHCOW recent Medical Report (Dr. Ron House OHCOW February 16, 2017) a thorough and up to date literature search was carried out on agents that the electrician was likely to be exposed to.

“The worker was diagnosed to have pancreatic cancer in 2006. He died on October 28, 2006 and the death certificate stated that the cause of death was metastatic carcinoma of the pancreas. The issue before the Panel is whether this malignancy may have been caused by his workplace exposures”.

“The Tribunal Panel stated that it is not possible to determine the amount or degree of these exposures based on the available evidence. The Panel also indicated that it is likely that [the worker] used the product Chroma Tap (trichloroethylene) on a frequent basis when drilling”. As noted this had been overlooked in the initial assessment.

From the recent review carried out by Dr. House - refer to the updated information provided as monographs by the International Agency for Research on Cancer (IARC).

“There is sufficient evidence in humans for the carcinogenicity of trichloroethylene. Trichloroethylene causes cancer of the kidney. A positive association has been observed between exposure to trichloroethylene and non-Hodgkin lymphoma and liver cancer”.

WSIB Decision

Dr. House (OHCOW) noted that the weight of evidence, including the medical evidence, indicates that the recent scientific and epidemiological evidence indicates that exposures to chlorinated hydrocarbons and poly-cyclic aromatic hydrocarbons (PAH) to which the worker would have been exposed, and in particular exposure to chlorinated hydrocarbons (Trichloroethylene (TCE)), are likely causal factors in the development of pancreatic cancer.

Carrying out a thorough up to date literature review and review of the epidemiological evidence is paramount. In light of the absence of quantitative exposure records, albeit knowing that the workers significant and likely exposure included chlorinated hydrocarbon (TCE) has resulted in this appeal being allowed.

Round Back(Postural Kyphosis) in a Mechanic

Postural kyphosis is sometimes called “round back” and is the result of poor posture over prolonged periods of time. Postural kyphosis can have a range of symptoms, from minor changes in the shape of your back, to severe deformity, nerve problems, and chronic pain.

Work related injuries to the thoracic spine are relatively rare in the absence of physical trauma to the area. This section of the spine is mostly immobile and functions solely for an attachment of the ribs in order to protect vital organs.

Patient History

57 year old Industrial Mechanic fixing a leaky hydro filter located deep within the vehicle, after three attempts to remove the filter felt a sharp pain around his mid back (thoracic spine).

Went to hospital and was diagnosed with a back sprain and was told to work light duty for 4-6 weeks

After four months was assessed by a medical evaluator; was diagnosed with osteoarthritis of the neck and postural kyphosis of the thoracic spine.

Client continues to suffer with pain and stopped working two years after the accident.

Diagnosis

Thoracic Postural Kyphosis

OHCOW Report

A review of the file, current literature, interview with the client and a physical demands analysis (PDA) on file revealed:

- 30% of the workday was spent in prolonged awkward postures of the upper back (3 or more hours a day).
- Due to space limitations (design of equipment), it is almost impossible for the mechanic to use proper postural control and body positioning for most of the work they perform.
- Prolonged awkward postures of the spine increase asymmetrical disc compression and passive stretch on the posterior spinal ligaments and disc fibers which can contribute to deconditioning of the torso support musculature.
- Muscles of the back support the spine and keep it erect. Prolonged awkward postures can cause lengthening (stretching) of the ligaments and muscles of the back resulting in them becoming slack and fatigued. When they become stretched they lose their ability to support the spine allowing for spinal changes.
- This condition can develop from muscle weakness (fatigue) due to prolonged awkward postures.
- Prolonged stooped postures increase the forces applied to various spinal tissues to a level capable of causing pathology and degeneration

Conclusion

Client was subjected to prolonged, sustained awkward postures of his upper back during his career as a mechanic which has been documented as having a relationship with the development of postural kyphosis. Based on his duties, relevant literature and the PDA on file it seems reasonable to accept that his work duties materially contributed to the development of his postural kyphosis.

WSIB Decision

Status is currently in review and awaiting a WSIB Decision.

WSIB Allowed Entitlement

Summary of case

A 59-year-old retired letter carrier had worked for Canada Post for a total of 37 years. The worker had previous work experience on a farm and briefly in a food Deli as a teenager. For the first 25 years at Canada Post the worker was assigned a foot route, which involved walking from building to building delivering mail. For the final 10 years of employment, the worker was assigned a vehicle route.

The worker noted that, for the latter 15 years of employment, the employer provided sunscreen and recommended the use of a sun hat as personal protective equipment. The worker heeded the advice donning a baseball cap while at work. In the spring of 2015 the worker was diagnosed with skin cancer (squamous cell carcinoma, grade-G2 moderately differentiated).

WSIB Decision

“In making my decision, I considered the statements made by you and your employer along with the reports submitted by your attending physicians and the opinion expressed by the external medical specialist. On the basis of the information that I reviewed, I find that it is more likely than not that your outdoor sun exposure over your lengthy work period with Canada Post contributed significantly to the development of your skin cancer.”

Back Injury in Heating Industry Worker

- Male who has been working as a Sheet Metal Worker for over 36 years.
- Fabricates and installs ductwork for air handling systems.
- The process of sheet metal work involves shearing, forming, fabricating, welding, soldering, and assembling a host of items made from galvanized iron, steel, copper, nickel alloy, stainless steel, aluminum and sometimes plastic.
- Interview with client determined that the worker spends approximately 3 hours per pay hammering, 3 hours per day using electric tools, and 3 hours per day using tin snips in combination with heavy lifting.
- Worker typically uses scaffolds and works overhead for the majority of his 9 hour shift.

Diagnosis

- Multilevel degenerative changes and severe spinal canal stenosis at L4-L5.

Risk Factors

- Work-related exposures identified include:
 - Repetition
 - Awkward postures
 - Vibration
 - Force
- Client constantly works with 4x4 or 4x5 sheets, weighing 20 lbs each (assuming a metal gauge of 22).
- Client performs heavy lifting for 7-9 hours of his shift - items range from 10lbs to 100lbs and lifts are not always available for assistance.

Literature:

- Spinal loading contributes to lumbar disc disorders and other low back disorders
- Sheet metal workers are often susceptible to stress on the back as a result of frequent manual material handling.
- Often, spinal stenosis occurs without warning - symptoms don't always manifest immediately but once the narrowing creates pressure on the spinal cord, cauda equina or nerve roots, there is typically slow onset and progression of symptoms.

Biomechanical Program Input

- Michigan 3-DSSPP was used to estimate the loading on client's spine when lifting.
- When lifting an 80lb weight, the low back compression ranges from 2532N to 4061N.
- When lifting a 100lb weight, the low back compression ranges from 3113N to 4949N
- According to NIOSH lifting criteria, when all variables are taken into consideration, if the compressive force on the back (L4/L5) is greater than 3400 Newtons (N), the work task should be evaluated and changed.
- When the 3400N limit is exceeded throughout the workday, there is an increased probability of an MSD.

Ergonomist Impression

In reviewing scientific literature, various studies attributed LPB to construction industries as a result of spinal loading. While an acute 'event' may often be described as the cause of LBP, it is important to be aware that the majority of back injuries do not occur due to a single event, but due to repeated or sustained positions and activities over many hours, day after day. The client has been working as a Sheet Metal Worker, where he was exposed to significant amounts of force, repetition, and awkward postures. He mainly worked on scaffolds and ladders, which affected his balance and centre of gravity, aggravating the impact of the above mentioned risk factors. From this information, I can deduce that his employment as a Sheet Metal Worker was the probable cause of his diagnosis of spinal stenosis.

Physician Impression

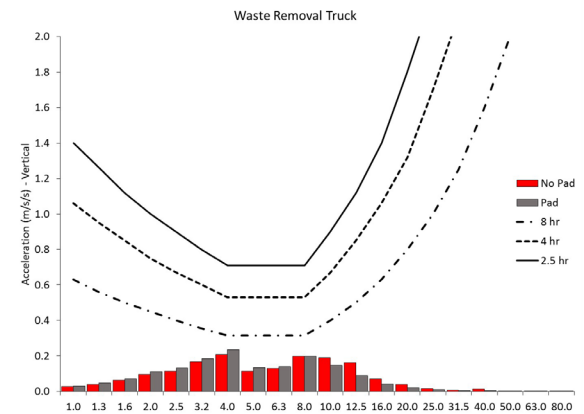
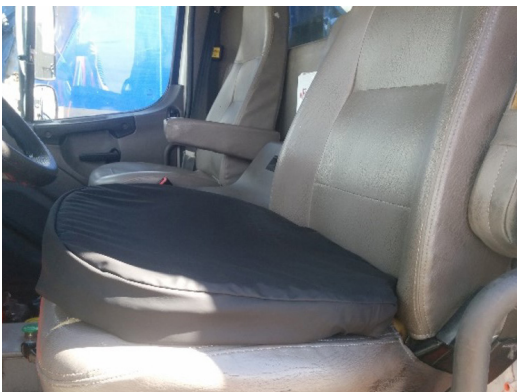
Details of the contribution of work relatedness of the client's low back condition has been thoroughly explored and does support the opinion that his long term employment as a Sheet Metal Worker materially contributed to or caused this case of spinal stenosis.

Waste Disposal Workers

OHCOW helps with back pain in Waste Disposal workers at the City of Hamilton

The City of Hamilton reached out to OHCOW to see if there was any evidence to suggest they should buy expensive new seat cushions to reduce the effects of whole body vibration on their Garbage Truck Driver's backs.

The OHCOW ergonomist met with the JHSC at the City, and arranged to ride along in the trucks, measuring vibration with, and without the new seat pad. The overall vibration levels were not impacted by the seat pan, but the vibration characteristics in the frequency range known to cause back pain were reduced by this device. Workers also reported the seat pan was more comfortable for their backsides during long driving days.



WSIB Allowed Entitlement

Summary of Case

A retired worker was referred to the Toronto OHCOW clinic by a family member. The worker was a kettleman/roofer for more than 40 years. He was diagnosed with lung cancer and was receiving palliative care.

As a kettleman, a part of his job required him to transport blocks of asphalt from a tanker to a kettle. He controlled the temperature of the asphalt in the tanker and kettle, which had a fire underneath it. The lid remained open, so fumes would constantly be emitted. The asphalt was automatically pumped up to the roof from the kettle. He reported no personal protective equipment other than a paper mask.

NIOSH identifies asphalt is heated up to 525 degrees F. or 274 degrees C. for the tanker or kettle housing.

The patient's history was supplemented with significant literature. Ruling out the non-work related conditions, left a 40 pack year smoking history. The patient was able to confirm exposures to many known lung carcinogens, namely: asbestos, silica, asphalt fume, welding fumes, and wood dust. In addition, the literature also identified known lung carcinogens in the kettleman/roofer occupation such as: benzene, diesel exhaust, coal tar, and benzo (a) pyrene – a specific polycyclic aromatic hydrocarbon in the asphalt fume found in kettle operations.

The worker was referred to a compensation representative.

A home visit by the OHCOW Occupational Physician was arranged due to the patient's condition. The patient's son was present and worked in the same occupation. The International Agency for Research on Cancer (IARC) categorizes substances based on evidence for carcinogenicity.

OHCOW's report highlighted the IARC Group 1 carcinogens to which the worker was exposed. The physician and nursing reports were submitted to the Workplace Safety and Insurance Board (WSIB) along with the compensation claim form.

Despite not having quantifications of exposures or having only a single exposure, a clear argument was able to be made identifying that his occupational exposures were significant contributing factors in the development of this worker's lung cancer, supported by medical scientific literature.

WSIB Decision

The advocate ensured the paperwork was received by WSIB and a timely decision was rendered. The claim was reviewed by the WSIB Occupational Hygienist and Occupational Medical Consultant. This claim was allowed for entitlement at the adjudication level based on the worker's exposures to: coal tar pitch volatiles, asbestos, silica, diesel exhaust, and PAHs. Non-Economic Loss and Survivor Benefits were subsequently paid by the WSIB.

WSIB Allowed Entitlement

Summary of Case

A retired refinery Process Operator/Safety Coordinator came to the clinic to determine whether his Multiple Myeloma (MM) diagnosed at age 51 was work-related.

He worked at a Sarnia refinery from 1979 until his retirement in 2014. From 1979 until 1985, he worked as a Process Operator in the CAT cracker and crude units. He had daily exposure to benzene while sampling the lines without personal protective equipment (PPE). From 1985 until his retirement in 2014, he worked as the Emergency Response and Safety Coordinator. He spent the first 1-2 hours of his day externally examining tanks and vessels without PPE. If he entered a tank he wore a respirator. He also worked as a plant firefighter for 29 years.

An OHCOW physician's report was submitted to the WSIB noting the lack of personal risk factors, particularly his young age at diagnosis (median age 66) for MM. The report also cited the literature related to MM and benzene, refinery workers as well as that pertaining to firefighters.

WSIB Decision

The WSIB adjudicator obtained a hygiene and external physician review. She concluded, "It was felt that you do not have strong non-occupational risk factors that can be related to the development of multiple myeloma and therefore it is more probable than not that your workplace exposures, especially to benzene, would have contributed to your disease. Consequently entitlement has been granted in your claim."

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Turning the Knowledge Research from Clinical Cases into Primary Interventions

An OHCOW Occupational Health Nurse (OHN) was contacted by two family doctors and 2 workers seeking guidance for management of patients with elevated blood lead levels (BLL). Best practice guidelines for medical management of BLLs in adults are available and were provided. The workers were seen by a physician and hygienist. The occupational health aspects were not straight forward. Current medical surveillance for lead as a designated substance is very outdated and the proposed new code (O. Reg 490/09) has not yet been enacted.

In this instance, there were four workers from 2 workplaces. Worker # 1, who worked at a lead product manufacturing plant, had requested a BLL by his family doctor (FD). The results came back elevated and the FD advised the worker to inform his workplace. Some changes were made to processes, but a repeat BLL a month later was still elevated and the FD didn't know what to do. This level would have recommended worker removal under the proposed regulation but not under the current one. The employer did not perceive the severity of the problem as he had consulted the MOL legislation, which identified that the results were below any action level. As the legislation was not clear, the worker refused documentation that he was not fit for work and refused a WSIB claim. Work processes and controls were reviewed with an occupational hygienist and follow up BLLs were arranged. An onsite workplace consultation was offered but was not accepted. Workers 2,3,& 4 were from a battery rebuilding shop. Worker # 2 had BLL as screening due to a number of health issues. His BLL was elevated and he suggested his coworkers be tested as well. One worker's BLL was not elevated.

A workplace assessment by occupational hygienists and physician identified issues of housekeeping, ventilation, siting of eating and washroom facilities, as well as a number of other hazards. Recommendations included cleaning methods, equipment, dust control, personal hygiene, respirator care and use, ventilation and education.

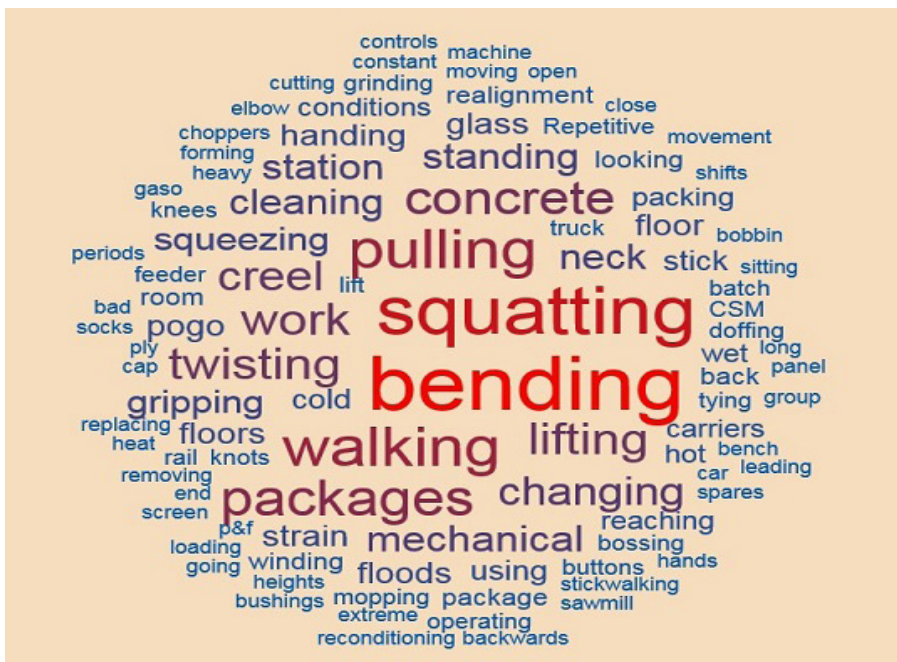
Referrals from primary care practitioners and workers regarding elevated lead levels continue. It raises questions of how clinicians and workers get information on lead surveillance, and specifically what to do when workers have elevated levels. These workers are a window into the workplace who present an opportunity for "in time" intervention to reduce exposures. This is the essence of secondary prevention and OHCOW's unique multidisciplinary occupational health team makes OHCOW well suited to be the "first responder" in these clinical situations. At the primary care clinical level, challenges remain around clinician education and a system to provide easy access to OHCOW resources. At the occupational health and safety level, updated regulations will deliver safer guidelines around exposure reduction as revealed through medical surveillance and should support efforts to reduce levels.

In June of 2016, OHCOW Hamilton Staff arranged to provide education and resources to outgoing Owens Corning personnel in Guelph, Ontario. This was my first opportunity to be a part of a group initiative with my new colleagues at OHCOW. Prior to us going to the Union Hall in Guelph to give a presentation, we were given data on the materials workers were exposed to, and a list of musculoskeletal injuries which occurred in the facility. We used these data to cater our presentation and resources to the most relevant work-related conditions these workers may have incurred during their work in this facility.

The Hamilton OHCOW staff (consisting of three hygienists, a nurse, an occupational physician, and myself – the ergonomist) arrived early in the morning and presented to the Owens Corning personnel who were just getting off of the midnight shift. After the 2 hour presentation, OHCOW staff answered any questions related to occupational asthma, musculoskeletal disorders, occupational cancer, and many other questions that the workers may have asked.

OHCOW staff did the same for workers who were heading in for the afternoon shift, and again for the night shift. It was a long day, but one that the union members said really helped them. Despite the long hours, it was a great way to be introduced to all that OHCOW does, and just how passionate my colleagues are for helping Ontario workers!

Mike Sonne, Ergonomist, OHCOW (Hamilton).



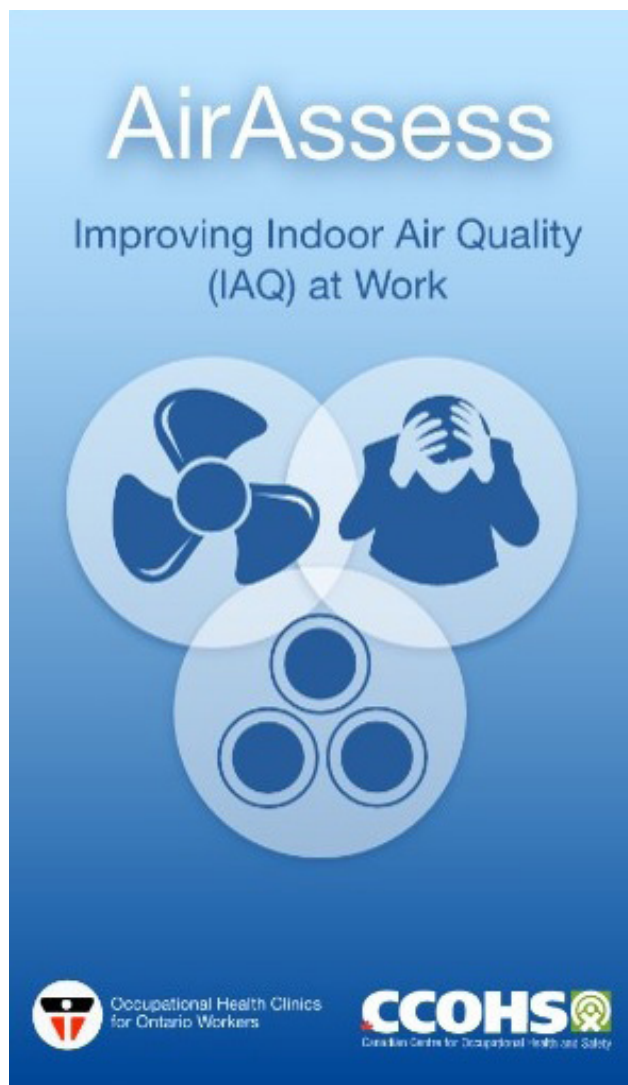
Indoor air quality (IAQ) issues at work can be caused or aggravated by a number of factors. The inter-relationships between these factors can be quite complex. OHCOW has been involved in IAQ investigations since its origin. Often the source of the problem is transitory, so can't easily be found by spot measuring. Surveying occupants has proven to be useful in identifying patterns, and ultimately focussing on sources for prevention.

Since 1993 we have used the scientifically validated MM-040 Indoor Climate survey in over 120 buildings and have collected over 7000 surveys.

In 2016, working with the technical and communications expertise of our long-time partners at the Canadian Centre for Occupational Health and Safety (CCOHS), OHCOW translated the validated survey into a new smart-phone app entitled Air Assess.

After answering questions about the environment, symptoms, stress levels, and allergies, the app algorithm looks for possible patterns and provides ideas to help an individual, and their workplace, take action on important air quality issues. The process is designed to be iterative based on the 5 step Learn, Recognize, Assess, Change & Evaluate model.

Click [Here](#) to download



Fatigue Assess / RCRA



Evaluation of repetitive tasks

A new tool developed by OHCOW, the FatigueAssess module lets ergonomists assess multiple tasks at the same time, and get a predicted level of maximum, average, and integrated fatigue. It also includes the maximum acceptable effort, recommended rest time, and maximum acceptable duty cycle.

Rohmert Rest Allowance



Determine acceptable rest times

Another classic in the field of ergonomics, the Rohmert Rest Allowance equation determines the recommended amount of rest time given the strength demands of a task.

RULA



Posture risk assessment tool

The Rapid Upper Limb Assessment has been an industry standard for quick postural assessments since the mid 90's. This tool allows ergonomists and health and safety professionals to quickly triage jobs that may have demanding postures required to complete tasks.

NIOSH Lifting Equation



Biomechanical model for lifting and lowering

The NIOSH Lifting Equation is a tool used by occupational health and safety professionals to assess the manual material handling risks associated with lifting and lowering tasks in the workplace. This equation considers job task variables to determine safe lifting practices and guidelines.

ROSA



Risk assessment for office workstations

The Rapid Office Strain Assessment is a simple to use tool that can prioritize risk in office work, as well as provide simple solutions to help adjust your existing office furniture. This tool has been validated for professional use, as well as self-assessment.

Strain Index



Repetitive work involving hands and wrists

Long regarded as one of the most complete ergonomics tools, the Strain Index factors in posture, repetition, and force to provide one easy to understand metric on risk. The strain index was recently updated, and this will be featured in ErgoTools shortly.

Prevention Through Intervention

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