HCS 3000

WORKPLACE SAFETY SYSTEMS

In Canada, 31, 441 lost-time claims were filed by young workers aged 15-24, due to on-the-job injuries in 2017.

In the same year, 4 workers aged 15-19, and 19 workers age 20 - 24 died in workplace incidents.

Only 1 out of 5 new workers receives safety training.

http://awcbc.org/wp-content/uploads/2018/03/National-Work-Injury-Disease-and-Fatality-Statistics-Publication-2015-2017

https://www.safetyandhealthmagazine.com/articles/14053-new-workers-higher-risk

Workplace Health & Safety...Why the Concern?

Did you know...

- Workers with less than six months' experience are three times more likely to be injured than those with a year or more of experience?
- Workers under the age of 25 are 33% more likely to be injured on the job than older workers?

Here are some reasons that explain why young workers are at a greater risk for injury at work:

- Lack of training and work experience
- Lack of confidence or understanding of their rights as workers
- Lack of preparation for the workplace
- Being given more dangerous jobs
- Feeling of invincibility
- Unwillingness to ask questions
- Being distracted and having other things on their mind
- Pace of work

OUTCOME 3: Identify and incorporate legislation related to the workplace

Legislation Related to Workplace Health and Safety

There are 2 levels of legislation which apply to workplace health and safety:

- 1. Federal Legislation involving the Criminal Code, affecting all employers
 - a. The Westray Bill (Bill C-45)
- 2. Specific Federal, Provincial, and Territorial legislation affecting all employers, supervisors, and employees in these regions
 - a. Alberta OHS Act
 - b. Alberta Employment Standards Code
 - c. Alberta Workman's Compensation Act

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Federal Legislation for All Employers in Canada

Employers are required by the federal government, under (former*) **Bill C-45**, to do their best to keep their employees from harm. It is also known as the **Westray Bill**, named as a result of the 1992 Westray coal mining disaster in Nova Scotia, where 26 miners were killed after methane gas ignited and caused an explosion. Despite ongoing serious safety concerns raised by employees, union officials and government inspectors at the time, the company instituted few changes. Eventually, the disaster occurred.

Bill C-45 was federal legislation that amended the Canadian Criminal Code and became law on March 31, 2004. The Bill established new legal duties for workplace health and safety, and imposed serious penalties for violations that result in injuries or death.

The Bill provided new rules for attributing criminal liability to organizations, including corporations, their representatives and those who direct the work of others (supervisors).

Bill C-45 added Section 217.1 to the Criminal Code which reads: "Every one who undertakes, or has the authority, to direct how another person does work or performs a task is under a **legal** duty to take reasonable steps to prevent bodily harm to that person, or any other person, arising from that work or task."

Bill C-45 also added Sections 22.1 and 22.2 to the Criminal Code, imposing criminal liability on organizations and its representatives for negligence (22.1) and other offenses (22.2).

***NOTE:** The Canadian federal government reuses bill numbers. Currently Bill C-45 is being used to announce Act(s) respecting cannabis and to amend the *Controlled Drugs and Substances Act*, the *Criminal Code* and other Acts.

Occupational Health & Safety in Canada

The Occupational Health and Safety Agency has fourteen jurisdictions in Canada: 1 federal, 10 provincial and 3 territorial. Federal legislation covers employees of the federal government. In each province or territory there is an act (the OH&S Act) which applies to all work places except private homes in each of those provinces or territories.

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Occupational Health & Safety (**OHS**) legislation in Canada outlines the general rights and responsibilities of employers, supervisors, and employees. This is accomplished through an **Act**, or statute, which is mandated by government.

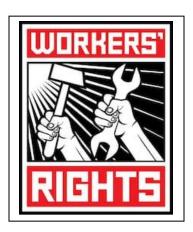
Regulations made under an Act define how the Act applies and how it will be enforced. **Codes** are a practical guide on how to achieve the accepted standards of H&S required in the regulations. Look at the chart below:

Act	Regulations	Guidelines & Codes
Establishes the Legal Authority	Outlines the Legal Rules	Outlines the Details
General Principles	Safety Requirements	Testing Procedures
Rights	Exposure Limits	Instrumentation
Responsibilities	WHMIS	Record Keeping

There is also special "**right-to-know**" legislation that applies to hazardous products. The laws and regulations under this legislation are called **WHMIS – Workplace Hazardous Materials Information System**. It provides information on hazardous products used in the workplace. WHMIS applies in all Canadian workplaces which are covered by OHS legislation.

Every employee in Canada has 3 basic rights:

- Right to refuse unsafe work
- Right to participate in the workplace health and safety activities through the Health and Safety Committee (HSC) or as a worker health and safety representative
- Right to know, or the right to be informed about, actual and potential dangers in the workplace



Source: https://www.ccohs.ca/oshanswers/legisl/responsi.html

Provincial Legislation Related to Workplace Health and Safety

Each province and territory in Canada has an Occupational Health and Safety (OH&S) Act. Each Act specifies the safety standards designed to protect the health and safety of workers. Provinces and territories also have their own Employment Standards Act and Workers' Compensation Act.

The Alberta Occupational Health & Safety Act

The **Alberta OH&S Act** covers most workers and employers, **except**:

- Workers in industries regulated by the federal government (banks, national transportation companies, television and radio broadcasters)
- · Farm or ranch operation owners, family member of owners, or non-waged individual

Chapter O-2.1 Part 1 Obligations of Work Site Parties

3. (1) Obligations of Employers

Every employer shall ensure, as far as is reasonably practicable for the employer to do so:

- a. the health and safety of workers engaged in the work of that employer, or present at the work site at which that work is being carried out
- b. that the employer's workers are aware of their responsibilities and duties under this Act, the regulations and the OHS code
- c. that none of the workers are subjected to or participate in harassment or violence
- d. that the workers are supervised by a person who is competent and familiar with the OHS Act, Regulations, and Code
- e. that H&S concerns raised by workers or the H&S committee are resolved in a timely manner



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4. (1) Obligations of Supervisors

Every supervisor shall ensure, as far as is reasonably practicable for the supervisor to do so:

- a. take precautions to protect the health and safety of every worker
- b. ensure that workers follow measures required by the Act, Regulations and Code
- c. ensure that workers use all hazard controls and wear PPE
- d. advise workers of all known hazards to health and safety
- e. report any safety concerns to employer

5. (1) Obligations of Workers

Every worker shall, while engaged in an occupation:

- a. take reasonable care to protect the health and safety of the worker and of other workers present while the worker is working
- b. co-operate with the worker's employer for the purposes of protecting the health and safety of
 - i. the worker
 - ii. other workers engaged in the work of the employer, and those not engaged in the work but present at the work site
- c. use all safety devices and wear all required PPE
- d. refrain from causing or participating in harassment or violence
- f. report concerns about unsafe or harmful work site conditions

6. (1) Obligations of Suppliers

Every supplier shall ensure, as far as it is reasonably practicable for the supplier to do so,

- a. that any tool, appliance, or equipment is safe to use
- b. that any designated substance or hazardous material that the supplier supplies is safe to use when used according to the manufacturers specifications
- d. that all tools, appliances, equipment or hazardous materials comply with this Act, its regulations and code



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9. (1) Obligations of Contractors

Every contractor shall ensure, as far as it is reasonably practicable to do so,

- a. that every work site and work procedure that is under the control of the contractor does not create a risk to the health and safety of any person
- b. compliance with this Act, the regulations and the OHS code

Source: http://employment.alberta.ca/SearchAARC/35.html

In Alberta, both employers and workers are responsible for safety in the workplace.

Work Refusal Procedure

Chapter 0-2.1 Part 4 Dangerous Work & Discriminatory Action

Right to Refuse Dangerous Work

Section 31 of the Alberta OHS Act states that:

- A worker may refuse to work or do particular work at a site if (s)he believes, on reasonable grounds, that there is a dangerous condition at the worksite, or that the work will be a danger to his or other workers' health and safety.
- 31(2) A worker who refuses to work for the reasons stated above **must promptly** report the refusal and the reasons for it to his/her employer or supervisor.

Section 31(3) then states that the **employer/supervisor must** respond to the employees' concerns(s), **do an inspection, and** whenever necessary, **fix the danger**.

Report of Dangerous Condition to an Officer

Section 32 of the Alberta OHS Act states that the following steps will be followed:

- 32(1) If the dangerous condition is not remedied, the employee may file a complaint with an officer
- **32(2)** The **officer investigates** the incident
- 32(3) If officer decides there is a dangerous condition, they issue a written report and make any order they deem necessary to correct the dangerous condition
- **32(4c)** Employee returns to work if problem solved

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Young Workers

The Occupational Health and Safety Regulation defines a "young worker" as any worker under age 25. A "new worker" can be any age and includes those who are new to the workplace or location, or facing new hazards. Young workers make up a significant part of industry growth and are twice as likely to be hurt, often by being struck by an object during increases in industry activity.



Source: http://www.energysafetycanada.com/resources/detail/108/young-workers

Many young workers aren't aware of the rights they have as an employee. It is **illegal** for an employee to be disciplined for reporting conditions that are potentially unsafe and may endanger him/her and others. Safety is especially important for teenagers as many of them are employed in their first jobs, and are often unaware of the rights and laws designed to protect them. The potential for injury is quite frightening.



Alberta Employment Standards (ES) Code & Regulations

The Employment Standards Code and Regulations establish minimum standards of employment for most employers and employees working in Alberta.

Responsibility

Employers and employees share responsibility to obey the legislation. Where employment disputes arise and the parties are unable to resolve the matter on their own, the Regulations and Code provide a fair and equitable dispute resolution mechanism that includes investigation, enforcement and appeal provisions.

Compliance

Targeted inspection programs are developed to ensure these regulations are followed when an individual complaint discloses non-compliance at a workplace. In the case of vulnerable workers or where employers demonstrate ongoing non-compliance with monetary entitlements, Employment Standards will pursue retro-active correction of unpaid earnings for all employees. Prosecution will be considered as a last resort to achieve compliance with the Code.

Minimum Standards

Alberta Employment Standards also set minimum standards for:

- Earnings
 - Employees must be paid at least once per month
 - Employees must be paid within 10 days after the end of each pay period
 - Permission for deductions including Income Tax, Canada Pension Plan Employment Insurance and Alberta Health Care premiums
 - At the end of each month, the employer must provide a statement of earnings
- Minimum wage
 - \$15.00per hour
- Hours of work
 - An employee's work hours must fall between a 12-hour period
 - If a shift is longer than 5 hours, a 30-minute break must be provided
- Days of rest
 - An employer must provide 1 day of rest each week



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Overtime pay

- Hours worked in excess of 8 per day, or 44 per week, must be calculated, and overtime paid for the greater of the 2 numbers
- Must be at least 1.5 times the regular rate
- Vacation pay, general holiday pay
 - After 1 year, employees are entitled to 2 weeks' vacation with pay
 - After 5 years, employees are entitled to 3 weeks' vacation with pay
 - The Alberta government recognizes 9 general holidays for which employees receive holiday pay

Maternity and parental leave

- Birth mothers can take up to 52 consecutive weeks of unpaid, job-protected leave...15 weeks' maternity leave and 37 weeks' parental leave
- Fathers can take up to 37 weeks' parental leave
- Adoptive parents can take parental leave regardless of the age of the child

Termination

- Length of notice depends on duration of employment:
 - One week, if the employee has been employed for more than 3 months but less than 2 years
 - Two weeks, if the employee has been employed for 2 years or more
- Employment of Individuals Under 18 Years Old
 - Adolescent Employment
 - An adolescent is a person who is 13 or 14 years old.
 - They may work as a retail clerk, in an office, as a newspaper or flyer delivery person, or in an occupation approved by the Director (of Alberta OHS). Employment must be outside of normal school hours. Parents must give written consent to the employer hiring the adolescent.
 - They may not be employed for longer than 2 hours on a school day, or for longer than 8 hours on a non-school day. They may not work between the hours of 9 p.m. and 6 a.m.
 - Young Persons' Employment
 - A young person is a person who is 15, 16, or 17 years old
 - Young persons may work at any type of job, but if employed at a retail business, restaurant, gas station, or hotel/motel, they must work with an adult between 9 p.m. and midnight, and may not work at all between midnight and 6 a.m.



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• If young persons are working in a business that is not listed above, they may only work between midnight and 6 a.m. if their parent provides written consent, or they are in the continuous presence of an adult.

*More info regarding Alberta Employment Standards may be found at: http://www.qp.alberta.ca/1266.cfm?page=1997 014.cfm&leg type=Regs&isbncln=9780779809684

Pending Changes in ES Legislation for Employees Under 18 Years Old

(these changes are currently (March 2019) approved but not yet in effect)

Definitions

- Artistic Endeavours
 - Recorded entertainment
 - Film, radio, video or television
 - Television and radio commercials
 - Voice recordings for video and computer gaming
 - Live performances/ entertainment industry
 - Theatre
 - Musical performances
- Hazardous Work (defined in reference to OHS legislation)
 - o Prohibited for any person aged 15 years or under
 - Permitted for 16 and 17 year olds only under the following conditions:
 - Employer applies for and receives permit from Employment Standards
 - Permit application includes parent/guardian consent
 - The health, safety and well-being of the individual are protected
 - The individual is supervised by a responsible adult and is adequately trained in advance
- Hazardous Work List For more examples, see https://www.alberta.ca/youth-employment-laws.aspx
 - Confined spaces; excavating and tunneling
 - Crowd control or security
 - Garage or automobile repair shop; wrecking or demolition
 - Boiler or engine room
 - Heights of 3 metres or more; residential roofing
 - Working alone where help is not readily available

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Employees 13 to 15 Years of Age

- May be employed in: light work, an artistic endeavor, or any other type of work authorized under a permit issued by the Director of Employment Standards, that is not considered "hazardous work". (permit includes parental consent)
- Restrictions on hours of work:
 - o May not work during school hours unless enrolled in an off-campus program
 - Hours of work restrictions for 13 14-year-old employees remain the same
 - o 15-year-old employees cannot work between midnight and 6 a.m.

Employees 16 to 17 Years of Age

- Eligible to work in all types of work except hazardous work. They can only do hazardous work if:
 - It has been authorized under a permit from Employment Standards
 - It is part of an approved course of study such as the Registered Apprenticeship Program (RAP)
- Restrictions on hours of work in retail or hospitality:
 - Must be supervised by an adult if working between 9 p.m. and midnight
 - o Cannot work between midnight and 6 a.m.
- Restrictions on hours of work in jobs that are not in retail or hospitality:
 - Can only work between midnight and 6 a.m. with parent/guardian consent and adult supervision

Entitlements vs. Benefits - What is the Difference?

The basic *Employment Standards Code* requirements are **entitlements**. They are something workers are entitled to get and employers must give (eg. minimum wage, hours of work, days of rest, etc.) When employers offer **more** than the basic entitlement—for example, by adding to the basic vacation time required by the Code—they are providing employers with greater **benefits**.



Alberta Workers' Compensation Act

The Workers' Compensation Act of Alberta protects employees from the financial hardships associated with work-related injuries and occupational diseases. It provides a worker with immediate compensation benefits, including money paid for lost wages, health care, and other costs related to his or her workplace-related injury or illness. In exchange, the worker loses the right to sue his or her employer for those injuries or illnesses. This act enabled the Workers' Compensation Board (WCB) to be established.

Principles

- 1. No-fault Insurance A worker injured at work and employed in an industry protected by the act can get benefits. It does not matter who caused the incident. The injured worker and employer cannot sue each other.
- 2. Collective Liability All employers who operate in industries covered by the Act pay the cost of the insurance.
- 3. Fair Compensation Workers receive benefits based on the type of work-related injury, the seriousness of the injury and how it affects their ability to earn wages.
- 4. First Payer The WCB is responsible for compensating injured workers for work-related injuries even though they may receive benefits from other sources.
- 5. Exclusive Jurisdiction Across Canada, each WCB governs, manages and decides matters related to its province's Workers' Compensation act.

Injured at Work

If you are injured at work you need to follow these steps:

- 1. **Tell your employer**. After you report the injury your employer has 72 hours to send an Injury Report form to the WCB.
- 2. **See your doctor** and inform them that you were hurt at work. The doctor has 48 hours to file a report with the WCB.
- 3. **Talk to your Off Campus supervising teacher**. They will help you complete a Worker's Report of Injury. Your supervising teacher will then ensure that the report is faxed to the WCB. The WCB staff will review the forms to see what benefits and services you may be able to receive. If you aren't happy with the WCB's decision you can appeal it.



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Under the Workers' Compensation Act, an **accident** is defined as an injury incident caused by:

- a) Physical or natural causes (lightning)
- b) Willful and intentional acts by someone other than the worker

In a national study completed by the Institute for Work and Health (IWH), voung workers were often found to accept workplace injuries as "part of the job" because they were frequent and minor. They determined that this perspective is, for the most part, the result of young workers' perceived inability to improve or alter their working conditions. "Rather than seeing young workers as having faulty or distorted perceptions of risk, we suggest that, by virtue of their subordinate position, young workers have little choice but to accept certain injuries as part of the job" (Breslin et al., 2007).

- c) Disablement (eg. A worker has a seizure on the job and hurts his/her head
- d) Conditions caused by occupational diseases

The WCB considers these definitions to determine whether workers will be able to receive benefits when they are injured and to help employers decide what type of workers' compensation coverage is needed.

Benefits

WCB helps workers when they are inured on the job by providing:

- 1. **Wage replacement** Disabled workers can receive up to 90 per cent of their net pay up to a maximum amount.
- 2. **Medical Expenses** All medical expenses related to the workplace accident are paid by the WCB.
- 3. **Return to work planning** WCB case managers talk to injured workers, their employers and health care providers. The managers then make decisions about the type of work the injured worker can do, whether or not workers can return to the job they were doing before being injured.
- 4. **Vocational services** If injured workers cannot return to their jobs because of their injuries, the WCB helps these workers learn other types of work by providing job search training, or academic and job training.
- 5. **Fatality benefits** If a worker dies from workplace injuries, the WCB will help pay funeral costs.

Most **industries** are required by law (Compulsory Coverage) to have workers' compensation coverage for their workers. All employers in compulsory industries must open a WCB or similar account within 15 days of employing their first worker(s). The WCB charges the employers



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premiums based on the total wages of their workers for the year and the risk of injury in their industry.

Employers in industries not covered by the WCB Act can apply to have workers' compensation insurance protect their workers (Voluntary Coverage). **Business** owners are not covered by the WCB for work-related injuries. They can buy workers' compensation insurance. This type of insurance is called Personal Coverage.

OUTCOME 2: Recognize and incorporate hazard identification, assessment and control

Hazard Identification, Assessment, Control

Workplace safety has three basic steps:

- 1. Hazard identification (find it)
- 2. Hazard assessment (how serious is it)
- 3. Hazard control (what to do about it)

Hazard Identification

An important part of workplace safety is being able to **identify hazards** before someone gets injured. Identifying the hazard is the first step in reducing risk or injury.

A hazard could cause an accident or incident which results in injury or illness to people and/or damage to property.

What is a Hazard?

A hazard is any situation, activity, condition or thing that may be dangerous to the safety or health of workers. Basically, it is anything that can cause harm.

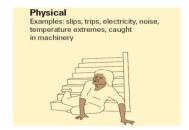
- Some hazards can be **acute** they have an immediate effect, such as being hit by a truck.
- Other hazards are considered **chronic** repeated exposures, over time, can eventually cause an effect, such as hearing loss after repeated overexposure to noise.

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Types of Hazards

There are **5 types of hazards**:

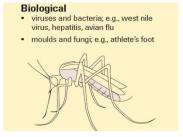
1. Physical – This includes using equipment, machine and tools, working in extreme temperatures, moving things and personal movement. Examples are: Noisy equipment, vibrating equipment, falling objects, working from heights, objects lying on the floor, overhead electrical cords, etc.



2. Chemical – Includes chemical mists, vapours, gases, dusts or fumes. Examples are: oilbased paint, using hazardous materials, being exposed to asbestos, working in an area with lots of dust or using strong cleaning products.



3. Biological – Includes insects, fungi, mold, viruses and working with plant material. Examples are: insect stings, plants like poison ivy, contact with other people or things that are carrying viruses or bacteria.





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4. Psychosocial (Mental Health) – Includes items like workplace-induced and other stressors, excessive work hours and/or shift work, challenging personal/interpersonal relationships, discrimination and harassment.



5. Ergonomic (the "fit" between a worker and his equipment or environment)Includes inappropriate job and workstation design, improperly adjusted work benches, desk, keyboards, poor lighting, and repetitive strain.



Why Hazard and Risk Assessment?

New hazards can appear at any time, even after hazards have been identified, assessed, and controlled. This is because equipment wears out, work conditions change, and workers may leave equipment lying around.

What is a Risk?

A risk is the chance of injury, harm or loss.

Once a hazard is identified, the **risk factor** for that hazard can be assessed by figuring out **how likely** it is that the incident will occur and if the incident occurs, **how bad** will be the injury, harm

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or loss. If the **result** of an injury incident needs only minor First Aid, then the risk factor is low. If it leads to a serious injury or death, then the risk factor is high.

Hazard Assessment

Once hazards have been identified, an assessment or analysis must be completed. A hazard assessment includes **finding hazards** that could cause accidents in the workplace, **judging the degree of danger** that the hazard poses to workers, and **developing a plan to reduce or remove a hazard** before it causes accidents.

The Job Hazard Analysis

Job Hazard Analysis (JHA) is a technique that focuses on **job tasks** as a way to identify hazards before they occur.

It focuses on the relationship between the worker, the task, the tools, and the work environment. Ideally, after uncontrolled hazards are identified, accepted health and safety practices and principles will be integrated into the task or job operation to eliminate or reduce the hazard to an acceptable risk level.

Four basic stages in conducting a JHA are:

- selecting the job to be analyzed
- breaking the job down into a sequence of steps
- identifying potential hazards
- determining preventive measures to overcome these hazards

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Purpose of a Job Hazard Analysis

The purpose of a JHA is to find answers to the following questions:

- o What can go wrong?
- o What are the consequences?
- o How could it arise?
- o What are other contributing factors?
- o How likely is it that the hazard will occur?

What Jobs Are Appropriate for a Job Hazard Analysis?

A JHA can be conducted on many jobs in a variety of workplaces. Priority should go to the following types of jobs:



- Jobs with the highest injury or illness rates
- Jobs with the potential to cause severe or disabling injuries or illnesses, even if there is no history of previous accidents
- Jobs in which one simple human error could lead to a severe accident or injury
- Jobs that are new or have undergone changes in processes and procedures (eg. company gets a new piece of equipment)
- Jobs complex enough to require written instructions

*Example: Grinding Iron Castings (Metal Shop) *FROM OSHA - U.S. DEPARTMENT OF LABOR



Job Steps

- Step 1. Reach into metal box to right of machine, grasp casting, and carry to wheel.
- Step 2. Push casting against wheel to grind off burr (rough edge).



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Step 3. Place finished casting in box to left of machine.

SAMPLE JOB HAZARD ANALYSIS FORM

Job Location: Metal Shop	Analyst: Joe Safety	Date:
Task Description:	Hazard Description:	Hazard Controls:
Worker reaches into metal box to the right of the machine, grasps a 15 pound casting and carries it to grinding wheel. Worker grind 20 to 30 castings per hour.	While picking up a casting, the employee could drop it onto his foot. The casting's weight and height could seriously injure the worker's foot or toes.	 Remove castings from the box and place them on a table next to the grinder. Wear steel-toe shoes with arch protection. Change protective gloves that allow a better grip. Use a device to pick up castings.
	Castings have sharp burrs and edges that can cause severe lacerations.	1. Use a device such as a clamp to pick up castings. 2. Wear cut-resistant gloves that allow a good grip and fit tightly to minimize the chance that they will get caught in grinding wheel.
	Reaching, twisting, and lifting 15-pound castings from the floor could result in a muscle strain to the lower back.	1. Move castings from the ground and place them closer to the work zone to minimize lifting. Ideally, place them at waist height or on an adjustable platform or pallet. 2. Train workers not to twist while lifting and reconfigure work stations to minimize twisting during lifts.
Repeat for each job step.		

***An important point to remember is to keep the steps in their correct sequence. Any step which is out of order may miss serious potential hazards or introduce hazards which do not actually exist.

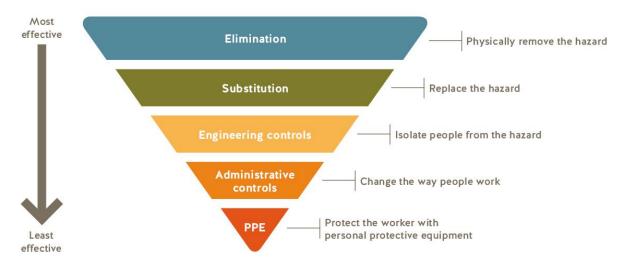
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Once the JHA has been completed, it is important to develop a plan to either remove or reduce a hazard before it causes accidents. **Hazard elimination** means to remove the hazard. **Hazard control** means having a plan to reduce the risks of a hazard causing injury, harm or loss.

Hazard Controls

When considering how to reduce the risk of hazards, there's a certain order you should follow. This is called the **hierarchy of controls**. Note that while the controls are listed in order of effectiveness, all types of controls should be considered. They often work best in combination.

Hierarchy of controls



 $From\ Worksafe\ BC:\ \underline{https://www.worksafebc.com/en/health-safety/create-manage/managing-risk/controlling-risks}$

Elimination – (the process of removing the hazard from the workplace), is the most effective way to control a risk because the hazard is no longer present. It is the preferred way to control a hazard and should be used whenever possible.

Substitution – (when a new substance or process that is less hazardous is used instead of another, more hazardous one) is similar to elimination, as it removes the first hazard from the workplace.

Elimination or substitution are always the best choice, but are often not possible. If not, then the 3 types of hazard controls must be used.

Listed in order from most to least effective:

- 1. **Engineering controls** These controls involve changing the working conditions to reduce the source of exposure, and are thus the most effective. They include:
 - <u>Enclosure of the hazard</u> eg. using enclosed cabs, enclosures for noisy equipment, setting up barriers to keep workers out of dangerous areas.
 - <u>Isolation of the hazard</u> eg. using machine guards, blast shields, welding curtains, interlock access, or other means.
 - Reduction of the hazard eg. using exhaust ventilation.

These controls are considered the best as they isolate people from the hazard. This type of control is implemented at the source...it provides a barrier, or changes the hazard, or changes the layout of the workplace (to reduce an ergonomic hazard).

- 2. **Administrative controls (work practice controls)** These direct the tasks of workers, and may reduce the amount of contact the worker has with the hazard, but do not remove it. These controls are implemented along the path from the hazard to the worker, and are less effective than engineering controls. Examples include:
 - training workers to work safely, and training workers on the proper use of equipment, tools and materials.
 - monitoring the use of highly hazardous materials.
 - written operating procedures, work permits, and safe work practices.
 - exposure time limitations (most commonly for temperature extremes and ergonomic hazards),
 - alarms, signs, warnings, and use of a "buddy system".
- 3. **Personal Protective Equipment (PPE) (basic controls)** These controls are used when engineering controls are not possible or do not totally eliminate the hazard, while engineering controls are being developed, when safe work practices do not provide sufficient additional protection, or during emergencies when engineering controls may not be feasible/possible. This type of control is implemented at the level of the work(er) and is a "control of last resort" easiest to control, but the least effective.

Examples include:

 hard hats, safety glasses or goggles, respirators, hearing protection, steel toed boots, gloves, and protective clothing.

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OUTCOME 1: Describe and explain workplace health and safety management systems

Workplace Health and Safety Management Systems (HSMS)

Legislation In Canada requires that employers are required to have appropriate arrangements in place for the management and control of health and safety at work. In order to achieve these requirements, employers need to have an effective occupational health and safety management system that it is clearly defined and well documented. There are a number of occupational health and safety management systems which can be applied. Alberta favours a system that contains eight elements.

Health and safety at work is an issue affecting all businesses. Implementing an occupational health and safety (OHS) system is now a legal requirement in many countries. How do you keep up with legislation and set up a system that protects you and your company? The answer is to introduce a management system that can reduce the risk of accidents, litigation and downtime—a process to minimize the incidence of injury and illness in the workplace.

An Occupational Health and Safety Management System provides a framework for managing OHS responsibilities so they become more efficient and more integrated into overall business operations.

OHS Management systems are based on standards, which specify a process of achieving continuously improved OHS performance and complying with legislation.

The positive impact of introducing occupational safety and health (OSH) management systems at the *organization* level, both on the reduction of hazards and risks and on productivity, is now recognized by governments, employers and workers.

Occupational safety and health, including compliance with the OSH requirements which follow national laws and regulations, are the responsibility and duty of the employer. The employer should show strong leadership and commitment to OSH activities in the *organization*, and make appropriate arrangements for the establishment of an OSH management system. The system should contain the main elements of policy, organizing, planning and implementation, evaluation and action for improvement.

What can be done to reduce incidents in the workplace?



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In Alberta an occupational health and safety management system is recommended. The premise is that when employers and workers build effective health and safety management systems in their own workplaces, the human and financial costs of workplace injuries and illnesses will be reduced. Supporting health and safety management systems leads to a larger reduction in injuries and illnesses than regulatory enforcement alone.

What Is a Health and Safety Management System?

A health and safety management system (**HSMS**) is a process to minimize the incidence of injury and illness at the workplace. The scope and complexity of a health and safety management system varies, depending on the type of workplace and the nature of the work performed.

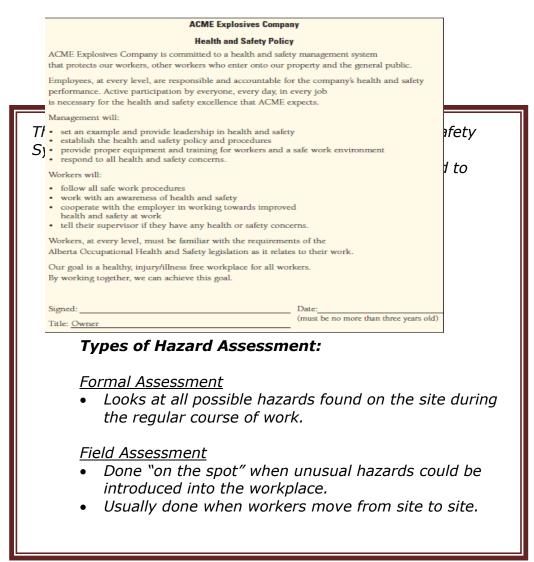
The purpose of the system is to identify and control hazards, on an ongoing basis, to protect the health and safety of workers.

In Alberta, the **Partnerships in Health and Safety**'s occupational health and safety management system format contains **eight elements**:

1. Management Commitment and Policies – A written health and safety policy stating the company's commitment, the overall goals and objective for the program and the responsibilities of management, workers, visitors and contractors.

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2. Identify and Assess Hazards – Evaluate all equipment, machinery, work areas and work processes to identify and analyze all potential sources of harm. A record should be kept along with the degree of risk and level of potential exposure for workers.

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3. Hazard and Risk Controls – Control measures should be developed for each hazard identified. Typical controls include, elimination, substitution, engineering, administrative and basic point of contact (Personal Protective Equipment)

While conducting a workplace inspection, hazards will be identified, as will be the controls in place to reduce risk of injury. Ideally, when a hazard is identified, it should be eliminated by removing it completely from the workplace. Unfortunately, this can't always be done.

Every living place and workplace contains hazards. Some hazards can be eliminated; however, for most hazards, the best that can be done is to control them.

Controlling a hazard means reducing the risk of that hazard causing:

- Injury to people
- Damage to property
- Loss of productivity and profits



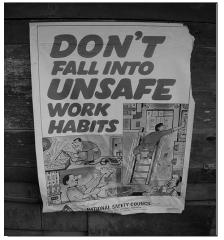
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Under the Alberta OHS Code, Part 2 - Section 7 & 8, employers must:

- assess a work site and identify existing or potential hazards **7(1)**
- prepare a written and dated hazard assessment, including the methods used to control or eliminate the hazards identified. A properly completed checklist is acceptable as a written hazard assessment **7(2-3)**
- involve workers in the hazard assessment, where possible 8(1)

An employer must make sure that a hazard assessment is done:

- at reasonably practicable intervals to prevent the development of unsafe and unhealthy
 - working conditions 7(4a)
- when a new work process is introduced 7(4b)
- when a work process or operation changes **7(4c)**
- before the construction of a new work site. **7(4d)**



4. Workplace Inspection Program – A regular inspection program is important. Inspections provide important information about hazards or potential hazards that have not be noted before. It also ensures that controls already put into place are working.

Workplace Inspections

The **purpose** of a workplace inspection is to identify hazards that could endanger the health or safety of anyone in the workplace. It can also determine whether established procedures are being followed.

An inspection achieves its purpose by seeking answers to four questions:

- Is a hazard or potential hazard present in the workplace?
- Is any worker or other person exposed or likely to be exposed to the hazard?
- Has anyone suffered injury or a health effect as a result of this exposure, or is anyone likely to do so?

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Are established procedures being followed?

Action can then be taken to control or remove the hazard in order to prevent work-related accidents, disease or injury.

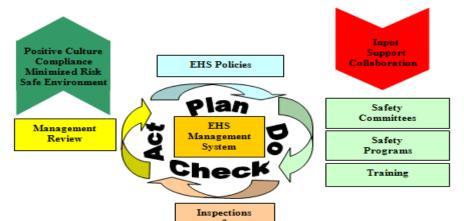
Planned inspections must be carried out at regular intervals both by the employer and by designated members of the joint health and safety committee in a workplace. They may cover the entire workplace or cover different work areas on separate occasions.

Inspections are not only for industrial workplaces, mines and construction sites. **Any** kind of workplace can be involved. Laboratories, offices, warehouses and stores may all contain hazards that can be identified by inspection. The workplace might be a bus moving along city streets, or it might be a number of power line sites visited by a hydro line maintenance crew.

What makes an inspection effective?

An effective inspection is a procedure made up of four stages:

- preparation
- inspection
- review and reporting
- follow-up



5. Worker Competency and Training – Worker training is an essential part of an effective training program. Workers need to know how to do their jobs safely and without risk to their health.

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- Well trained workers not only perform their jobs safely, they are also more productive.
- New worker orientation is especially important, since new workers generally experience the highest rate of injuries, usually within the first 6 months.
- **6. Emergency Response Planning** A good emergency response plan that is in place and practiced regularly can reduce the risk of injury and loss.

The employer must also think about potential emergencies which could occur in his/her organization. (S)he must consider:

- Type of business
- · Location of work site
- Weather extremes

Reviewing the Hazard Assessment is a good place to start when developing an Emergency Response Plan.

Standard items that should be included in an Emergency Response Plan:

- Emergency meeting points (muster point)
- First Aid response

The OHS code (Part 11 & Schedule 2) lays out First Aid requirements

Employers must consider:



- How hazardous is the work
- Travel time from work site to health care facility
- Number of workers on each shift

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7. Incident Reporting and Investigation – When an incident occurs, it is important that it be reported to a supervisor. The supervisor will then investigate the cause, make sure previously uncontrolled hazards do not remain a risk, help to prevent the recurrence of similar incidents, and determine if training or changes in control methods need to be improved to make the workplace safer or healthier.

Management knows the workers and the conditions they work in, therefore, much of the information can be provided by the supervisor. Management must be involved with all investigations, especially those that result from a major loss or a high potential incident. If it is a high loss situation, government, the public, and the owners will also be involved.

Effective investigations should include:

- Describing what happened witnesses may provide conflicting evidence
- Identifying or supposing the causes of the incident
- Determining the risks some basis for establishing whether the incident will occur again and the potential for major loss must be included
- Identifying controls new or improved controls must be identified and put in place
- **Defining trends** there should be enough detailed information in the report so trends can be identified by looking at all injury reports.



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Keeping Records is important to monitor the effectiveness of the program.

8. HSMS Program

Communication is important:

- 1. Letting workers know what the Health & Safety Management System (HSMS) is all about.
- 2. Workers providing feedback to management about Health & Safety issues.

Corrective Action: Senior management must develop a follow up system to ensure action items are completed in a timely manner.

Program Evaluation will show where changes are required.

Administration – Administration ensures that all parts of the system are properly documented and communicated to employees.

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A **Certificate of Recognition (COR)** is awarded to employers who develop health and safety programs that meet established standards. Certificates are issued by Alberta Employment and Immigration and are co-signed by Certifying Partners

A **COR** recognizes that the employer's health and safety management system has been evaluated by a certified auditor and found to meet Partnerships standards.

Effective health and safety management systems have been shown to have an impact on reducing injuries. Eliminating the social and financial effects of injuries can strengthen the business success of participating employers.

Achieving and maintaining a valid **COR** is required for a company to earn a financial incentive through the WCB Partnerships in Injury Reduction (PIR) program.