

EXPOSURES

DISEASES



Occupational Disease Landscape Review

Final Report

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Submitted to Dr Joel Moody, Chief Prevention Officer
Ministry of Labour, Immigration, Training and Skills Development

by

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For 40 years, I have worked in the healthcare and occupational health and safety systems.

My interest in occupational medicine was sparked when I was a medical resident. During a Friday ward round, a chest physician presented chest X-rays of miners with silicosis — a preventable but incurable lung condition that can lead to serious disability. That piqued my interest and led me back to university for studies in occupational and environmental health.

After an energizing practicum experience at the Ministry of Labour, occupational medicine was firmly embedded in my being.

I started my clinical work at St Michael's Hospital in 1983, whose founders believed that care for workers with injury and disease fell within their mission. While initially focused on occupational lung disease, my practice shifted to occupational contact dermatitis. I started my work week in the clinic, seeing workers with skin disease that might be related to their work.

Those workers taught me so much. Not only did they tell me about their disease, but also how it affected them and their families. I learned that even when it is “just a rash,” it can have a major impact on many lives. Those stories were foundational elements of my teaching, both for medical trainees and also for occupational health students training to be hygienists. The workers' issues and problems planted the seeds for much of my research: focused on their disease and its diagnosis, but also their journey through the healthcare system and the impacts of their disease on their lives. It sparked broader questions about how healthcare providers deal with occupational disease and how prevention has or hasn't worked in their workplaces. It prompted the creation of tools to assist with their journey.

I have seen the good and the challenges in both systems.

Over the years, a cadre of us from different organizations, but with a passion for OD, advocated in the occupational health and safety system for a place at the table for OD. Finally, there was a table for us — we had made progress.

My interest in all of this started with reviewing chest X-rays of older workers with silicosis. It is heartbreaking to think that 40 years later, we have younger workers in this province dying of acute silicosis.

There is still much work to do.

Linn Holness

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*All images in the report were prepared by Doug Panton
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Introduction

Purpose of the Review

An occupational disease (OD) is a health problem caused by an exposure to a workplace hazard. For the purpose of this review, ODs are diseases resulting from exposure to chemicals, physical agents (noise, vibration, radiation, extremes of temperature) or biological agents.

There are many occupational diseases, and some examples include:

1. Occupational lung diseases such as asthma, silicosis, asbestosis
2. Occupational skin disease such as irritant and allergic contact dermatitis
3. Occupational cancers such as lung, skin and bladder cancers, mesothelioma
4. Noise-induced hearing loss, hand-arm vibration syndrome
5. Infectious diseases

There are also different ways to classify occupational disease: it may be based on the body system affected, the length of time before the onset of the disease or the type of exposure.

This report does not address individual occupational diseases.

For the purposes of this review, the categories provided by the WSIB (Appendix 1) were used. These are acute exposure and effects, chronic exposure and effects and long-latency illnesses.

Making the link between exposures at work and health symptoms is often missed. Yet these diseases not only have clinical impact but they can significantly interfere with work performance and quality of life, and in some cases, may cause death.

Recognizing symptoms early and determining the work-relatedness is critical to treatment and ongoing prevention efforts for others in the workplace.

Today in Ontario, a worker with work-related disease symptoms may have difficulty navigating between the two landscapes of the occupational health and safety system (OHS system) and the healthcare system (HC system). This may result in difficulties with timely diagnosis, treatment, and return-to-work planning. We know we can do better.

Focus of the Review

The OD Landscape Review used a clinical lens to identify areas for improvement in both workplace prevention and healthcare delivery for the benefit of people working in Ontario. It also considered ways to strengthen the connections between the two systems for mutual benefit and improved impact.

Topics covered in the review included —

1. Awareness, recognition and reporting of occupational disease
2. Prevention: workplace prevention
3. Prevention: workplace screening
4. Disease surveillance
5. Cluster management
6. Clinical resources related to OD with a focus on healthcare (health human resources)
7. Physician education and training
8. Inclusion of occupation in the electronic medical record
9. Timely adjudication and compensation (Worker health journey)

Topics out of scope for this review include —

- Funding of the prevention system
- Prevention mandate
- Reporting relationships and alignment with the system
- WSIB processes related to occupational disease

We also acknowledge that there are aspects of the prevention of exposures that cause OD that are not part of this review.

Approach to the Review

The OD Landscape Review report includes summary findings and recommendations by review topic. In addition, a visual storyboard was developed to conceptualize the current reality and opportunities.

The **review steps** included:

1. A **brief review** by topic of —
 - Ontario legislative and regulatory requirements
 - Relevant clinically based research in Ontario
 - Prior reports commissioned by the government (or its agencies)
2. **Interviews** with stakeholders and key informants from the occupational health and safety system and the healthcare system to review current practices and issues.
3. A **consultation phase** to validate findings and identify solutions for system(s) improvement, including focus groups.
 - Three groupings representing a) labour unions and workers, b) employers and c) government-funded health and safety system partners participated. Each group met twice, once to discuss the current state and the second to discuss solutions. A listing of focus group members is included in Appendix 2. The focus group discussions were recorded, transcribed and themed independently by the Survey Research Unit at MAP Center for Urban Health Solutions, Unity Health Toronto.
4. A final stage of **report writing** was informed by continued discussions considering how best to build on existing expertise, recognize work already underway, and consider feasibility.

The following principles were developed to guide the report writing:

 - Give priority to forward looking prevention opportunities
 - Apply an equity lens to ensure those workplaces most at risk receive more services
 - Keep it simple, start with a shared focus, and measure progress and outcomes
5. Final **recommendations** were made for the short term and longer term, including proposed implementation guidance.

Executive Summary

A Snapshot of the Occupational Health and Safety System Landscape

The province of Ontario boasts an impressive occupational health and safety system (OHS system) that is studied by other jurisdictions in the world. However, in the area of occupational disease (OD), progress has been slow, and there is still work to be done.

For the purposes of this review, the OHS system was considered to include —

- Ministry of Labour, Immigration, Training & Skills Development (MLITSD)
- Workplace Safety and Insurance Board (WSIB)
- Workplaces (employers and workers), labour unions, employer and worker advocacy groups
- Government-funded system partners, including the four sector-based Health and Safety Associations (HSAs), the Occupational Health Clinics for Ontario Workers (OHCOW), the Workers Health and Safety Centre (WHSC)
- MLITSD funded research centres

The OHS system is composed of many system partners striving to improve OD prevention and protect the health of workers. However, the system today is complex, and while efforts to establish a shared OD agenda have been tried, efforts to implement it have been fragmented, and results are uneven.

A Snapshot of the Healthcare System Landscape

The Ontario healthcare landscape is in a state of stress and transition. It is a complex maze of healthcare providers and healthcare organizations serving the health needs of people living in the province.

The system is composed of many partners including —

- Ministry of Health
- Public Health Ontario
- Healthcare institutions
- Healthcare providers:
 - Primary care physicians and nurse practitioners (solo, team-based)
 - Medical specialists, such as occupational medicine, respirology, dermatology, oncology, neurology
 - Other health disciplines, such as nurses, rehabilitation (e.g., physiotherapy, occupational therapy)

- Educational institutions
- Research institutions

The Ministry of Health provides the majority of direction and oversight of the healthcare system. Public Health Ontario is focused on population level health.

Following is a brief overview of the system and healthcare providers (HCPs) to provide the needed context for this review.

While there are many different regulated health professionals that may be involved in the provision of healthcare to workers with OD, this snapshot is focused primarily on physicians.

- There are approximately 31,000 practicing physicians in Ontario. One way to classify physicians is whether they are general practitioners and family physicians providing primary care or whether they are specialists. All physicians are licensed by the College of Physicians and Surgeons of Ontario, which is the regulatory body responsible for physicians.
- There are approximately 15,000 primary care physicians in Ontario. Primary care physicians practice in a number of different settings and organizational structures. These range from solo practice to large group and team practices. They are unequally distributed across the province, with many areas being designated as under serviced.
- Medical specialists are those who have Royal College of Physicians and Surgeons of Canada certification in recognized specialties and sub-specialties. Specialists practice in a number of different settings, from solo practice to group-based practice in the community or in a hospital.

Because of the many challenges in the healthcare system, the province has introduced Ontario Health Teams (OHT). OHT will manage and connect all levels of care within a geographic area. The OHT are fairly new and still in the process of getting up and running. Common clinical pathways are being developed to provide integrated care for chronic conditions such as congestive heart failure, diabetes, chronic obstructive lung disease and stroke.

Currently, there is much strain on the system. There are human health resource challenges for all health professionals. It is noted that 1 in 5 Ontarians do not have a primary care provider. A study estimated that by 2022, 3 million Ontarians would be without a primary care provider. Even those providers who are in the system are generally burnt out after 3 years of practice during the COVID-19 pandemic.

The introduction of electronic systems, with their various benefits, has also added to the load of healthcare providers. There is much current activity focused on fixing the system. The fixes will not be quick, and the system as we know it may be substantially changed. It is in this environment that the OH&S system steps.

Summary Findings

The review builds on prior research and reports and the input of many committed individuals in both the health and safety system and the occupational disease clinical community.

The conclusions will not be a surprise.

There is strong interest in moving ahead and some momentum ready to be built upon. Leadership is needed. Decisions need to be made. And resources (human and financial) need to be committed.

Four summary conclusions that guide the recommendations that follow include —

1. The crucial link between exposures at work and symptoms of disease is often missed by employers, healthcare providers and workers themselves. This matters to prevention efforts and accurate diagnosis and health management.
2. The Ontario health and safety system and the healthcare system are not well connected. Workers must navigate between the work and healthcare landscapes on their own. Yet work can impact health, and health can impact work. Understanding this dynamic and intervening early is crucial at both the individual and system levels.
3. Prevention, recognition and the diagnosis and management of occupational diseases are not straightforward. We need to pull back to the basics and move forward together. Just adding more of the same and expecting a better result is not recommended.
4. Key design features identified over the course of the review include —
 - Leverage and build on current expertise and capacity
 - Clarify roles and accountabilities
 - Inform and empower workers at each step in their prevention and healthcare journey
 - Build trust in data sources, means of collection, and use
 - Centralize development of core activities and customize as required
 - Set performance standards and monitor results from the start

Summary Recommendations

The recommendations are outlined in detail within each review topic chapter. Implementation advice is also provided.

1. **Awareness, Recognition & Reporting:** Launch an OD public awareness campaign focused on the link between work and health. Follow up with an annual targeted multi-pronged prevention campaign.
2. **Workplace Training:** Centralize education resource development starting with designated substances and provide distributed delivery opportunities for customization and, in the case of smaller businesses, extra support. Improve WHMIS training to include OD content and consider accreditation.
3. **Workplace Medical Screening:** Conduct an assessment of current workplace medical screening practices for designated substances and develop a best practice approach that considers three purposes: a) early symptom recognition and connection to care, b) informing prevention and c) standardized data collection for the provincial surveillance system. Convene a clinical expert panel to regularly review the medical codes for designated substances.
4. **Disease Surveillance:** A disease surveillance system for Ontario is needed. The first step is to decide on the purpose of the surveillance system considering prevention, emerging risks, and research on the impact of interventions. A small expert group is then required to design the system, including needed data inputs, where to house and manage, and how to analyse the data and communicate results publicly.
5. **Cluster Management:** A clear protocol for identifying clusters (acute/chronic and long-latency) and their management is required. Consider a one-time process for the backlog of clusters.
6. **Healthcare: Organization and Health Human Resources:** The recommendation is three-pronged, including
 - a) strengthen the occupational medicine specialist capacity in an academic hub of clinical practice, education and research;
 - b) establish a provincial network of medical specialists with occupational disease expertise; and
 - c) work with an academic family team to identify practical methods and tools for facilitating making the link between work exposures and health.
7. **Healthcare Journey:** Develop clinical care pathways for common occupational diseases, including screening, referral, diagnosis, management, and return to work. Start with respiratory diseases, silicosis and asthma. Establish a formal OD connection with cancer pathways of care.
8. **Healthcare: Physician Education:** Expand the WSIB-funded Champions Program delivered through six medical schools in Ontario to include postgraduate training for family medicine. Strengthen specialists' training starting with respirologists.
9. **Healthcare: Occupation in the Electronic Health Record:** Work with an academic family health team to understand practices related to occupational history taking and determine the barriers and facilitators to improving collection of occupational information.

Topic 1: Awareness, Recognition & Reporting

Introduction

The scope of this chapter is the awareness, recognition and reporting of occupational disease. It includes ways to increase awareness, recognition and reporting and the roles of the various parties. While the inclusion of occupational information in the EMR was initially included in this topic, it will now be covered in a separate chapter under healthcare: occupation in the electronic medical record.

Background

Ontario Legislative and Regulatory Requirements

- Ontario Health and Safety Act (OHSA)
- Workplace Safety Insurance Act (WSIA)

Summary of employer reporting responsibilities

- OHSA S 51 (2), Notice of occupational illness: 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 WSIB 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 health and safety representative and the trade union, if any, containing such information and particulars as are prescribed.
- OHSA S 51 (3) Subsection (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 that a claim in respect of an occupational illness has been filed with the WSIB by or on behalf of the worker.
- WSIA – s 21 (1), An employer shall notify the Board within three days after learning of an accident to a worker employed by him or her, or if the accident necessitates healthcare or results in the worker not being able to earn full wages.
- WSIA – s 21 (4), The employer shall give a copy of the notice to the worker at the time the notice is given to the Board.

Summary of worker reporting responsibilities

- WSIA – s 22 (1), A worker shall file a claim as soon as possible after the accident that gives rise to the claim, but in no case shall he or she file a claim more than six months after the accident, or, if the case of occupational disease, after the worker learns that he or suffers from the disease.

- WSIA – s 22 (2), A survivor who is entitled to benefits as a result of the death of a worker shall file a claim as soon as possible after the worker’s death, but in no case shall he or she file a claim more than six months after the worker’s death.
- WSIA – s 22 (7), The claimant shall give a copy of his or her claim to the worker’s employer at the time the claim is given to the Board.
- WSIA – s 22 (8), A copy of the claim for an occupational disease must be given to the employer who has the most recently employed the worker in the employment to the nature of which the disease is due.

Summary of physician reporting responsibilities

- Reg. 490/09 s 29(7), “On advising a worker and the worker’s employer that a worker is fit with limitations or unfit to continue working in exposure to a designated substance, the physician shall promptly communicate that advice to the Provincial Physician.”
- WSIA s 37 (1), Every healthcare practitioner who provides healthcare to a worker claiming benefits under the insurance plan or who is consulted with respect to his or her healthcare shall promptly give the Board such information relating to the worker as the Board may require.
- WSIA s 37 (2), Every hospital or health facility that provides healthcare to a worker claiming benefits under the insurance plan or who is consulted with respect to his or her healthcare shall promptly give the Board such information relating to the worker as the Board may require.
- WSIA s 37 (3), When requested by an injured worker or the employer, a health professional treating the worker shall give the Board, the worker and the employer such information as may be prescribed concerning the worker’s functional abilities. The information must be provided on the prescribed form.

Consultation and Review Summary

Research highlights

A comprehensive summary of CREOD research is available on the CREOD website.

Awareness

- A study focused on skin disease in the service sector found employers lacked awareness of occupational diseases.
- Work was done to create and test awareness or prevention posters for skin disease and HAVS. Feedback from workers was positive, and customization of the posters to their sector and job was important.

- A study examined the use of narrative versus more visual content to convey basic health and safety information for newcomers and found that visual content was favoured.

Recognition and reporting

- There are many factors that relate to the recognition and reporting of OD. A qualitative study by Howse, Eakin, House and Holness (Why is occupational disease under-reported, 2009 – funded by WSIB Research Advisory Council) found three groups of factors affected recognition and reporting, including 1) psycho-social factors such as perception of the seriousness and legitimacy of a condition and knowledge of workplace hazards and the WSIB reporting process; 2) workplace cultural factors such as stigma and workplace norms, education and support within the workplace, employer pressure and fear of reprisal; and 3) systemic and structural factors such as the content and format of WSIB forms, the WSIB's information requirements for claimants, scientific and policy tensions in adjudication, the existence of employers not registered with the WSIB, financial incentives for employers not to report or to discourage reporting, workplace size and the support provided for workers and knowledge of occupational disease by healthcare providers.
- Ontario-based research has found that even when an occupational diagnosis is clear, a number of workers do not have WSIB claims. For example, several studies of workers with a definite diagnosis of occupational contact dermatitis have reported on WSIB claims submission. A study in 2000 found that at the time of assessment, 41% had a claim. Six months later, after a definitive diagnosis that had increased to 69%. Data from 2012-2016 for those with occupational dermatitis found that overall 52% had a claim filed, with the percentage varying by industry sector.

Reports and reviews

Review of Recommendations from Expert Advisory Panel on Occupational Health and Safety

(Dec 2010)

Following are two of the recommendations that pertain to awareness:

Dean Report Recommendation 3

The new prevention organization should work with other ministries and training organizations to develop a graduated Occupational Health and Safety Awareness and Training Strategy to establish Ontario as a jurisdictional leader in OHS continual learning and training considering —

- An enhanced standard of awareness and training to raise the health and safety knowledge and skills of all workplace parties and to build support for an effective IRS
- Positive campaigns championing the corporate and societal benefits of a healthy and safe workplace to build public awareness, encourage employers to adopt workplace prevention measures and foster support for prevention-focused public policy

- Phased in on a priority basis
- Include embedded OHS awareness information in school curricula beyond primary and secondary schools
- Work with post-secondary institutions on the curriculum for disciplines including teaching, medicine, nursing, engineering and various vocational programs in colleges
- Provide mandatory training for various workplace parties and for identified high-hazard sectors and jobs
- Use community-based and bridging programs to ensure these workers have greater occupational health and safety knowledge as they enter the workforce

Dean Report Recommendation 4

The new prevention organization should develop a multi-year social awareness strategy that will significantly reduce public tolerance of workplace injuries, illnesses and fatalities and shift attitudes, beliefs and behaviours around occupational health and safety.

Stakeholder focus groups

Gap themes

1. There is a low level of awareness across most workplaces, reflected in both the low demand for OD training and the inconsistent knowledge of prevention requirements and workplace surveillance
2. There is confusion about when to report and how and to whom

Solution themes

1. Build joint accountability and leadership for “doing something about OD” with the Ministry in the lead, working with employers, trade associations, unions, health and safety system-funded partners
2. Promote awareness through a public awareness campaign that is —
 - A multi-pronged approach with multiple distribution channels
 - Leverages existing resources
 - Reaches young people, those not registered with the WSIB, and newcomers to Canada
 - Targets a Day of Mourning on OD deaths
 - Teaches about designated substances in schools
3. Improve information flow to support recognition by developing ways to track individual-level work history, exposures, and symptoms, including, for example, a pocket card as part of WHMIS training to help remind workers AND a worker tracking sheet (passport) to update work history/exposures overtime and take to their MD
4. Clarify reporting requirements and have the Ministry report back publicly on DS use in the province and control efforts underway and their impact

Summary Review Findings

Awareness

1. There is low awareness of OD amongst most OHS parties and HC providers
2. Various tools have been developed to increase awareness, but these have not been systematically deployed by the OHS system, with the exception of noise-induced hearing loss
3. The lack of awareness is one of the key reasons for a lack of demand for OD training

Recognition

1. ODs are under-recognized
2. Early recognition improves health outcomes for many ODs
3. Many assume OD recognition rests with physicians, although all OH parties have responsibilities
4. Methods to increase recognition include information about exposures and disease readily available to workers, employers and healthcare providers

Reporting

1. ODs are underreported
2. The mandated reporting roles are outlined in legislation.
3. There remains confusion amongst OHS parties and HC providers about reporting requirements
4. The OD reporting system to the MLITSD is not standardized and makes data analysis challenging

Recommendations

System goals

1. Increased awareness of the link between exposures at work and health
2. Improved OD recognition and reporting by all workplace parties
3. Improved physician recognition of the OD

Short term recommendations

1.1 Launch a **public occupational disease (OD) awareness campaign**

Implementation guidance:

- Immediately standardize OHS OD prevention messaging and branding, beginning with designated substances and respiratory illnesses
- MLITSD bring together all parties to develop and execute a multi-pronged public OD prevention awareness campaign

- Develop an annual OHS OD prevention campaign targeting one priority per year, starting with silicosis

1.2 Develop a **suite of OD recognition tools**

Implementation guidance:

- Focus on DS and OD reporting to start
- Develop a pocket DS resource (reminder) card and electronic reminders (QR codes)
- Implement a worker information card (passport) for tracking their DS exposures over time
- Clarify obligations and legislative reporting requirements for workers, employers and physicians
- Improve the data capture for more effective use in surveillance and prevention

Longer term recommendations

1.3 Implement simple **self-screening tools** for workers starting with lung and skin disease to improve early recognition

1.4 Develop a **shared data strategy** between the MLITSD and WSIB

1.5 Develop **technologically enabled tools** to assist workers with prevention (e.g. remember about health risks and prevention protocols)

Topic 2: Workplace Training

Introduction

The scope of this chapter is workplace training related to occupational disease (OD) prevention. Consideration is given to training program development, ongoing education and knowledge reinforcement, and delivery methods/modes.

Background

Ontario legislative and regulatory requirements

Please note: this is not an exhaustive listing of all legislation and regulations related to workplace training but provides a brief overview.

The Ontario Occupational Health and Safety Act and its regulations and codes provide direction for broad health and safety training requirements. These include awareness training, WHMIS training and mandated/accredited training for JHSC members. Employers are required to provide information, instruction and supervision to a worker to protect their health and safety and acquaint them (or their supervisor) with any workplace hazards. Supervisors must complete basic two-day OHS awareness training.

There are also more specific training requirements in a number of the regulations –

- For requirements focused on exposures that may cause OD, in addition to the broad training requirements, the Designated Substance (DS) Regulations require employers to have control programs that include training workers and supervisors on the health effects of designated substances and measures and procedures required to protect them from exposure
- Training is necessary for respirator usage in the control requirements for exposure to biological or chemical agents
- The noise regulation requires workers with a hearing protection device to have instructions on its use and care
- Physicians conducting medical surveillance under the Designated Substance Regulations are required to provide education to the worker

Current context

In Ontario, many diverse organizations provide training, including OHS professionals in larger companies, the four sector Health and Safety Associations (HSAs), the Workers Health and Safety Centre (WHSC),

and many private organizations. Typically training related to OD hazards is embedded within more general OHS training.

The MLITSD Chief Prevention Officer (CPO) may establish standards for training programs and persons who provide training. However, none currently exist specific to OD. Inspectors may review training practices, sometimes as part of a complaint or incident.

The HSAs and WHSC have substantial education product development expertise. This expertise is primarily internal, but content knowledge originates from literature reviews and external experts such as provincial research centres, including the Centre for Research Expertise in Occupational Disease (CREOD), Occupational Cancer Research Centre (OCRC), Institute for Work and Health (IWH), Centre for Research in Occupational Safety and Health (CROSH), and others.

Sector-specific training tends to focus on hazards versus health and disease. Exceptions include a mining health module added to supervisor training and a diesel exhaust and health module added to JHSC part 2 training.

Consultation and Review Summary

Research highlights

Note a comprehensive summary of CREOD research is provided on the CREOD website.

There has been considerable research on OD-specific training studies in Ontario, particularly focused on occupational skin disease. Key findings include:

- For selected occupational diseases where training has been studied, a significant proportion of workers report not receiving hazard-specific training
- Even those that report hazards specific training say that there are significant gaps in the content
- Workers report examples of good effective training, such as CPR and first aid, while WHMIS was identified as an example of ineffective training (i.e. forgettable due to the content, delivery method and lack of follow-up)
- Generally, training is focused on safety and injury prevention rather than OD
- Workers expressed a desire to learn about prevention strategies, workplace hazards and occupational disease in addition to hands-on training specific to their job tasks
- Effective training characteristics were described as multi-modal with multiple teaching methods to address different learning styles, such as in-person, hands-on training with a demonstration component, use of visuals, use of personal narratives and negative framing or use of potential worst-case scenarios to highlight the importance of prevention
- Other issues identified were a lack of follow-up and a lack of supervisor support

Other research from IWH found:

- Less than 20% of workers report training in the first year on the job
- Active awareness training was associated with stronger impacts than passive training
- A review of the mandated fall-from-height training found a modest effect in reducing injuries targeted by the training

Reports and reviews

Review of Recommendations from the Expert Advisory Panel On Occupational Health & Safety
(December 2010)

This report and its recommendations focused on several topics, including workplace training.

The implementation of the recommendations varies. Several key recommendations include:

1. Implement and audit training standards: The new prevention organization should create, implement and audit training standards that apply to the training required by the Occupational Health and Safety Act. It should also have the authority to develop standards for overarching development, design and evaluation of training quality and develop mandatory training standards for instructors and trainers.
2. Establish Ontario as a jurisdictional leader in OHS continual learning and training: The new prevention organization should work with other ministries and training organizations to develop a graduated Occupational Health and Safety Awareness and Training Strategy to establish Ontario as a jurisdictional leader in OHS continual learning and training.
3. While the recommendations noted apply to training broadly, there are other important directions to note regarding overall training strategy related to a) developing mandatory H&S training for all workers; health and safety reps, and supervisors; b) addressing the specific training needs of vulnerable workers and smaller workplaces; and c) improving health and safety education and training in schools. Many of these points were reiterated during this review, including in the focus groups.

Mining health, safety and prevention review (2015)

The mining review addressed processes that would be helpful to better understand and address OD.

Highlights include –

- A mining sector risk assessment was completed, and five hazards were prioritized
- One of the five priorities was exposure to airborne hazards
- The need to raise awareness among workers and employers of controlling risks to health was highlighted
- There was strong support for mandatory training standards and a Common Core Curriculum.

- The need for continuing improvement related to training delivery, supervisor training and access to refresher training was noted

Other findings

The following points were raised during meetings with stakeholders/key informants during the review.

There is a broad mix of training/education modes that need to be considered in designing education programs —

- Online, classroom, hands-on teaching
- Posters, binders, reminder cards
- Audit tools, apps, checklists, health assessment tools
- There are a large number of publicly funded and private organizations delivering training and little is known about what training is delivered, how and by whom. However, the Ontario.ca website does provide information on available training/trainers for mandated training programs
- Sector risk assessment studies (root cause analysis) have proven successful in engaging and building useful educational responses
- The use of an innovative “extended services” method developed by Workplace Safety North (WSN) shows good promise in addressing issues of training capacity and geographic reach. WSN develops the training and provides support to local trainers in workplaces to deliver
- The four sector-based Health and Safety Associations (HSAs) prioritize curriculum development based on both Ministry priorities and demand (revenue-generating opportunities)

Stakeholder focus groups

Overall, there was concern expressed about the lack of standards for OD training (content, learning methods, trainers), the health and safety system’s capacity to deliver, and ultimately a question of whether training makes a difference to prevention and the health of workers.

Gap themes

1. There is some level of confusion among employers about the need for training beyond WHMIS (i.e. what is mandatory) and acknowledgement that there is very little training specific to disease risks
2. The decentralized approach to training in Ontario with 100s of service providers presents a quality risk
3. Training programs may lack adult learning principles and provide little consideration of the benefits of virtual vs in-person training and/or the unique needs of small and medium workplaces
4. Little attention is given (e.g. in WHMIS) to how learning is applied in specific workplaces

5. The current audit approach (how many attended and completed the course) is insufficient and needs to move to a demonstration of knowledge acquisition specific to the workplace (e.g. handling products as per the safety data sheet)
6. There is a role for HSAs to back up Ministry requirements for designated substances training
7. Connecting training with medical screening would be helpful

Solution themes

The overarching theme in the discussion of solutions was the need to move from a training mindset to an education mindset. Education refers to a process of learning that includes a mix of interactive delivery modes, application and learning in practice (in the workplace), and continuing education and improvement of skills and knowledge over time.

Solution themes related to training delivery:

1. Focus more on worksite/job specific knowledge acquisition and follow-up using the mining sector training as a good example
2. Provide more training support for non-union and/or smaller worksites
3. Move from monitoring whether training has occurred to whether training is effective
4. Improve delivery of education by providing —
 - A way to test for transfer of learning
 - A quality assessment of instructors
 - A mix of in-person training and online self-study courses

Solution themes related specifically to OD:

1. Embed an OD training module in all existing health and safety training (e.g. general awareness training for workers and supervisors, WHMIS, certification training)
2. Improve training curriculum/content by —
 - Centralizing curriculum development for OD
 - Start with designated substances (DS) but don't stop there
 - Develop education programs including training modules, mini education guides, point of work reminders e.g. posters, QR codes, etc.
 - Have HSAs customize core curriculum as needed
3. Work with and leverage WHMIS by —
 - Revisiting existing standards and introducing new where they are not working
 - Updating WHMIS data sheets to better describe the hazards
 - Linking MSDS data sheets to training in real time

- Developing sector specific WHMIS training based on risk and feasibility assessments

Summary Review Findings

1. Employers tend to focus on Ministry requirements to prioritize use of time and resources to train supervisors and workers
2. Given few OD-related regulations and guidelines, occupational disease risk-specific information is often embedded in more general health and safety training programs, such as JHSC certification training
3. There is no practical way of knowing what OD training is happening in workplaces
4. OD training program development in Ontario is highly decentralized, resulting in —
 - Duplication of effort
 - Limited standards for training programs and trainers
 - No ability to monitor, evaluate and track OD training at a system level
5. Delivery concerns include —
 - Too much information to retain or the information is forgettable/not relevant
 - Poor reinforcement of learning in practice
 - Feasibility of training requirements for small businesses
 - Awareness resources and training need to be better integrated to reinforce learning

Recommendations

Note: the following recommendations related to OD training may apply to workplace training generally. The recommendations of previous reports (Dean, Mining) have resulted in some changes in training practices, but there is a need for continuing implementation of their recommendations and their application to OD specifically.

System goals

1. Employers and workers receive relevant, timely, and useful information OD about hazards in their workplace, the associated health effects, and methods of prevention
2. Prevention information is provided in a manner that supports its successful acquisition and subsequent effective use in practice

General recommendations

2.1 Reinforcing the direction of the Dean Report, **establish Ontario as a jurisdictional leader in OHS continual learning and training**

Implementation guidance:

- Use an adult education model of learning
- Align best practices across government supported organizations (HSAs)
- Review required training to assess whether it should be accredited
- Improve the audit process to move from confirming a course/training has been delivered to probing/assessing worker knowledge, skills and behaviours

Short term recommendations

While in the end, we would like all training to meet the highest standards, there are steps to take as we travel there. Given there is very little OD-specific content, the following recommendations are meant as stepping stones to robust OD training:

2.2 **Develop e-learning modules** for key OD-causing exposures starting with designated substances.

The modules should be freely available to all. These could be used as building blocks for of a more extensive training program but also would provide small businesses and workers with at least basic information. Also, standardize this messaging with any awareness initiatives.

Implementation guidance:

- Focus on designated substances where there is a regulatory requirement for training. There are a few training programs in existence through HSAs primarily focused on asbestos
- MLITSD assign an expert core team (drawn from HSAs and add clinical expertise) to develop core content for e-learning modules
- Sector HSAs customize modules as required
- Create a suite of products to complement the e-learning modules with consistent information, such as awareness materials/resources and reinforcement tools considering:
 - Messaging posters
 - Worker hazard information card (with exposure, key prevention strategies and adverse effects)
 - Reminders in the workplace at the site of the hazard

- Possible refresher module for supervisors to support and reinforce ongoing learning with their workers related to OD

2.3 Trial innovative ways to **reach marginalized workers and workplaces** with understanding it must be evaluated to assess effectiveness and scalability

Implementation guidance:

- Work with community health centres with experience in workplace health issues and patients/workers experiencing marginalization that has done this work

2.4 Change the **audit focus** from compliance (training delivered) to demonstrated knowledge/learning

Implementation guidance:

- Develop a checklist for inspectors to use when in organizations with DSs

Longer term recommendations

2.5 Once modules (suite of products) for designated substances are completed, **identify other key hazards** and develop similar tools.

2.6 **Redesign WHMIS** and leverage it as an entry for OD awareness and prevention activity. Move to accredited course status.

Topic 3: Workplace Medical Screening

Introduction

Workplace medical screening is clinical screening for workers with workplace exposure to hazards that may cause occupational disease. Screening may identify workers with unrecognized disease leading to earlier diagnosis and management. Screening data may also add surveillance information at the workplace and broader provincial levels.

Currently in Ontario, there are legally mandated medical screening requirements for workers exposed to some designated substances. Some workplaces may employ screening for exposures beyond the designated substances.

Designated substances in Ontario include: Acrylonitrile, arsenic, asbestos, benzene, coke oven emissions, ethylene oxide, isocyanates, lead, mercury, silica, and vinyl chloride. Medical screening is required for asbestos, benzene, coke oven emissions, isocyanates, lead, mercury and silica.

Background

Ontario legislative and regulatory requirements

The Occupational Health and Safety Act (OSHA 26(h)), requires workplaces to “establish a medical surveillance program for the benefit of workers as prescribed.”

The designated substance regulations (Reg 490/09) specify —

- General screening requirements (27, 28, 29, 30, 31) for acrylonitrile, arsenic, ethylene oxide, vinyl chloride
- Codes for workplace medical surveillance for asbestos, benzene, coke oven emissions, isocyanates, lead (inorganic and organic), mercury (alkyl and non-alkyl compounds) and silica
- Physicians conducting medical examinations and/or supervising clinical tests of a worker must be competent to do so because of knowledge, training and experience in occupational medicine. Physicians have a reporting obligation to the MLITSD if the worker is found to be fit with limitations or unfit. Healthcare providers may have a role in respirator programs.

Historic context

The Ministry of Labour used to perform medical screening/surveillance for silica and asbestos-exposed workers. This included a Ministry-run van that travelled the province performing chest X-rays and spirometry for workers exposed to silica and asbestos. The results were held by the Ministry of Labour

and have been used for research and claims adjudication. With the introduction of the designated substance regulations, the Ministry of Labour ended its program.

Current context

Employers are responsible for the provision and funding of the medical screening programs that are required under the designated substance regulations. Worker participation in medical screening programs is voluntary. Ministry inspectors may write orders to establish a medical screening/surveillance program if they inspect a workplace and find that such a program is not provided. A review of orders from 2017–2021 found 56 for medical screening/surveillance.

Consultation and Review Summary

Research highlights

Note: a comprehensive summary of research is provided on the CREOD website.

1. Research from Ontario provides support for the use of screening for isocyanates. Following the introduction of the designated substance regulations, there was a decrease in occupational asthma claims related to isocyanates that were possibly linked to the introduction of the screening requirements.
2. In addition to required screening, other ODs may benefit from screening. A tool has been developed and tested (either self-administered or administered by healthcare providers) to identify workers with early changes related to hand dermatitis.

Reports and reviews

A report commissioned by the Ministry of Labour in 2010 (Holness DL, House RA, Qureshi R, Saary MJ, Thompson A. *Review of the medical surveillance codes for the designated substances*. Ontario Ministry of Labour, June 2010).

This report examined the then-current evidence for screening for the designated substances and recommended appropriate screening tests for the various designated substances. It also cautioned that “a mechanism to provide for the evolving evidence with respect to both health effects and screening tests would be advantageous so program recommendations could be modified as new evidence is found.” Drs Rajaram and Holness wrote an article for the Ontario Medical Review to provide physicians with information about the changes being made (Rajaram N, Holness DL. Updates to Code for Medical Surveillance for Designated Substances to take effect January 1, 2020: physician who perform medical surveillance are advised to review upcoming changes. Ontario Medical Review, 2019;86:42–43.

Stakeholder focus groups

Gaps themes

1. Disease screening for DS is important, and opportunities to expand to other exposures exists

2. However, little is known about current workplace screening including screening methods, participation rates, and how results are shared and used
3. As a result, there is a general lack of trust in disease screening and surveillance

Solutions themes

1. Workplace screening data needs to be accessible, transparent and centralized to gain confidence in the program
2. Opportunities for workers to self-screen should be explored

Summary Review Findings

1. In the past, the MLITSD performed targeted surveillance (e.g., asbestos and silica) by conducting chest X-rays and spirometry through a Ministry-run program, and this was deemed as helpful
2. The designated substance (DS) regulations contain provisions for workplace medical screening programs
3. There is currently no formal process for developing and updating the designated substance medical codes
4. There is currently no way of knowing what medical screening programs are implemented in Ontario, the results of the screening including for DSs
5. It is unclear who is conducting the medical surveillance programs and how — which physicians, qualifications of those providing services, quality assurance programs for various testing, such as pulmonary function testing — and whether physicians involved are aware of their reporting obligation to the MLITSD
6. Trust in screening practices is low including concerns about how data is being used/for what purpose
7. Medical screening data is currently not connected to the provincial surveillance system

Recommendations

System goals

1. Improved clinical screening of workers exposed to designated substances and other exposures of concern is required in order to enhance —
 - Early recognition of signs and symptoms of possible occupational disease
 - Timely follow-up for definitive diagnosis including work-relatedness
 - Identifying trends in the workplace
 - Informing and prioritizing prevention efforts in the workplace

- Contributing real-time data to the provincial disease surveillance system and potential cluster identification

Short term recommendations

3.1 **Assess the current state of workplace medical screening** in Ontario by investigating what is actually being done for medical surveillance of designated substances (as identified in the regulations)

Implementation guidance:

- Survey a sample of workplaces with designated substances (DS) to identify the presence of a program, how many workers are participating, if the JHSC is receiving reports, and what happens with the data and clinical follow-up
- Survey a sample of physicians/HCPs providing medical screening services to assess their qualifications/training, what they are doing in terms of testing, how results are shared with the worker, and reporting to the JHSC and the MLITSD

3.2 Improve the review of **requirements for medical codes for designated substances**

Implementation guidance:

- Strike an Expert Clinical Panel reporting to the Provincial Physician to develop an approach for Ontario that considers best practices in other jurisdictions AND considers the context outlined in the survey results from recommendation 1 above

Longer term recommendations

3.3 Develop a **multi-pronged programmatic approach to medical screening for designated substances**

Implementation guidance:

- MLITSD uses current state assessment to inform the starting point for improvements in medical screening considering the role of government (monitoring, auditing), the role of workplaces (program delivery), role of workers (participation rights and benefits), and the role of clinicians (clinical services)
- Align the effort with the development of the provincial disease surveillance system to ensure appropriate linkages

3.4 **Expand the screening activities** for other emerging exposures of concern as identified through the provincial disease surveillance system

3.5 Implement simple **self-screening tools** for workers starting with lung and skin disease to improve early recognition (as noted in Topic 1)

Topic 4: Disease Surveillance

Introduction

The scope of this chapter is disease surveillance.

Health surveillance includes the ongoing, systematic collection, analysis and interpretation of data to track disease or exposure over time. Surveillance allows for assessing the magnitude of the disease or exposure, identifying high-risk groups, and targeting prevention efforts. The ongoing collection of data also allows for detecting trends over time. Information gathered during surveillance can inform the design and implementation of prevention strategies for various worker groups and contexts. This review is focused on disease surveillance.

Background

There are different types of information that may contribute to a disease surveillance system:

1. Population-based administrative databases
2. Reporting systems and registries
3. Clinical databases
4. Case reports/case series

Depending on the type of information used, surveillance in and of itself may not prove causation. It can, however, help identify associations between different exposures and outcomes.

Ontario legislative and regulatory requirements

Ontario has no legislative or regulatory requirements under Occupational Health and Safety legislation.

Consultation and Review Summary

General

There are two main sources of surveillance information currently in Ontario that inform occupational disease surveillance.

One is the OCRC Occupational Disease Surveillance System, which uses administrative data from the WSIB and ICES to examine occupational cancers and other occupational diseases.

The other is the patch test databases that inform contact dermatitis and particularly workplace allergens causing disease. Clinicians may also present and publish cases of occupational disease where they have identified new causative agents or agents used in new settings.

A reporting system for occupational asthma was tested in Ontario (see under research). Examples of ongoing reporting systems are those in the United Kingdom (e.g., Epiderm, SWORD (Surveillance of Work-related and Occupational Respiratory Disease) and THOR (The Health and Occupation Research Network)).

Research

Note a comprehensive summary of CREOD research is provided on the CREOD website.

A reporting system for occupational asthma was developed and implemented in Ontario as part of the Asthma Action Plan funded by the Ministry of Health but did not receive ongoing support. A recent study using WSIB researcher and ICES data found that not all individuals with work-related asthma may have an asthma diagnosis in provincial administrative databases.

Patch test databases (both Ontario and North America based) provide current information on exposures in the workplace causing allergic contact dermatitis. The results can be used in a surveillance system to track trends in disease and causative exposures over time and by sector and job.

Reports and reviews

Expert Advisory Panel on OHS (Dean) Report – (2010)

The recommendations provided applied across the system, not just to OD. However, important directions in R#6 and R#7 reference the need to improve data and performance measurement.

Recommendation 6 states “the new prevention organization, in conjunction with the Ministry of Labour and stakeholders, should develop a common database that can be used for planning and evaluation purposes. The system partners, in collaboration with stakeholders, should: develop a common vision of success, and the data needed to determine it, review the occupational health and safety data currently collected, to improve its reliability and validity for the purpose of performance measurement, identify additional information on workers and employers that could be collected and shared, subject to any legislative limitations or restrictions, and review, and where appropriate, consolidate existing leading-indicator initiatives under the new prevention organization.”

Recommendation 7 states “the new prevention organization should establish a business centre to carry out the following functions: standardize, manage and disseminate OHS data, retain and share information on system partner interactions with employers, provide analytical expertise regarding provincial OHS data and manage and authorize stakeholder and public access to data.”

Mining health, safety and prevention review (2015)

This review noted the need for the health and safety system to share information on emerging trends and incidents causing serious injury.

Occupational Disease Advisory Panel – Use of scientific evidence and legal principles in compensation for occupational diseases.

This report noted 1) that “Diagnoses can be misclassified or grouped along lines set out by classification schemes that are ill-suited to the purposes of research.” (P15) and 2) that medical records need only be held for seven years.

Using scientific evidence and principles to help determine the work-relatedness of cancer (Demers)

This report provided recommendations for the development of surveillance systems (Pg. ix) and the better exchange of information between MLTSD and WSIB (Pg. ix).

Stakeholder focus groups

Gap themes

1. There are many challenges with surveillance today, including inconsistent data capture, the relevance of latency data, link with screening missing
2. It is unclear what is being done with reported information — who gathers and how, who analyzes, who decides how to use
3. There is a need for a surveillance system that is independently managed to build trust in the collection and use of data

Solution themes

1. A provincial surveillance organization is required
 - First, they must decide how data should be shared, who has access to the data, and who decides what data needs to be acted upon and how
 - Differences of opinion on where to house the surveillance system
 - Need to bring together MOH, MOL, MOE to share data together
 - Look at best practices around the world (e.g. Finland or Scandinavia)
2. What data is included is very important
 - Get clear on the purpose of the surveillance system to know what to collect and how
 - Data is needed for hazard risk assessments and to inform training and prevention priorities
 - It is time to move from lagging indicators to leading indicators
 - Be aware of the limits of epidemiological data

- Look at actual cases today and what is happening in the workplace, and what exposures exist
 - Work to include occupational and exposure history in health records
3. Need for increased resourcing to build a quality surveillance system
 - To develop quality outputs on trends and to inform priorities
 - To help target proactively going into hazardous workplace settings, including the underground non-union sector, to gather exposure information
 4. Need to incentivize employers to participate in surveillance and cluster mgt
 - Look at the WSIB Excellence Program for ideas on incenting workplaces to participate
 - Identify value add (e.g. access to healthcare providers or support for cluster investigations)

Summary Review Findings

1. There is agreement on the need for an OD surveillance system in Ontario
2. There is currently no clear accountability for provincial surveillance for occupational disease
3. There are differences of opinion on the purpose of a surveillance system and what data is required
4. There are some components of a possible disease surveillance system already in place e.g. Occupational Cancer Research Centre ODSS, patch test databases
5. There is a broader need for and use of data for reporting, recognition and compensation, and the building of a surveillance system needs to identify all the data pieces and get them to usable states so that they work together in a meaningful way

Recommendations

System goals

1. Realtime useable data to inform prevention and identify emerging new risks and/or clusters
2. Capacity to detect trends over time and help measure the impact of prevention efforts
3. The system is well understood (purpose/mandate), and data sources and use are trusted

Short term recommendations

There are many different reasons for surveillance and many different systems possible. Unless there is clarity and agreement about the purpose, methods and outcomes of the system, it will not function effectively, and much investment may be made for little reward. In addition, while our scope is disease surveillance, consideration for exposure surveillance must be part of this process.

4.1 MLITSD lead an OHS stakeholder meeting/process to **agree on the purpose of an Ontario disease surveillance system** and from where it will operate

Implementation guidance:

- Consider pros and cons and then prioritize the following intended end uses of the system: Examples of intended use include a) Inform prevention today (e.g. identify diseases occurring today because of current workplace exposures); b) evaluate effectiveness of previous prevention interventions, including exposure reduction; and c) inform compensation policy and practice
- Following the decision on purpose above, determine the best operating entity for Ontario based on prior reviews' recommendations. Options include a) operating within the MLITSD; b) establishing as an independent entity commissioned by the MLITSD; and c) establishing as an entity independent of the government
- For all options, ensure to leverage linkages with the provincial public health surveillance system and consider other government plans to improve data and performance management across mandates

Longer term recommendations

4.2 MLITSD commission an **expert task force of OHS system data users and experts in disease surveillance methodology to develop the business plan** for establishing a disease surveillance system for Ontario

Implementation guidance:

- Establish an expert task force membership to include OHS system data users/decision makers, experts in clinical and population epidemiology, Ontario Ministry of Health and Public Health Ontario experts with experience in surveillance systems and possible international experts to work through the pros and cons of various possible surveillance systems to provide a recommendation about the type of surveillance required to address the purpose determined in recommendation 1
- Once the method(s) of surveillance are established, develop —
 - operational guiding principles to build trust and resilience (sustainability) from the start
 - data needs and sources, including connection to the provincial health information system
 - methods for securing, storing and analysing data
 - methods/process for providing information to decision-makers and sharing with the public
 - organizational plan to execute including a resourcing plan

Topic 5: Cluster Management

Introduction

The scope of this chapter is occupational disease cluster management in Ontario.

The term “cluster” has been used in recent years to describe an unusual number of cancers occurring among a relatively small group of people that may be due to new and emerging hazards. OD clusters can include many diseases and may be identified when there is a perceived excess risk in a larger population that may be exposed to recognized hazards. The United States CDC defines a cluster as “a greater than expected number of cases that occurs within a group of people in a geographic area over a defined period of time.”

We will use clusters to describe a group of workers who may have an occupational disease related to workplace exposures. Cluster is being used to denote a group of workers with a problem. There are three types of clusters we will consider:

1. Clusters may involve acute exposures and effects — inhalation injury, chemical burn
2. Chronic exposures and effects for workers still in the workplace — occupational asthma, occupational dermatitis
3. Long-latency illnesses when the workers may or may not be in the workplace, and, in some cases, the workplace and its records no longer exists — cancer

Background

It is noted that there are no legislative or regulatory requirements related to investigations of clusters other than potential infectious disease clusters that may fall under public health.

The following provides a brief synthesis of findings related to cluster management practices and research findings. We have defined various scenarios for the purpose of this discussion. There is no common language nor necessarily even understanding of these different scenarios.

For a group of individuals with acute symptoms, it is likely that they will seek healthcare by going to an emergency department if the problem is severe or their other care providers if the symptoms are not life-threatening. Depending on the severity of the exposure and disease, there is often an immediate investigation of the workplace (e.g. carbon monoxide poisoning). If the symptoms are not as severe, the cluster may continue, and its resolution may take some time.

Workers who have had exposure to workplace agents for a longer period of time (weeks to years) may gradually develop occupational diseases. In these cases, they are usually still in the workplace, and the

key question is the diagnosis — what disease are workers suffering from? Obtaining a definitive diagnosis is key to understanding if it is, in fact, related to workplace exposures. Examples would be occupational asthma and dermatitis. In this instance, unless it is recognized that there are a number of people with what appears to be the same problem, it is likely that workers will seek care individually. If it is recognized in the workplace that there appears to be a cluster, the group may be investigated as a group.

The third type of cluster is those diseases that occur after many years of exposure. The workers may or may not still be in the workplace. In some cases, the company may no longer exist. Examples of diseases that would most likely fall in this group are cancers and chronic diseases. These workers are most likely to have been diagnosed by their own healthcare provider.

Context

In the past, the Ontario Ministry of Labour had a group of dedicated staff with clinical, epidemiology and occupational hygiene who conducted sampling studies, looked at trends and informed prevention.

There was also collaboration between clinicians in the community and Ministry of Labour physicians.

The initial investigation of flock worker's lung in Kingston was done by Kingston respirologists with the aid of Ministry of Labour physicians. Not only was the problem recognized, but the local specialist group followed the group of workers for a number of years, contributing to our understanding of the natural history of flock worker's lung. Of interest, the identification of the cluster was aided by the fact that it occurred in a smaller city with one major hospital, so the workers were being seen by a small group of respirologists who would regularly see each other and discuss cases.

For clusters involving current exposures and needing specialized clinical diagnosis, the occupational medicine clinic at St Michael's Hospital has undertaken this type of investigation. Examples include: a discharge of Halon 1301 in a fire extinguishing system, workers involved in demolishing a water treatment plant with lead exposure, two separate clusters involving workers with contact dermatitis related to epoxy exposures and two outbreaks of scabies in chronic care facilities, one of which spread to the community. A number of these investigations have been published.

OHCOW is investigating a number of historic clusters. Some of these are related to specific workplaces, and others apply across workplaces. The workers are suffering from not only cancer but a variety of other diseases.

Public Health Ontario investigates clusters. These are generally environmental (e.g. environmental, school), but they may get requests related to the workplace clusters.

Consultation and Review Summary

Reports and reviews

An OCRC report on an approach to investigating clusters is being written. It is expected that the report will address the need for the MLITSD and other system partners to develop a) collaborative approaches and b) protocols and resources for an expeditious response.

Stakeholder focus groups

Gap themes

1. Cluster management process is unknown
2. There are many challenges with identifying clusters
3. There is a lack of resources to manage clusters
4. Managing clusters vs individual cases needs to be differentiated/clarified

Solution themes

1. Clarify protocol/process for investigating and managing clusters considering —
 - Differentiate between historic/long latency clusters and active emerging illness clusters
 - Identify which health conditions to focus on first
 - Ministry proactively investigates workplaces when hearing about a potential cluster
 - Distinguish between the purpose of the process for claims/compensation versus healthcare and secondary prevention
2. Balance the use of epidemiological data with other data sources
 - Consider different kinds of evidence fairly when evaluating clusters
 - Bring data together from across MLITSD, MOH, MOE
3. Listen to and acknowledge the stories (don't leave workers, their families, and communities behind with no support or resources)
4. Clarify roles and increase resourcing (who identifies, who investigates, who decides)

Summary Review Findings

1. The term cluster has many meanings. There are also different purposes for investigating clusters.
2. No one agency in Ontario is responsible for investigating occupational clusters; neither the WSIB nor the MLTSD has the necessary occupational hygiene, clinical or epidemiological research capacity.

3. It is unclear who has the role or authority to launch a cluster investigation (e.g. WSIB, MLITSD, OHCOW, unions, worker and patient advocates so any or all may try)
4. Unlike public health outbreaks, there is currently no formal protocol for OD cluster investigation and management in Ontario. Response to clusters remains primarily reactive.

Recommendations

System goals

1. Clear definition of types of clusters.
2. Clear understanding of the purpose of investigating various types of clusters.
3. Clarified roles, clear process steps, and standardized data capture for tracking and surveillance
4. Improved transparency and communication with all concerned

Short term recommendations

- 5.1 MLITSD and WSIB **agree on cluster definitions, statements of purpose, and criteria** for the identification of clusters considering a) acute and long latency diseases and b) long-latency, historic clusters.

Implementation guidance

- MLITSD assign a team to draft definitions, statements of purpose, and criteria for cluster identification, considering the OCRC report on clusters that is under development
- Run a consensus meeting with a number of stakeholders to refine and agree
- Formally communicate
- Consider a one-time process to address the current cluster investigations underway

- 5.2 **For acute and long-latency clusters** where the potential for a work-related disease is present in a group of workers, but the diagnosis is unknown, and specialists are needed for diagnosis and management. In this type of cluster, there is the potential need for workplace intervention to control exposures and improve prevention.

- Assign an expert clinical task force to develop response protocols
- Establish a clinical response team (specialists as appropriate for the clinical presentation and supporting clinical staff) to investigate and provide specialized diagnostic services as needed (see Topic 6: Provincial Academic Hub)
- Develop a protocol and response capability to provide assistance to the workplace, particularly small and medium-sized workplaces, for the evaluation and recommendations for controlling exposure and improving prevention

- 5.3 **Long-latency, historic clusters** where the diagnoses are generally known and the key question is the association with workplace exposures.

- MLITSD assign an expert task force to establish a protocol for accepting referrals, steps and methods of investigation, and steps in management, including a) investigation of cluster; b)

worksite prevention support if needed; c) communication and outreach; and d) administrative steps with the WSIB

Longer term recommendations

5.4 Develop an **implementation plan and process** for phasing in the new cluster protocols

5.5 Ensure cluster data is well **linked with provincial surveillance system** to inform sector-wide prevention efforts

Topic 6: Healthcare: Organization and Health Human Resources

Introduction

The healthcare system is critical to the worker's journey. While the MLITSD has direct involvement in the OHS system and the WSIB interacts with the healthcare system once a worker has a claim, they have little direct involvement in the HC system generally. Further, healthcare providers have generally had little involvement in the OHS system, particularly at the system level.

The HC system is complex, under tremendous pressure and transitioning to new models of organization and delivery of care. Care is provided to workers by many components of the HC system, including primary care and walk-in clinics, emergency departments, specialists and in hospitals and other healthcare institutions.

There are many healthcare professionals who may be involved in a worker's care. In the case of occupational disease, physicians are generally the key healthcare provider that will make the diagnosis and provide treatment. Throughout this chapter, we will generally focus on physicians (as they are the key focus of several of these topics) but note that other healthcare professionals are involved.

This review covers several topics related to the healthcare system. While there are specific recommendations/solutions for each, there are several overarching ones that are fundamental for all.

Background

Ontario legislative and regulatory requirements

There are few legislative and regulatory requirements for healthcare providers under the Occupational Health and Safety Act. The main ones relate to the designated substance regulation, as noted in Chapter 2. The only reporting requirement related to these medical codes for DS is if a worker is found to be unfit or fit with limitations. The requirements under the Workplace Safety and Insurance Act are for healthcare providers to provide the WSIB related to a worker's claim.

Historical context

Before the current Occupational Health and Safety Act was established in 1978, there was a unit within the Ministry of Health for the medical aspects of occupational diseases. This was moved to the Ministry of Labour to consolidate expertise in one Ministry.

Historically, there were a number of physicians who provided services to industry, usually either large corporations and particularly those in isolated areas such as mining. As occupational medicine was recognized as a specialty in other jurisdictions, these occupational physicians advocated to the Royal College for the recognition of occupational medicine as a specialty. In 1985 Occupational Medicine was recognized by the Royal College, and the first examinations were held in 1988. Even those who had been in practice had to sit the examinations to become recognized specialists.

The University of Toronto had a long-time interest in occupational medicine (initially called industrial medicine) and offered a Diploma in Industrial Medicine since the 1940s. In the 1970s, the Ministry of Labour supported occupational health activities at several universities in Ontario. This included Manpower Training Grants to McMaster University and University of Toronto and smaller funding to several other universities for resource centres. This funding supported the Occupational and Environmental Health program at the University of Toronto that provided education for physicians and occupational hygienists through a Master of Health Sciences degree. McMaster instituted a Diploma program that included different disciplines working in occupational health. This funding supported the two full-time occupational medicine specialists sited at St Michael's Hospital.

With the recognition of the specialty University of Toronto created the Division of Occupational Medicine within the Department of Medicine. This provided the academic home for the occupational medicine training program, which enrolled its first trainees in the 1990s. The funding supporting the Manpower Training Grant was eventually withdrawn by the WSIB. The University of Toronto continued to support the occupational medicine physicians, which allowed for the continuation of the educational and research programs in addition to clinical services at St Michael's Hospital. However, this support ended with the retirement of these two occupational medicine specialists.

At the same time, the Ministry of Labour provided a one-time grant to St Michael's Hospital to establish an occupational health clinic. This led to the creation of the Department of Occupational Health at St Michael's Hospital. The clinic was eventually staffed by two full-time occupational medicine specialists who not only did clinical work but also set up and ran the residency program and started a program of clinical research focused on occupational dermatitis, occupational asthma and hand-arm vibration syndrome.

In 2004 the WSIB funded the Occupational Disease Specialty Clinic at St Michael's Hospital.

The program has four streams of focus: occupational skin disease, occupational lung disease and allergy, hand-arm vibration syndrome and general, occupational medicine.

Current context

The occupational medicine specialist group in Ontario is composed of a relatively large proportion who were credentialed when the specialty started, and this group is now reaching retirement age. In Ontario,

there are 30 occupational medicine specialists. Five are formally retired, and another 11 are retired or close to retirement. The remaining 14 practice in a variety of settings, including the MLITSD, WSIB and industry. Other physicians who practice occupational medicine are credentialed by the Canadian Board of Occupational Medicine. This does not provide specialist status and in particular for occupational disease, lacks any requirement for clinical expertise beyond that of a primary care physician. Some physicians may also practice occupational medicine with no occupational medicine credentials. The Ontario Medical Association has a section on Occupational and Environmental Health. It has 111 primary members and 264 who have primary membership in another section (e.g. family practice) but also indicates an interest in occupational and environmental health.

Clinical service – occupational medicine

The Division of Occupational Medicine at St Michael's Hospital is the only formal clinical site that provides specialist clinical services related to occupational disease. This includes the WSIB OD Specialty Program and referral clinics focused on contact dermatitis and general, occupational medicine. There is one formally retired but still essentially full-time occupational medicine specialist. There are two part-time occupational medicine specialists who spend the majority of their time in other organizations. In addition, there are three dermatologists, two respirologists and one allergy/clinical immunology specialist who all have expertise in the occupational disease relevant to their specialty. The retirement of the two full-time occupational medicine specialists has created gaps not only in clinical care but also impacted the educational and research activities of the academic occupational medicine group.

Educational activity

There are currently three universities in Canada that provide specialty training in Occupational Medicine: the University of Toronto, The University of Alberta and the University of Montreal. These programs generally admit one resident per year.

Clinical research

There continues to be a clinical research program primarily focused on contact dermatitis and hand-arm vibration syndrome. However without the two full-time occupational medicine physicians it is challenging to maintain its previous level of activity.

There are pockets of clinical research in other centres, notably dermatology in Ottawa and respirology in Kingston.

Consultation and Review Summary

Reports and reviews

There are no reports related directly to healthcare activities related to the OHS system. While a number of reports on other topics make recommendations related to better physician education on occupational topics and the capture of occupational information in the (electronic) medical records they have not studied these issues in depth.

Stakeholder focus groups

Gap themes

1. Need to increase healthcare capacity
2. Need for clarity and protection of worker rights to protect their health

Solution themes

1. Clarify and simplify the worker health journey
 - Clarify roles at each step of the pathway
2. Address the potential for conflict of interest for physicians to ensure they are not caught between advocating for the health of a worker and protecting the employer
 - Create some level of independence
 - Need transparent collection (why, what, how) of personal and workplace health data
 - Improve reporting of occupational diseases — what, how and to whom — to support making the link back to prevention

Summary Review Findings

1. While the OHS system is dependent on the healthcare system to deliver care to injured or ill workers, there has been little attention paid to the relationships between the two systems.
2. While Ontario has had a strong academic, occupational medicine presence providing clinical care, education and research, this is in some jeopardy with the retirement of the two full-time occupational medicine physicians.
3. The OHS system has expectations about primary care physicians and their practice related to OD. However, with the current state of the healthcare system, including primary care, relationships and expectations need to be built with sensitivity and respect.
4. Specialist physicians (e.g. respirology, dermatology) in the Province are seeing patients with occupational disease, but they are not formally linked to the occupational medicine specialists or provincial case data.
5. There are a number of physicians who practice occupational medicine. They may work for service providers (companies who provide occupational health services to industry) or contract directly with

industry. Little is formally known about their qualifications, and practice and stakeholders have raised concerns regarding trust.

6. While the review has focused on physicians, consideration of other health disciplines, particularly occupational health nurses who work primarily in industry is needed.

Recommendations

System goals

1. Clinical capacity improved
2. Primary care is enabled to provide appropriate care for those with OD
3. Other health disciplines, particularly nurses, are well integrated to care pathways

Short term recommendations

- 6.1 **Recognize and resource the Occupational Medicine Clinic as the provincial academic OD hub** (clinical, education, research) for occupational medicine specialists and the networks of specialists and primary care providers working in occupational medicine
- 6.2 Establish a **regional network of specialist physicians and nurse practitioners** for patient referrals from medical screening programs, to provide clinical care for workers with OD across the Province and to participate in acute and long-latency cluster clinical response teams where the key issue is diagnosis
- 6.3 Create a **primary care “incubator”** with a large academic Family Health Team to identify helpful and feasible ways to improve primary care involvement in the occupational health response in Ontario. Through the incubator, understand the clinical training of family medicine physicians related to occupational health and disease

Longer term recommendations

- 6.4 **Continue to develop** the occupational medicine academic hub and regional specialist networks, adding additional specialties as needed
- 6.5 With a better understanding of the landscape of **primary care, consider a pilot of a OHS navigator** embedded in a FHT to support occupational healthcare; consider a potential role on the Ontario Health Teams
- 6.6 Consider the **roles of other health professions** specifically related to occupational health to continue to build capacity

Topic 7: Healthcare Journey

Introduction

The scope of this chapter is the worker-patient journey through the system, from the workplace, through the healthcare system for diagnosis and management to the outcomes of OD and the review of what is known about physician practice — from both the perspective of the physician and the worker. A review of the WSIB processes is specifically excluded from our mandate.

Background

The worker's healthcare journey starts in the workplace with training related to the adverse health effects of exposure. An understanding of the possible adverse health effects related to the worker's workplace exposure is an important first step. This topic is addressed in detail in Chapter 2, Workplace Training. Depending on the workplace exposures, medical screening may be important to identify the possibility of very early disease before it is clinically manifest to the worker. This topic is addressed in detail in Chapter 3. Screening is the activity that first clearly bridges the OHS system and HC system.

The worker's journey in the healthcare system related to OD usually starts when they have symptoms that cause them to seek care or may occur because of positive screening tests that lead to further investigation to determine if the worker has an occupational disease. In cases of acute events, this may be obvious to all, and they are sent to the emergency department or to a primary care provider for acute care. For many ODs, the presentation is not acute, and they will first develop symptoms of the disease. At some point, they will seek care, again usually starting in the primary care system. Depending on the disease, further investigation involving a variety of specialists may occur, leading to a diagnosis and treatment. In addition to medical treatment and management, management of workplace exposures is also a necessary part of management.

For example, a worker with respiratory problems such as asthma or silicosis would likely be first seen in the primary care system and then referred to a respirologist. Similarly, a worker with dermatitis would likely be first seen in the primary care system and then referred to a dermatologist. In these cases, the occupational nature of the diagnosis requires the work association to be part of the diagnostic process. Another example is cancer. In this case, the worker would usually be diagnosed and treated in the cancer system by the appropriate specialists (e.g. oncologist, radiation therapist, surgeon). In the case of diseases like cancer, the work association is usually not critical to the diagnosis and disease management.

Once the diagnosis is made and treatment advice provided, the follow-up of the worker in the healthcare system may vary. In some instances, they will return to the primary care provider or community specialist for ongoing care (e.g. asthma, dermatitis), while in other cases, they may remain with the specialists (e.g. cancer).

Depending on the disease, for chronic diseases like cancers, the healthcare journey may eventually end in palliative care.

As part of this journey, communication is vital to provide timely and effective care. In most healthcare encounters, the main communication occurs between the provider and the patient and their other care providers in the healthcare system. However, in the case of a work-related disease, the communication links are broadened and may include the WSIB and employer expanding the work for the healthcare provider.

The past several decades have seen the development of clinical practice guidelines for many diseases. While some systematic reviews and consensus statements exist for some ODs, these do not link the recommendations with the HC system. The WSIB has developed Programs of Care which are generally for musculoskeletal problems and injuries.

Current context

From previous chapters, we know that:

1. OD is under-recognized and under-reported
2. Health human resources are limited and decreasing with respect to clinical expertise (occupational medicine and other relevant specialists) related to OD diagnosis and management
3. The HC system is generally overburdened and going through transition to new models of care

Consultation and Review Summary

Research

Note a comprehensive summary of CREOD research is provided on the CREOD website.

Key findings include:

1. Research of the worker healthcare journey for Ontario workers/patients shows that the worker with occupational disease typically is in the healthcare system for some time before a definitive diagnosis is made. They see a number of physicians, both primary care and specialists
2. Clinical research has improved our diagnostic practices related to OD.
3. Clinical tools have been developed to facilitate the diagnosis and management of OD

Reports and reviews

No formal reports or reviews of this part of system.

Australia has responded to the recent outbreak of silicosis with a National Dust Disease Taskforce.

This includes a number of documents providing guidance to the healthcare providers at the various stages of the worker healthcare journey

Stakeholder focus groups

Gap themes

1. Need for better care pathway for worker health assessment and treatment
2. Need to increase healthcare capacity
3. Need for clarity and protection of worker rights to protect their health
4. Need for education

Solution themes

1. Clarify and simplify the worker health journey
2. Make the pathway visible/known
3. Clarify roles at each step of the pathway
4. Improve and simplify reporting — of exposures and symptoms
5. Address the potential for conflict of interest for physicians to ensure they are not caught between advocating for the health of a worker and protecting the employer
 - Create some level of independence
 - Need transparent collection (why, what, how) of personal and workplace health data
6. Create tools to empower workers throughout the health journey/pathway
 - Develop worker exposure history tool (passport... like vaccine and pharmacy records)
 - Develop a questionnaire or anonymous self-screening tool that helps workers make the link between their symptoms and designated substances in their workplace + provides guidance on next steps if they are concerned (reporting, access the healthcare, etc.)
7. Improve HCP education
 - Build awareness of the link between work and health
 - Provide patient/worker-specific exposure information (passport)
 - Provide diagnostic trees/supports — what tests to order when
 - Reporting obligations

Summary Review Findings

1. We know that currently, there are challenges for workers with OD journeying through the HC system. We have an understanding of some of the factors that lead to delays. These include some understanding of the worker's reasons for seeking or not seeking care and physician practices relating to the diagnosis and management of OD, including the barriers and facilitators
2. While there are guidelines for the diagnosis and management of some ODs, these are not necessarily linked with the HC care system so implementation is limited
3. There are some tools that have been developed to assist with diagnosis and management, but they have not been integrated into care

Recommendations

System goals

1. Early recognition of possible OD leading to timely diagnosis and treatment to achieve the best possible outcomes for the worker
2. Use of best practice or evidence-based care throughout the worker healthcare journey
3. Continued applied clinical research to continue to improve diagnosis and management of ODs

Short term recommendations

7.1 Develop **clinical pathways** for common ODs

- The clinical pathway would start with the worker first being exposed to a hazard and the need for education about the adverse effects and prevention strategies (Topic 2).
- The pathway would include screening, if appropriate, then diagnosis and management.
- A key component of the pathway is not just these steps but also the identification of the roles of various healthcare providers along the pathway.

Implementation guidance:

- Convene a group of clinical specialists from the academic OD hub (see Topic 6) supplemented by additional clinical experts as needed, practicing primary care providers and a worker for the particular disease
- Start with respiratory diseases, silicosis and asthma
- Learn from Australian model (use the Dust Disease Taskforce guidance as a start for silica)
- From the start, address implementation issues with those with expertise in clinical implementation.

7.2 Pilot the use of enhanced clinical diagnostic tools, including some already developed and evaluated in Ontario, for use in primary and specialist care

Implementation guidance:

- Start with the asthma screening tool (WRASQ(L))
- Using respirology network (Topic 6), engage in learning about the tool and facilitating its use in practice
- As part of primary care initiative (Topic 6), understand the barriers and facilitators for its potential use of the tool in the primary care setting

Longer term recommendations

7.3 Implement clinical pathways and evaluate using the Knowledge Translation framework

7.4 Determine the next pathways to develop based on clinical and health human resource needs in the province

Topic 8: Healthcare: Physician Education

Introduction

The **scope** of this chapter is physician education related to the prevention, diagnosis and management of occupational disease. Training may include undergraduate medical education, postgraduate education and continuing education.

Background

Physician education is a lifelong activity. Physicians are initially trained in medical school to obtain their MD degrees. They then pursue further training to become family physicians/primary care physicians or specialty training to become specialists. Physicians have requirements for continuing education from regulatory/licensing bodies.

Basic MD programs are offered by faculties of medicine. The Medical Council of Canada sets out competencies for the students. There is a section on work-related health issues in the MCC requirements. Medical schools are accredited by the Committee on the Accreditation of Canadian MD programs.

Postgraduate training (residency) programs are run by medical schools. Competencies for trainees are set by the College of Family Physicians of Canada and for specialist trainees by the Royal College of Physicians and Surgeons of Canada. The competencies relevant to occupational health will vary by specialty.

Education is a life-long activity with requirements for ongoing education for continued licensure. Continuing education activities may be run by a variety of organizations. Continuing education programs can be accredited for maintenance of competence recognition for family physicians or specialists through an accreditation process approved by the respective College.

Historical context

Occupational health in medical schools

The need for improved medical student training in occupational health has been recognized in Ontario, Canada, for many years. In 1994, the Ontario Medical Association Section of Occupational and Environmental Medicine gathered together a number of groups with an interest in clinical issues related to workplace health, including government, universities, hospitals, research organizations and organized labour and a needs assessment was conducted demonstrating gaps in occupational health knowledge, skills and training. A steering committee with representation from various stakeholders, including academia, workers' compensation board, organized labour, management, and the insurance industry,

was formed and advocated for improved education for medical students. In the late 1990s, the WSIB undertook a survey of occupational health content in the medical school curricula of the then-five medical schools in Ontario. This led to the creation of the Workplace Health Champions Program (WHCP) in 1999.

The WHCP was designed to support Ontario medical schools' work in occupational health. The program supports the development and implementation of a workplace health curriculum through a Workplace Health Champion. Each year, each of the six medical schools reports on their activities in occupational health.

Current context

Undergraduate medical education

Through the Workplace Champions reporting, we know that each medical school offers an undergraduate curriculum related to occupational health.

Postgraduate education

Postgraduate Training in Family and Community Medicine

The Workplace Champions Program is facilitating increasing activity in family and community medicine training.

Occupational medicine

There are currently three universities in Canada that provide specialty training in Occupational Medicine: the University of Toronto, The University of Alberta and the University of Montreal. These programs generally admit one resident per year.

Other relevant specialties

Other specialties may include training objectives related to work-related disease relevant to the specialty. For example, dermatology, allergy and clinical immunology and respirology trainees may rotate through the occupational medicine clinic at St Michael's Hospital. While primarily trainees from the University of Toronto programs, some trainees from other Ontario universities have done electives in the clinic. Training programs may also have academic sessions on the relevant occupational diseases.

Continuing education (CE)

Continuing education is offered through several routes. Education focused on occupational medicine includes St Michael's Hospital occupational medicine rounds. The Ontario Medical Association Section on Occupational and Environmental Health holds an annual day in occupational medicine for physicians in Ontario. There have been other continuing education activities, such as Project ECHO. Many of the participants in these educational activities already have an interest and practice in occupational medicine.

Consultation and Review Summary

Research

The Occupational Medicine program is currently conducting a review of the literature related to teaching at the undergraduate and postgraduate level.

Reports and reviews

There are no reports related directly to healthcare activities related to the occupational health and safety system. While a number of reports on other topics make recommendations related to better physician education on occupational topics and capture of occupational information in the (electronic) medical record, they have not studied these issues nor have expertise in them.

Stakeholder focus Groups

Gap themes

1. Need for improved healthcare provider (HCP) education

Solution themes

1. Build awareness of the link between work and health
2. Provide patient/worker-specific exposure information (passport)
3. Provide diagnostic trees/supports — what tests to order when
4. Clarify reporting obligations
5. Strengthen capture and coding in EMR

Summary Review Findings

1. National organizations set competencies and knowledge expectations for undergraduate and postgraduate medical education. The requirements for occupational health knowledge and competencies will vary depending on the level of training and the specialty.
2. A review of the literature on undergraduate medical training was undertaken several years ago and is currently being updated to include undergraduate, postgraduate (residency) and continuing education.
3. Details of undergraduate occupational health training in the undergraduate programs in Ontario medical schools are contained in the WSIB Workplace Champions program summary. Additional information about some activities in postgraduate programs, such as Family Medicine, is also reported.

4. While we know what happens in more didactic portions of the training programs, we don't know how occupational health is taught or emphasized in the clinical training setting. As physician learning will be influenced by their clinical training, this is important to understand.
5. Uptake of CE related to occupational health appears to be limited outside the circle of those working in occupational health.

Recommendations

System goals

1. All physicians are aware that work is a determinant of health as relevant to their scope of practice.
2. Physicians have the knowledge, skills, and tools to appropriately diagnose, treat, and help prevent illnesses related to exposure in the workplace (relative to their specialty).
3. Physicians understand and can navigate the OHS system as appropriate for their specialty.

Short term recommendations

- 8.1 Expand **Workplace Champions Program** to primary care training and look for ways to evaluate activity using information from literature review of medical education

Implementation guidance:

- Workplace Champions program expand to include postgraduate training in family medicine.
- Once literature review is completed, champions program and champions consider curricula design changes to include methods that were found to be effective

- 8.2 **Review relevant specialty training for occupational disease** content, and grow if possible, **starting with respirology** (aligned with other activities in this review)

Implementation guidance:

- Through specialist network (Topic 6), engage with relevant specialties starting with respirology, to review training and identify key respirology OD clinicians at each medical school offering respirology training
- Identify ways to enhance training and utilize technology to provide trainees with exposure to occupational respirology experts
- Offer tailored rotations at the provincial academic OD hub for those who wish to further develop their occupational respirology knowledge and mentor for involvement in the network

8.3 Advance **continuing education offerings**

Implementation guidance:

-

- Gather information through a variety of methods and through primary care incubators about what is needed and how to provide continuing education for primary care. Identify primary care champions to help develop CE programs for primary care.
- Through specialty network, establish needs of respirologists for continuing education.
- For those working in occupational medicine in the community (company based, etc.), do needs assessment specific to OD
- Work to develop evaluation methods

Longer term recommendations

8.4 **Based on learning** from work above, **expand** to other specialties/specialists

Implementation guidance:

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- Refine medical school and family physician training
- Extend specialist approach, with learnings from respirology to other specialties (e.g. Dermatology)
- Develop a CE program for primary care led by primary care providers
- Develop a CE program for occupational medicine practitioners in the community

Topic 9: Healthcare: Occupation in the Electronic Medical Record

Introduction

This section focuses on occupational information in the electronic medical record (EMR). This topic has been raised in various reports and discussions. A key question is the purpose of having this information in the medical record. In the OHS system, it is often a desire to have this data in administrative databases for use in surveillance and research. However, the physician's key purpose is caring for their patients. A key primary question is what information does the physician need to care for their patients.

While often the term medical records are used, as practice becomes more team-based, a more appropriate term is health record. In this discussion, we will use the term medical record, but it is important to realize that this will eventually be a more integrated health record. Medical and health records are generally transitioning from paper form to electronic form. The decision about whether to move to an electronic health record (EHR) is made by the practitioner, group or institution. While many individual and group practices have moved to an EMR, institutions are in different stages of transition and depending on the complexity of the institution, there may be different EHRs within the same institution.

Background

One regulatory requirement relates to the time the medical record has to be retained. For medical records, the time period is ten years from the date of the last entry. For medical records related to DS medical screening, the records must be retained for either 20 years from the date of the last entry or 40 years from the date of the first entry, whichever is the later date.

Originally medical records were paper-based. This is changing to electronic records. There are a variety of different electronic medical records provided by different vendors in use by physicians in Ontario. In Ontario, vendors are approved by OntarioMD, which sets minimum requirements for data elements in the EMR. This means that there are a number of different EMRs with different content and structures. Data elements for work information may explicitly be in the EMR or may be included in broader sections. Other healthcare institutions, such as hospitals, are in different phases of implementation of EMRs/EHRs and again there are different systems in use. One of the challenges is the communication between these various EMRs and also the data sources of health information that are pulled into the EMR. This is the setting in which the discussion of occupational information in the EMR is cited.

Current context

There are many statements made about physician practice regarding occupational information. Some say that there is no occupational information in the medical record/EMR. The reality is that we really don't know.

Consultation and Review Summary

Ontario Research Findings

1. Note a comprehensive summary of CREOD research is provided on the CREOD website. Several Ontario studies have examined physician practice related to taking an occupational history from both the physician and patient perspectives. Physicians reporting that they take an occupational history included 57% of family physicians, 92% of respirologists and 91% of dermatologists. From the patient perspective, those being investigated for possible work-related dermatitis reported that 67% of family physicians and 53% of dermatologists asked about their job.
2. Patients being seen for possible work-related skin disease reported that over half of both family physicians and dermatologists asked about their job but rarely collected more detailed information.
3. The main barriers to taking an occupational history included time constraints, lack of confidence in taking the history, patients not being able to provide the information, lack of knowledge of the compensation system, lack of adequate reimbursement, excessive forms, reporting that it was not their job and forgetting.
4. Several studies have been done to get occupational information into the medical record. The settings include community health centres, lung cancer clinics and a family health team. While all the studies accomplished the capture of occupational information during the study period but the ongoing collection is not known. Barriers and facilitators to the recording of occupational information were identified.

There is a current ongoing study to document the occupational information in medical records to help provide baseline information related to the content of the medical record.

Summary Review Findings

1. The healthcare system is in transition to EMRs with different implementation. There are a variety of different EMRs in use, making connection more difficult.
2. We know that not all physicians take an occupational history, but some do.
3. We know something about the barriers and facilitators to taking an occupational history.

4. We don't understand how primary care providers practice related to occupational health and OD specifically, specifically as to when and how they take an occupational history and what they include.

Recommendations

System goals

1. Appropriate occupational information in EMR to facilitate physician practice including the prevention, diagnosis and management of work-related disorders.

Short term recommendations

- 9.1 **Complete baseline study** of occupational information in EMR already underway
- 9.2 For **primary care**, understand how the information is used in practice, who is best suited to collect information, what information is needed as a baseline for clinical care

Implementation guidance:

- Observation and information collection from incubator FHT (Topic 6)
- 9.3 For **respirology network**, pilot use of the asthma history tool to understand barriers and facilitators to its use
 - 9.4 For **lung cancer**, determine where occupational information could be collected in the lung cancer pathway using the Cancer Services (Ontario Health) team

Longer term recommendations

- 9.5 Based on results of short-term activities, move forward **with FHT incubator to implement and evaluate occupational information collection for EMR**
- 9.6 For the **cancer system**, consider help with **exposure information from the OHS system partners**

In Closing

The review process was extensive and aimed to build on prior research and reports and reflect well the needs and advice of system stakeholders from both the OHS system and the HC system. We are grateful for the thoughtful and engaged input of all involved.

Important principles that emerged include —

1. Strengthen connections between the OHS and HC systems (strategic linkages)
2. Inform and empower workers at each step in the prevention and healthcare journey (agency)
3. Build trust in data collection, integration and use in both systems (informed decision-making)
4. Prioritize prevention services for smaller workplaces and industries most at risk (equity)

We strongly recommend that action be taken on the recommendations within. We experienced a strong interest in the OHS system to take action but little consensus on what, how and who. Without making decisions and articulating a comprehensive OD plan, partners will continue to move ahead on their own. While with good intent, the results are not optimal. Pulling back to basics and proceeding together in both an organized and comprehensive way is required.

OD system design considerations include —

1. Get clear on purpose first
2. Clarify roles and strengthen accountabilities
3. Leverage and build on current expertise and activity
4. Centralize development of core activities and customize as required
5. Set performance standards and monitor results from the start

Finally, connecting the two OHS and HC systems in more fundamental ways is needed. This will require leadership and engagement from within the HC system and an OHS system sensitivity to the many challenges facing healthcare providers today. Supporting providers (specialists, primary care) most likely to see patients with occupation related disease and facilitating their diagnosis and care planning is the best place to start.

System redesign is a journey. Advancing our collective understanding of the connection between workplace exposures and disease and where and when to intervene is the goal. Worker health is the outcome.

Appendix 1: WSIB Definitions for Classifying Occupational Diseases

Terms	Definitions
Acute exposures & effects	Acute exposures and effects describe medical conditions that happen right after the person is exposed to a chemical, biological or physical agent at work. i.e. exposures to infectious disease from getting bit or being struck by a needle.
Chronic exposures & effects	Occupational diseases in this category involve medical conditions that develop slowly over time from prolonged or chronic exposures in the workplace. The disease and symptoms often show up while the person is still working in the place where they had the exposure. i.e. conditions like dermatitis and some respiratory diseases can be caused by constantly being exposed to chemical or biological agents in the workplace.
Long latency illnesses	In long latency illnesses, sometimes the symptoms may not show up until many years after an individual was exposed to the disease-causing agent. i.e. mesothelioma, which is a cancer of the pleura or peritoneum that can develop from exposure to asbestos that occurred decades ago.
Noise-induced hearing loss (NIHL)	It is a permanent hearing loss, usually in both ears, resulting from inner ear damage due to prolonged, continuous or intermittent hazardous noise exposure.

There are many occupational diseases. They range from acute exposure with immediate health effects to chronic diseases that may manifest after the worker has left the workplace. For the purposes of the review, we used the following terms and definitions.

Appendix 2: OD Landscape Review Focus Group Participants

Worker and Labour Representatives

- David Chezzi, Ontario Federation of Labour
- Bob DeMatteo, Occupational Disease Reform Alliance
- Alec Farquhar, Key Informant
- Chris Grawey, Injured Workers Community Legal Clinic
- Sue James, Occupational Disease Reform Alliance
- Sandra Kinart, Occupational Disease Reform Alliance
- Natasha Luckhardt, Ontario Federation of Labour
- Janet Paterson, Ontario Network of Injured Work Groups
- Carmine Tiano, Provincial Building and Construction Trades Council of Ontario
- Margaret Townsend, Office of the Worker Adviser

Workplace/Employer Representatives

- Frank Crowne, Ontario Mining Association
- Trina Hayden, Council of Ontario Construction Associations
- Marc Keough, Windley Ely
- Maria Marchese, Canadian Manufacturers & Exporters
- Mitchell Matthews, Canadian Vehicle Manufacturers 'Association
- John Petherick, Ontario Mining Association
- Robin Senzilet, Office of the Employer Adviser
- Shawn Shakeel, Canadian Federation of Independent Business

Health and Safety System

- Dr. Paul Demers, Occupational Cancer Research Centre
- Dr. Sandra Dorman, Centre for Research in Occupational Safety and Health
- Jasmine Kalsi, Infrastructure Health & Safety Association
- Kimberly O'Connell, Occupational Health Clinics for Ontario Workers
- Mike Parent, Workplace Safety North
- Ellen Simmons, Workers Health and Safety Centre
- Elaine Skinner, Public Services Health & Safety Association
- Dr. Peter Smith, Institute for Work & Health
- Wagish Yajaman, Workplace Safety & Prevention Services

OD LANDSCAPE - MAKING THE LINK

HEALTH & SAFETY SYSTEM

WORKERS

HEALTHCARE SYSTEM

