Best Practice Guidelines:

Effective Worker Participation in Hazard Assessments

A Project of the Alberta Workers' Health Centre

Alberta Workers'
Health Centre

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Alberta Workers' Health Centre, December 2015

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Introduction

Effective participation by workers in the process of hazard identification, elimination and control is essential for effectively identifying and eliminating or reducing the workplace hazards that can lead to injury or illness.

Alberta law requires employers to look for and fix hazards – do a hazard assessment – with worker participation. This is a systematic method to look for work-related hazards and figure out what "fixes" are needed to protect workers' health and safety. That has been the law since 2009.

Finding and fixing hazards is an essential part of any health and safety prevention program. Effective programs prevent people from getting sick, hurt, or dying because of their job. They are required in many health and safety laws in Canada and elsewhere.

Hierarchy of Elimination and Control

The best "fixes" prevent injuries or illnesses by getting rid of the hazard. Less effective methods only control the hazards and reduce their harm to workers; they do not eliminate the hazard.

Workers who may be affected by the hazards must be part of these assessments. The participation requirement goes further: employers also must involve those workers in coming up with, and implementing, the "fixes".

Why Involve Workers?

Responsible employers know that worker participation is a key part of a good hazard assessment and the prevention measures that follow. Studies show that effective worker participation leads to healthier and safer jobs and workplaces. Worker participation is part of the health and safety laws in many countries. A common way to do this is to have joint health and safety committees (usually when there are at least 20 employees) or representatives.

Alberta law says workers affected by hazards must be involved in identifying them and in fixing them.

What the Alberta Code is missing is a clear set of ways that this process of hazard assessment, elimination and control should happen.

Best Practices For Worker Participation

These Guidelines recognize that some forms of worker participation are more effective than others. These Guidelines are designed to promote effective and meaningful worker participation in hazard assessments.

We set out with a goal of providing a set of Best Practices for Worker Participation that is based in research, not myth. The research helped us to understand the barriers to worker participation as well as the practices that overcome those barriers. The research documents have been included in these Best Practice Guidelines so that you can better see why we have included the Best Practices that we did.

This guide provides workers, employers, and inspectors with practical advice on practices that promote effective worker participation.

Considering the wide range of hazards and the very different circumstances and conditions under which they occur, the advice will be general, providing overall guidance on the kinds of practices that work. How you apply these Best Practices in any particular circumstances will depend on those circumstances and the degree to which workers are able to participate.

This advice is drawn from research, recommended practices and from the experience of those in the field of OHS.

Background

In the spring of 2012 the Alberta Workers' Health Centre embarked on a process of applied research with the goal of giving Alberta workers and employers better tools for engaging in the process of workplace hazard assessment and the elimination or control of those hazards.

A key element of any such process involves full and active engagement of workers themselves. Thus, the focus of the work over the next 18 months was to research the barriers to such full and active engagement.

The process involved a variety of primary and secondary research methods: field observations of a variety of workplaces; face to face interviews with workers, supervisors, health and safety consultants and other 'experts'; focus groups with workers; a survey of over 2000 workers from across Alberta; reviews of published research articles; reviews of documents by health and safety agencies, and industry and labour organizations from across the world. Our goal was to identify the impact of worker participation and to identify the best ways to involve workers in occupational health and safety – so that it made a difference.

We then identified several key 'truths'. One 'truth' is that employers can choose to make their workplaces safer all by themselves–by designing safer and healthier processes and using healthier and safer tools, equipment and substances. This can happen even without strong worker participation. It will substitute for

all manner of program or process. If employers chose to do this by themselves there would be no need for these guidelines.

A second 'truth' is that this process of workplace improvement is much more likely to take place if there is active, engaged and informed participation of workers.

How To Use These Guidelines

These Guidelines are designed to be downloaded for print or used directly from the website or as a pdf on your computer or smartphone.

Individual pages, including the Resources, can be downloaded or printed.

The Structure of these Best Practice Guidelines

The Guidelines contain 7 Modules

RESEARCH (Module 1.0)

This module includes research documents that helped us in our work of creating the Best Practices. They capture a huge amount of new and pre-existing data and analysis in this field. Our research processes shined a light on barriers facing workers and front line supervisors from being informed and engaged in the process of hazard identification, elimination and control.

WHY? (Module 2.0 and Module 2.1)

The first two modules explain why it is important for effective hazard assessment processes to be used and why we need effective worker participation in the processes of workplace health and safety, particularly in the process of hazard assessment, elimination and control. These modules summarize the knowledge in ways that may help you understand and make your own case for examining your own hazard assessment processes and improving them if necessary.

WHAT? (Module 3.0)

The next module explains what hazard assessment processes are. It includes the minimum legal requirements for hazard assessments in Alberta, including the requirement for a new assessment when work changes. This module contains the best practices for doing hazard assessments.

HOW? (Module 4.0 and Module 4.1)

These two modules identify barriers to worker participation in the hazard assessment process, and present best practices for reducing or eliminating those barriers and effectively including workers in these processes.

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RESOURCES (Module 5.0)

The Resources Module contains links to a number of hands-on tools, practices and additional research that can be used to make your workplace safer and healthier by improving the frequency and quality of worker participation in the process of hazard identification, elimination and control.

The details of some of the research documents are not directly referenced in our Guidelines. We thought it would make the Guidelines too difficult to read and use. We do think that they are important contributions to the discussion about how to make Alberta (and other) workplaces safer and healthier.

Help us to Improve these Guidelines

These Best Practice Guidelines are meant to be a work in progress. We see this as a strength, in that we can improve them by including more of your experiences into future versions.

Comment

We encourage readers and users of this document to comment on it. These comments will be reviewed as a part of our editorial process for consideration in our next version.

Send us your stories

In the process of researching these Guidelines we heard many different stories from workers and supervisors about what they thought worked and what didn't in their own hazard assessment processes. These stories helped give us confidence that these guidelines were based in the Alberta reality. Some comments and stories are noted alongside the Guidelines to help illustrate a key point.

One of the ways in which you can comment on the Guidelines, or a particular point in the Guidelines is by telling us how this aspect or suggestion is used in your workplace. Or you can tell us about your own participation in the processes of Hazard Assessment, Elimination and Control where you work.
You can email your comments and stories to us at:
participation@workershealthcentre.ca

Several key persons made strong contributions to the content of these Guidelines.

A special thanks to all of those workers, front line supervisors, and union and employer health and safety reps who shared with us their work and their experiences and opinions in the research and revisions of this work.

Our Goal - Turning tragedy into better work

Funding for these Guidelines and the research that went into them was made possible by the deaths of two Alberta workers, arising from two separate workplace tragedies. Under Section 41.1 of the Alberta Occupational Health and Safety Act, so-called 'Creative Sentencing" allows for the sentences of those convicted under the OHS Act to be diverted into programs or actions which are aimed at preventing further workplace injury or illness. Thanks to Marshall Hopkins for assisting us with this funding process.

We wish to acknowledge those workers' families whose names are withheld out of consideration for the families.

Finning International, acting as a contractor for Suncor Energy, was convicted of a July 8, 2008 workplace fatality.

Bonterra Energy Corp. was convicted under the Alberta Occupational Health and Safety Act of a May 14, 2009 workplace fatality.

We can only hope that the production and use of these guidelines will help prevent workplace tragedy.

About the Alberta Workers' Health Centre:

The Alberta Workers' Health Centre is a registered charitable, non-profit organization that supports all workers, unionized and non-unionized, who need assistance to help make their workplaces healthier and safer. Since 1983 it has done this through programs of education and training; research and information; assessment and support for workers across Alberta.

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The Guidelines are organized into the following modules:

Module 2.1: Hazard Assessments – Why It Matters

Module 3.0: Hazard Assessments – What Are They?

Module 5.0: Index of Resources

1.0 Research

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This module includes two research documents that helped us in our work of examining barriers facing workers from being informed and engaged in the process of hazard identification, elimination and control. Together, they capture a large amount of new and pre-existing data and analysis in this field, and inform the other modules in the Best Practice Guidelines.

They draw on field observations of a variety of workplaces; face to face interviews with workers, supervisors, health and safety consultants and other 'experts'; focus groups with workers; a survey of over 2000 workers from across Alberta; reviews of published research articles; reviews of documents by health and safety agencies, and industry and labour organizations from across the world.

A. Worker Participation in Hazard Assessments: Barriers and
   Opportunities in Alberta Workplaces
      Bob Barnetson
B. Worker Participation in Hazard Assessments:
   Recommended Practices
      Darren Puscas

WORKER PARTICIPATION IN HAZARD ASSESSMENTS

Barriers and Opportunities in Alberta Workplaces

Dr. Bob Barnetson

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Athabasca University

Worker Participation in Hazard Assessments:

Barriers and Opportunities in Alberta Workplaces

May 2013

Dr. Bob Barnetson

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Copies are available online at: www.workershealthcentre.ca

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Executive Summary

Alberta's *Occupational Health and Safety Code* requires employers to undertake hazard assessment and control activities and to engage workers in these processes. This paper identifies opportunities for and barriers to effective worker participation in the hazard assessment process in order to inform the development of a recommended practices guide for use by employers, government, unions and workers. The opportunities and barriers identified in this paper draw upon a review of research as well as Alberta interviewer-specific interviews, field observation and survey data.

Worker participation is central to hazard assessment. At the most basic level, worker participation is a right set out in provincial legislation as well as international agreements. Worker participation in occupational health and safety (OHS) activities has been shown to be effective in improving health and safety. In addition, worker participation is necessary to balance employers' tendency to trade worker safety for profitability.

A 2012 survey of 2000 workers by the Alberta Workers' Health Centre (AWHC) suggests employer compliance with Alberta's hazard assessment and control requirements is uneven. Survey data indicated that 36% of employers seldom or never conducted hazard assessments. Only 19% of workers reported that their employer always involved them in the hazard assessment process, and approximately 30% of workers reported not being told about workplace hazards, including hazards that arise for changes in materials and processes. Few workers (18%) were moderately or very interested in being involved in OHS primarily because of lack of pay and influence. On the other hand, those who were involved in OHS were substantially more likely to be involved in hazard assessment, make a complaint and see action taken.

A number of recurring barriers to participation were identified in the literature review. The prevalence of complex subcontracting relationships results in a high percentage of small workplaces and piece-rate compensation systems that, in turn, impede worker participation. Employers' power to define what is considered a hazard, a tendency to blame workers for their injuries, pace of work and limited training may also create barriers to worker participation. Finally, the vulnerability of some workers to employer pressure and a culture of silence around workplace safety may limit worker participation in hazard assessment and control. In this context, worker concern over pay and lack of influence weakens the willingness to participate.

Strategies that might increase worker participation in hazard assessment and control in Alberta include:

- employers consistently performing hazard assessments and involving workers in them combined with state enforcement activity to identify and target non-compliant employers,
- employers creating formal OHS structures (e.g., joint health and safety committees) and allocating adequate working time for workers to participate in hazard assessment activities,
- employers creating systems to identify instances when work has changed and a new hazard assessment is required,
- employers providing high-engagement worker and supervisor training in hazard assessment, including language/literacy-appropriate materials and periodic retraining and/or reinforcement,
- employers taking action to control identified hazards and communicating such action to workers, and

- employers stopping reprisals for hazard identification and disentangling hazard assessments from disciplinary matters.

Some workplace characteristics create additional challenges to effective worker participation in hazard assessment. Altering payment schemes and bid requirements may improve the opportunity and willingness of workers in small firms to participate in hazard assessment and control. Making available outside OHS resources and enforcing employer compliance increase the opportunity, capacity and willingness of workers in small firms to participate in hazard assessments. Vulnerable workers (e.g., temporary foreign workers, precarious workers) may benefit from meaningful state enforcement of employers' obligations to conduct hazard assessments. Greater and more positive employer responsiveness to worker concerns may also reduce the risk workers associate with raising safety concerns. Mandating joint health and safety committees (JHSCs) would also create a structure through which vulnerable workers could route concerns about workplace hazards.

Introduction

Alberta's *Occupational Health and Safety (OHS) Code* requires employers to conduct hazard assessments and to engage workers in this process. Yet there are troubling questions about the degree to which Alberta workers meaningfully participate in workplace hazard assessment and control practices. Consider this fatality:

> On July 8, 2008, 40-year-old Finning International Ltd. employee was struck and killed by a large dump truck at an open pit oil sands mine near Fort McMurray, Alberta.[i] Factors contributing to the worker's death include the employer failing to repeat a hazard assessment when a work process changed and failing to include affected workers in the hazard assessment and control process.

This incident suggests (and subsequent research substantiates) that the practice of employee participation in hazard assessment and control may fall short of legislative requirements. This research paper identifies the barriers to and the opportunities for meaningful worker participation in the hazard assessment process, including hazard assessments that are required when work changes.

This mixed-methods inquiry includes an examination of the literature on worker participation in OHS activities and hazard assessment as well as Alberta specific interviews, field observation and survey data. The results are presented in four main sections: worker opportunities to participate, worker capacity to participate, worker willingness to participate, and challenges to worker participation when work changes.

Hazards, Assessment and Control

Alberta's *Occupational Health and Safety Code* contains Canada's most detailed and prescriptive requirements around hazard assessment and control.[ii] Alberta requires employers to carry out a hazard assessment of a work site prior to the commencement of work and whenever work changes:

> 7(1) An employer must assess a work site and identify existing and potential hazards before work begins at the work site or prior to the construction of a new work site.

> 7(2) An employer must prepare a report of the results of a hazard assessment and the methods used to control or eliminate the hazards identified.

> 7(4) An employer must ensure that the hazard assessment is repeated

> > (a) at reasonably practicable intervals to prevent the development of unsafe and unhealthy working conditions,
> > (b) when a new work process is introduced,
> > (c) when a work process or operation changes, or
> > (d) before the construction of significant additions or alterations to a work site.

When activities and conditions change frequently (e.g., moving between locations, working outdoors), employers may rely upon a field-level hazard assessment done at the beginning of each day or job.[iii]

Alberta requires worker participation in the hazard assessment and control process. Employers must also inform workers about any hazards identified and the hazard elimination or control strategies the employer has implemented:

> 8(1) An employer must involve affected workers in the hazard assessment and in the control or elimination of the hazards identified.

8(2) An employer must ensure that workers affected by the hazards identified in a hazard assessment report are informed of the hazards and of the methods used to control or eliminate the hazards.

Finally, Alberta stipulates the hierarchy of controls employers must use when eliminating or controlling a hazard:

9(1) If an existing or potential hazard to workers is identified during a hazard assessment, an employer must take measures in accordance with this section to

(a) eliminate the hazards, or
(b) if elimination is not reasonably practicable, control the hazard.

9(2) If reasonably practicable, an employer must eliminate or control a hazard through the use of engineering controls.

9(3) If a hazard cannot be eliminated or controlled under subsection (2), the employer must use administrative controls that control the hazard to a level as low as reasonably achievable.

9(4) If the hazard cannot be eliminated or controlled under subsections (2) or (3), the employer must ensure that the appropriate personal protective equipment is used by workers affected by the hazard.

9(5) If the hazard cannot be eliminated or controlled under subsections (2), (3) or (4), the employer may use a combination of engineering controls, administrative controls or personal protective equipment if there is a greater level of worker safety because a combination is used.

Alberta's requirements around hazard assessment and control are more detailed and stringent than those found in British Columbia,[iv] Ontario,[v] Quebec,[vi] Saskatchewan[vii] and the federal jurisdiction.[viii] Alberta's definition of a hazard is also broad: "a situation, condition or thing that may be dangerous to the safety or health of workers".[ix] There are many different kinds of hazards, which vary depending upon the kind of work being done.[x] While there is no definitive typology of hazards, a useful categorization of hazards includes:

- Physical hazards are unsafe conditions that can lead to injury and illness. These include the structure of the workplace (e.g., machinery, electricity, heights, working surfaces), workplace events (e.g., fire, falling objects), and workplace conditions (e.g., noise, vibration, temperature, radiation, air quality).

- Biological hazards stem from working with animals, plants and people. They include bacteria, viruses, and fungi sometimes transferred via contact.

- Chemical hazards include liquid, solid and gaseous substances such as acids and poisons and substances that could lead to fire or explosion, as well as dusts and fumes from various processes.

- Ergonomic hazards occur when a body is strained by work, working conditions and the type of work. These include repetitive and/or awkward movements, being required to use too much force, improperly designed or adjusted workstations, frequent lifting and inappropriate lighting.

- Psychosocial hazards affect a worker's mental well-being or mental health and may have physical effects by overwhelming a worker's coping mechanisms and impacting the worker's ability to work in a healthy and safe manner. Examples include fatigue and stress (sometimes reflecting employer decisions around hours of work, shift patterns, pace of work and staffing levels) as well as bullying, violence and working alone.

These hazardous conditions can result in incidents, which include injuries, near misses and potential injuries. The purpose of worker participation in the recognition of hazards is to assist in efforts to eliminate or control those hazards and thereby prevent incidents.

Worker Participation in OHS

The internal responsibility system (IRS) for occupational health and safety has been widely adopted by Canadian jurisdictions. The three main principles of IRS are employer responsibility, worker participation and government enforcement.[xi] Consistent with this model, Alberta's hazard assessment and control provisions require employers to conduct a hazard assessment and control for any hazards discovered. Employers must also provide workers with an opportunity to participate in these activities and inform workers of the outcomes. The government is responsible for compelling hazard assessment and control (including adequate worker participation) should employers fail to meet their obligations.

Worker participation is central to OHS in general and hazard assessment in particular. At the most basic level, worker participation is a human right set out in provincial legislation and international agreements. Worker participation in OHS activities are critical to identifying and addressing problems successfully. Employers typically do not know or control the production process well enough to identify and manage hazards without worker participation. Essentially, it is necessary to observe hazards as workers experience them in order to identify and control them effectively.[xii]

Worker representation has been shown to be effective in improving health and safety. For example, survey data indicated that of the 56% of workers who reported unsafe working conditions, 79% saw their employer take steps to address the conditions. This appears to be particularly true when worker representatives are trained to practice "knowledge activism," a pragmatic combination of commitment, knowledge, strategy and experience and have access to external resources.[xiii] Finally, worker participation is necessary to balance employers' tendency to trade worker safety for profitability.[xiv] In Canada, joint health and safety committees (JHSCs) are an important mechanism of worker participation on OHS. JHSCs are not mandatory in Alberta and are predominately found on unionized worksites.[xv]

Broadly speaking, worker participation in OHS tends to be more effective in larger workplaces and in the presence of trade unions.[xvi] Workers in smaller firms and in workplaces reliant upon various subcontracting and outsourcing arrangements are less likely to have access to participatory practices such as formal consultation.[xvii] Greater worker participation in OHS efforts is also associated with better OHS outcomes in both non-union[xviii] and unionized settings.[xix] By contrast, passive OHS efforts are generally found ineffective at reducing injury.[xx] Effective IRS arrangements typically entail adequate training and information, opportunities to investigate and communicate with other workers, and channels for dialogue with management about existing problems and planned changes.[xxi] The more of these features that exist in a workplace, the more worker participation is a meaningful influence on hazard detection and abatement.[xxii]

Methodology

This mixed-methods study combines field observations, interviews, and survey work with a literature review to identify barriers to and opportunities for effective worker participation in hazard assessment in Alberta. The literature review began with an asynchronous roundtable among five practitioners and academics to identify a list of potential barriers and opportunities to worker participation in hazard assessments. A review of the research in these areas generated a small number of additional barriers and opportunities.

At the same time as the literature review was underway, the Alberta Workers' Health Centre (AWHC) staff completed 17 interviews with workers, managers and OHS professionals in Alberta. These interviews were generated via snowball sampling. Both male and female respondents were interviewed and respondent ages varied from 21 to 56 years old. Respondents worked in both white- and blue-collar jobs with job tenures ranging from three weeks to over 30 years. A number of respondents were recent immigrants. Additionally, AWHC staff conducted a 30-person focus group with shop stewards in the Alberta equipment-servicing sector and five days of field observations at Alberta worksites (primarily in the resource-extraction industry).

The AWHC also contracted a private research firm to conduct an online survey of 2000 Alberta workers aged 18 and older about their experiences with hazard assessment in Alberta workplaces. The online sample was based upon a large, recruited panel of thousands of Albertans that reflects the characteristics of the province's entire adult population. Prior testing of panel results against random sampling results suggests panel results closely mirror the results found via random-sampling.

The results of the survey, interviews and field observations were then combined with the literature to generate a comprehensive discussion of the barriers and opportunities to worker participation in hazard assessments in Alberta. Drafts of these findings were circulated among the roundtable participants until consensus was reached upon the content.

Workers' Experience of Hazard Assessment and Control in Alberta Workplaces

While Alberta's legislative requirements around hazard assessment and control are the most detailed and prescriptive in Canada, no publically available data exists regarding the degree of employer compliance with the requirements to conduct hazard assessments and involve workers in them.

A survey of 2000 Alberta workers was performed to determine worker experiences with hazard assessment and control. The survey found that 70% of workers reported knowing what a hazard assessment was and 75% of workers reported knowing they had a right to participate in the identification of unsafe work and work practices. Men were more likely than women to report this knowledge. Workers who reported regular exposure to 10 or more workplace hazards also reported greater knowledge about hazard assessment.

Table 1 shows that 64% of workers reported hazard assessments occurring at least monthly while 36% report hazard assessments occurring seldom or never.

Table 1. Frequency of Hazard Assessment

Every day	28%

At least once a week	13%
At least once a month	23%
Seldom	26%
Never	10%

The frequency of hazard-assessment activity varies between workplaces, depending upon how frequently work changes. Hazard assessments were reported to occur more frequently in industries where work changes often as well as in larger workplaces (100+ employees) and in workplaces where workers reported routinely facing 10 or more hazards. That said, that 36% of respondents reported hazard assessments occurring seldom or never suggests potential employer noncompliance with s.7 of Alberta's *OHS Code*.

Section 8(1) of Alberta's *OHS Code* requires employers to meaningfully involve workers in the hazard assessment and control process. Table 2 shows that only 19% of workers report being always asked for their opinion or input about how to prevent potential injuries or deal with hazards when work changes. A further 21% report frequently being asked for input while 45% of workers report being asked rarely or occasionally, and another 15% of workers say they are never asked. Workers who reported regularly facing 10 or more hazards in the workplace also reported much higher rates (53%) of "always" being asked for input when work changes.

Table 2. Frequency Worker Input Sought When Work Changes

Always	19%
Frequently	21%
Occasionally	27%
Rarely	17%
Never	15%

That only one in five workers reports always being asked for input into hazard assessment suggests significant employer noncompliance with s.8(1) of Alberta's *OHS Code*. Employers not soliciting worker input creates perhaps the most fundamental barrier to worker participation in the hazard assessment process.

Table 3 shows that between 41% and 52% of workers reported that they were very or moderately engaged in four behaviours that are consistent with hazard assessment and control activities. Interestingly, when the behaviours of workers who self-identified as "very or moderately" involved in OHS were segregated, those workers reported engaging in the four behaviours 99% or 100% of the time. While this may appear to be a tautology (i.e., involved workers report greater involvement), in fact it suggests that the

literature (above) indicating worker involvement improved OHS efforts is applicable in Alberta.

Table 3. Worker Involvement in Hazard Assessment and Control.

	Very	Moderately
Looking into the safety risks for visitors, cleaners or maintenance workers who may not often be in the workplace	18%	24%
Investigating whether anything in the equipment, products or materials you handle could harm you or employees who work nearby	19%	24%
Deciding whether personal protective equipment should be used or worn when operating devices, working with potentially hazardous substances or in potentially dangerous conditions	21%	23%
Identifying any possible safety and health risks to co-workers or members of the public in the work you are doing	24%	29%

Section 8(2) of Alberta's *OHS Code* requires employers to inform workers of workplace hazards and control mechanisms, including when work changes. Approximately 80% of workers say new employees are advised of workplace hazards. Seventy-three percent of employees reported that a supervisor or other more experienced employee points out hazardous conditions that might result from work changing. Workers reporting that they regularly faced 10 or more hazards also reported being informed about hazards stemming from work changes 90% of the time.

The surveys revealed consistent industry-level differences. Workers who reported working in manufacturing, oil/mining and construction reported higher rates of employer compliance with Alberta's hazard assessment and control provisions. By contrast, workers who reported working in health and financial services reported lower levels of employer compliance.

Overall, the survey found that:

- 36% of workers reported hazard assessments occurring seldom or never,
- 59% of workers reported being occasionally, rarely or never asked for input in the hazard assessment of control process, and
- approximately 30% of workers reported that they are not told about hazards arising from new equipment or materials or when work changes.

These findings support anecdotal evidence that employers do not always comply with the hazard assessment and control requirements of Alberta's *OHS Code* and these forms of non-compliance limit the opportunities for workers to participate in the hazard-assessment. The reasons for employer noncompliance are unclear. These results might reflect the complexity and potential cost of worker involvement. It might be economically rational for employers to not do the hazard assessment, do them superficially, or to hire out the assessment (and thereby minimize worker input). An interview with an OHS

professional highlighted how the tension employers perceive between safety and profitability can undermine their commitment to identifying and controlling hazards:

> Individually, supervisors are sincere. Certainly they don't want to see anybody hurt. If I look at it from a corporate standpoint, I don't know if it is sincere. They are in business. … When push comes to shove, it is (about) productivity. You are not going to find any company that says anything different. They are in business. If you put safety before everything else, you are not going to stay in business (Interview 13).

It should be noted that employer noncompliance with the Alberta's legislative requirements for hazard assessment and control occurs in a context of widespread employer noncompliance with other Alberta OHS requirements.[xxiii] Alberta's lack of effective OHS enforcement means noncompliance is effectively invisible, unless a worker is badly injured or killed and an investigation ensues.[xxiv]

Barriers to Worker Opportunities to Participate

When hazard assessments are conducted, four clusters of issues appear to further limit workers' opportunities to participate in the hazard assessment process. These include the organization of work, the pace of work and compensation schemes, environmental factors, and notions of worker carelessness and safety culture.

Organization of work

The manner in which work is organized can affect workers' opportunity to participate in hazard assessment. At the macro-level, the trend towards greater use of subcontracting arrangements is of particular interest. Increasing subcontracting undermines traditional organizational structures (i.e., a single employer, centralized management, common conditions and rules of works) and results in work being completed by a mixture of permanent and temporary employees as well as contractors (both companies and individuals).[xxv] These organizations may also operate (on) multiple worksites where their "workers" interact with workers and contractors employed by other organizations. In 2012, Alberta had the highest ratio of business locations to population in Canada.[xxvi]

Subcontracting arrangements sometimes entail a loss of in-house OHS knowledge, the devolution of managerial responsibility for management tasks, and a loss of clarity as to who is responsible for what. [xxvii] A loss of expertise and oversight among central and line managers may create internal political dynamics that reduce worker participation in hazard assessments:

> The more experienced person you are on the job, the more they hate to have you involved in the process. Because your experience shows that the supervisors don't know what they are talking about (Focus Group).

The devolution of managerial responsibility for management tasks and loss of clarity as to who is responsible for what can be particularly acute when work is embedded in horizontally (i.e., multiple employers) and vertically (i.e., multiple levels of subcontracting) complex relationships.[xxviii] Focus group data suggested that, in these circumstances, contractors may decide to forego hazard assessments altogether:

> We get told that the safety program is site specific. We don't have our own specific safety meetings or (Joint Hazard Assessments), we are to follow what is at the customer's site. If the customer's site doesn't specify JHA's, you don't have to do them, but don't get hurt because then you can be disciplined if they aren't done (Focus Group).

On large worksites, the sheer number of parties involved in performing the work may reduce the opportunity for workers to participate in hazard assessment:

> Sometimes due to lack of space, they gather only the foreman of each trade (for the hazard assessment). If the foreman wants to tell us what he remembers, he does. If not, then whatever (Interview 10).

One interview subject noted that his participation was limited to signing off on an assessment done by someone else, in part because his knowledge of what work he will be doing is limited:

> Right now a work colleague makes a hazard assessment, I have to co-sign it and read it and see that it mentioned everything that we're going to do. So all I do now is just confirm and sign it. …I don't make the assessment because I don't know what the task is going to be (Interview 5).

During field observations it was found that some organizations were reluctant to share their hazard assessment processes and policies with other contractors. This proprietary perspective on hazard assessment materials may impede the willingness of organizations whose operations interact from conducting joint hazard assessments.

Sub-contracted workers appear to be at greater risk of workplace injury than employees and may be less likely than employees to be consulted on OHS matters.[xxix] This may reflect cost-minimization pressure on subcontractors that is generated (or intensified) by the competitive bidding process.[xxx] It should be noted that some industries require subcontractors to meet OHS-related standards (e.g., processes, outcomes) in order to qualify for the bid process. It may be possible to shape such bid requirements to increase worker opportunities to participate in hazard assessments.

Subcontracting typically results in more, but smaller, firms. In 2012, 98.2% of Alberta businesses with Canada Customs and Revenue Agency payroll accounts had 100 or fewer employees, with 59.0% having fewer than 5 employees.[xxxi] The literature suggests that smaller firms tend to have less knowledge of OHS and perform fewer OHS activities, perhaps due to a lack of time, resources and/or expertise as well as exemption from OHS regulation and/or enforcement and limited union presence.[xxxii] Survey data reported that hazard assessment occurred more frequently in larger Alberta workplaces than in workplaces with fewer than 100 workers. Small business owners may also not see OHS as within their domain of responsibility (but rather a function of individual worker choices) and/or economically unfeasible to implement.[xxxiii] These dynamics might constrain opportunities for worker participation in hazard assessments in small firms, although no studies specifically addressing hazard assessment were found.

Jurisdictions such as Sweden have addressed small workplaces via the appointment of regional worker health and safety representatives.[xxxiv] The applicability of this model to Alberta in unclear due to contextual differences, such as Alberta's low union density as well as state and employer hostility to union activity of any kind. Third-party OHS providers such as community groups or workers' health and safety clinics may provide a similar service.[xxxv] Small firm heterogeneity (e.g., type of work, degree of engagement with other firms) introduces complexity in recommending means by which to enhance worker opportunities to participate in hazard assessment.[xxxvi] Mandatory JHSCs may provide one means of enhancing worker participation in OHS generally, although small businesses are often given an exemption from such requirements.

External pressure on smaller firms (in the form of proactive state enforcement) appears to generate additional OHS activities, which include more opportunities for worker

participation.[xxxvii] There is also some research that suggests targeting high-risk industries can help to address enforcement challenges in industries characterized by extensive subcontracting.[xxxviii] That said, additional enforcement does not necessarily alleviate the resource issues that constrain the capacity of workers in small businesses (and the businesses themselves) from engaging in OHS work.[xxxix] Further, Alberta's limited proactive OHS enforcement efforts suggest such pressure may be small or non-existent.[xl]

At the micro level, the (re-)organization of work is resulting in the seeming paradox of fewer supervisors but the same or greater level of worker supervision. This reflects that, in many industries, technology is being used to embed traditional supervisory tasks in work processes. For example, employers may computerize the evaluation of production quotas (e.g., keystroke counting, issue resolution times, production counts) or quality assessment (e.g., error rates). One implication of this reorganization of work is workers have fewer opportunities to discuss the hazards of work because there are fewer (or no) supervisors and the hazards (e.g., repetitive strain injuries triggered by production targets) are more difficult for workers to mitigate because the hazards are embedded in the work process and technology.

Pace of work and compensation schemes

Payment on a piece-rate basis (or "payment-by-results") is an increasingly common form of remuneration, particularly (although not exclusively) in industries with significant levels of subcontracting.[xli] In conjunction with the profit incentive, piece-rate pay incentivizes haste. Significant competition among subcontractors that has driven down the value of bids and/or contractual terms containing incentives for early completion (or penalties for late completion) may compound this work-hastening effect.[xlii] The technological changes discussed above may also trigger work hastening in more traditional organizations as they adopt lean production models that are associated with increased injury outcomes.[xliii]

Work hastening may reduce the opportunities employers offer workers to participate in hazard assessments (particularly field-level hazard assessments) because such assessments slow production. An interview with a manager suggested the degree to which hazards identified by workers are attended to varies:

> (It) depends upon who you ask and at what moment you ask. Under pressure, and often there are deadlines, the balance tilts towards productivity. … Of course you can challenge a supervisor (over hazards) but you have to take the consequences. It depends on who it is. Some department heads will take you seriously. Some will lash out (Interview 15).

Field observations found that subcontracting can result in incomplete and rushed handoffs between contractors. For example, travel-related delays affecting one contractor created costs for another (whose workers had to wait). Consequently, the hazard assessment entailed a pro forma signing of the paperwork before handing over a worksite. In another instance, a contractor started work before the required hazard assessment process occurred, rather than wait for the required staff to arrive. This worker continued to work during the hazard assessment despite the (unusual) presence of both the observer and senior company representatives. This suggests the practice of working before doing the hazard assessment is well-established.

Survey data supports the notion that time and pay are factors that might limit worker involvement in OHS. The survey found that 45% of workers indicated that they don't have time to get more involved in workplace safety and 32% indicated they don't get

paid for health and safety involvement. Interview data suggests that worker participation in a hazard assessment is sometimes limited to reviewing an assessment completed by someone else:

> I usually get the paper, which I sign, which is already fill out with information. So the person with whom I work does the hazard assessment (Interview 6).

Work hastening may also trigger superficial hazard assessment, particularly in cases where the varying nature of the work and working conditions requires employers to engage in frequent, field-level hazard assessments. Field observations and interview data suggests that superficial hazard assessment can include relying upon checklists or templates that undermine the rigor of the process:

> Gone to the point of laminated copies, almost comical (Focus Group).

Superficial hazard assessment is widely acknowledged to occur. For example, consider this anecdote told by Progressive Conservative Member of the Legislative Assembly Robin Campbell to other legislators:

> I can tell you from my 30 years of working in industry, in coal mining, which is one of the most regulated industries in Canada, that workplace hazard assessments just don't work. What those mean is that every worker before they start their shift has to fill out a workplace hazard assessment form of what their jobs are going to entail during the day and assess any workplace hazards that they're going to see, and they have to try and address those. I can tell you, Mr. Speaker, that in the mining industry, for example, I know that workers on four days of work take a piece of paper, photocopy it four times, sign their name, and hand the thing in. So it does nothing.[xliv]

While Campbell implicitly blames workers for superficial hazard assessment behavior, it is the employer that created and operates this system. It is useful to consider why workers would treat hazard assessments in such a perfunctory manner given what is at stake in a mine. Worker disregard may reflect the expectation that meaningful hazard assessment will result in no (or a negative) response by the employer (see below). It may also reflect worker assessment about the validity of safety-checklist approaches to hazard assessment and thus the amount of time workers are willing to spend upon them.

Environmental limitations

Field observations suggest environmental conditions can affect the opportunity for workers to participate in meaningful hazard assessment. Bad weather (e.g., temperature, precipitation) is a hazard in itself, but may also limit the opportunities employers provide to conduct a thorough field-level hazard assessment. In such circumstances, supervisors sometime do hazard assessments "in the truck" without visual contact with the worksite or equipment. That is to say, the hazard assessment process becomes an entirely theoretical exercise. The root cause of this limitation on workers' opportunity to participate in a hazard assessment is an employer decision around the facilities (often none) available on the worksite.

Similarly, both limited daylight hours and the requirement to travel between worksites can pressurize workers to start work immediately upon arrival at a worksite. Field observation suggests that, where hazard assessments are done at all, they may be perfunctory exercises performed while workers are engaged or waiting to perform other tasks (e.g., driving to the site, setting up equipment, gearing up, going to the bathroom).

Hazard assessments may also be performed by workers who are exhausted as a consequence of travel requirements and shift scheduling—factors which are themselves

workplace hazards. Field observation found, for example, one worker who travelled from Spruce Grove (home) to Drayton Valley to meet his truck, then onto Rocky Mountain House to the worksite. This 250km commute was not considered part of the worker's working time. Upon arrival, the crew was anxious to start work and consequently the worker's opportunity to meaningfully participate in the hazard assessment that took place was very limited.

Careless workers, safety culture and safety climate

Workers' opportunity to participate in hazard assessment may be intentionally or unintentionally constrained by employers because employers view workers as the central workplace hazard. The (false) notion that worker behavior is the primary cause of injuries has a long pedigree, reflecting employer interests in limiting liability for injuries,[xlv] and remains widely held.[xlvi] During an interview, a supervisor volunteered that he held such views:

> Safety is determined by individuals. Companies can bring in policies, even training. That doesn't mean anything if someone doesn't have the will to be safe. There are certain people that are accident-prone. I think it is due to careless workers or inattention or lack of insight or lack of foresight or clumsiness or occasionally bad luck, but usually carelessness…. Some people just have a lack of common sense (Interview 15).

The most recent manifestation of the careless worker myth is in behavior-based safety (BBS) systems. BBS focuses on modifying worker behaviors and assumes that incidents have a single or primary cause, rather than being the product of network of antecedent and contributory causes. [xlvii] The notion of mono-causality tends to truncate incident explanation at the point of the worker, rather than delving into the contextual factors that explain worker behavior (e.g., a response to production pressures, the absence of training).

A similar dynamic seems to underlie discussions of safety culture and safety climate. These terms are often (although not necessarily correctly) used interchangeably to describe organizational and individual attitudes that emphasize safety.[xlviii] Culture is often operationalized as individuals' attitudes towards safety, which then manifest themselves as behaviours. This view largely ignores the important impact that organizational practices have on behaviour. By emphasizing worker belief and behaviour and obscuring the context that work occurs in, safety culture and climate tend to truncate the explanation of incidents at the level of the worker, just like BBS. Several workers comment on how this dynamic spills over into the hazard assessment process.

> (Field Level Risk Assessments), in my opinion, is a device for the company to point blame at workers if an incident happens (Focus Group).

> The main push back (from workers) is that the forms are used as a way to put blame back on the worker (Focus Group).

> An employer doesn't sit down with workers to develop a JHA that will make work safe. The purpose of the JHA is remove the liability from the company and put it onto the worker (Focus Group).

Employers who (implicitly or explicitly) blame workers for their injuries may be skeptical of the value of worker input. Consequently, they may provide workers with fewer or less meaningful opportunities for input into the hazard assessment process. Such employers may also accord relatively little weight to worker input to hazard assessments.[xlix] In these

ways, blaming workers for their injuries reduces their opportunity and willingness to meaningfully participate in the hazard assessment process. (see below).

Barriers to Worker Capacity to Participate

Four clusters of issues appear to reduce the capacity of workers to participate in hazard assessments. They include employer control over the definition of hazard, the size of firms, precarious forms of employment, and a lack of hazard assessment training.

Definition of hazard

Employers determine the hazards that are present in the workplace when they design and organize work. It is uncommon for employers to consider hazard control in the work-design and -organization process. The tendency toward post-design hazard control both pre-determines the hazards workers face and limits the control strategies employers are willing to consider (due to retro-fitting and redesign costs). Employers shape which workplace hazards are recognized and controlled via the information they share with workers. Among the notable trends is that employers tend to emphasize short-term (safety) risks, whereas workers tend to be most concerned with long-term (health) risks.[l]

Employers also construct and operate the hazard assessment process. Historically, employers have used such control to define what aspects of workplace safety are examined and what kinds of evidence are considered legitimate in order to evade the regulation of and the liability for workplace health hazards, such as asbestos.[li] Employers may also be more likely to acknowledge or provide information about hazards that are easy to address rather than hazards that require more involved remediation. Consequently, workers frequently have little to no access to accurate information about health or safety hazards.

Research also suggests that employers may conceptualize risk in ways that differ from workers. Specifically, managers may operationalize "high risk" as the significance of a negative outcome rather than the probability of its occurrence.[lii] A highly probable but low consequence injury (e.g., a minor burn or laceration) may be viewed as low risk (even though it occurs often) while a low probability but high consequence injury (e.g., fatality) may be viewed as high risk (even though it is relatively uncommon). While severity of consequence is an important aspect of risk assessment, emphasizing it results in the discounting of lower consequence (but very common) injuries and inattention to the hazards that cause them. This definitional difference may reduce workers' capacity to participate in hazard assessment in that workers define hazards in ways that are incompatible with managerial paradigms.

Field observation appears to validate the assertion that employer definitions of hazards affect hazard assessment. Workers following employer hazard assessment processes attended to high-consequence, low-probability hazards (e.g., explosions, H_2S leaks) while low-consequence, high-probability hazards (such as slippery and/or uneven work surfaces, sunstroke, fatigue, road conditions) were not identified and no control efforts were undertaken. There was also no discussion about the hazards posed by other workers operating on or near the worksite. Multiple crews on-site is common, given the degree of subcontracting that occurs. Other workers were assumed to pose no hazard and to know enough to keep themselves safe from the hazards associated with the work of others. Indeed, there were no meaningful impediments (e.g., fences, gates) to worker (or the general public) access any of the worksites observed despite the dangers of the worksites.

Size of firm

The growth of small firms, including those that operate in subcontracting relationships, may reduce the capacity of workers to participate in hazard assessments. Smaller firms frequently have little internal capacity to perform basic OHS functions.[liii] This, in turn, limits employers' ability to train workers about hazard assessment (although such training could be procured from outside sources). Owners may also not view such training as being their responsibility.[liv]

Smaller firms are characterized by higher worker turnover and a short firm lifespan. Higher turnover reduces employers' willingness to commit to training. Shorter organizational lifespan among smaller firms reduces the opportunity for workers to develop expertise, either in specific jobs (required to identify hazards) or in the hazard assessment process itself.[lv] Indeed, the "supervisor" is often simply the most experienced worker rather than being someone with managerial expertise.[lvi] Such arrangements may embed traditional ways of working, include failing to do hazard assessments. As noted below, such arrangements may also lead to hazard assessment approached based upon passive rather than active forms of worker engagement.

Precarious employment

Precarious work is "paid work characterized by limited social benefits and statutory entitlements, job insecurity, low wages and high risks of ill health."[lvii] There has been a significant increase in precarious employment in Canada, largely attributable to employers seeking to reduce labour costs. The desire to minimize costs creates a disincentive for employers to invest in training, including safety training.[lviii] The frequently short tenure of precarious workers also places these workers in workplaces and work processes with which they may be unfamiliar. These factors reduce the capacity of such workers to participate in hazard assessments.

Precarious employment may also increase the complexity of the hazards facing workers. For example, multiple jobs may create complex interactions between hazardous substances or stacked exposures that are not routinely considered in hazard assessments (which tend to focus on a single worksite). Precarious workers are also less likely to have access to training and/or knowledgeable representatives due to the lower likelihood of unionization. This makes precarious workers more reliant upon employers for information about hazards and their rights. This dependence may be intensified by language barriers often found in workplaces employing large number of migrant workers.[lix]

Hazard assessment training

A necessary precondition for effective worker participation in OHS activities is basic knowledge about work processes, hazards and control strategies. Specific to hazard assessment, workers must understand what hazards to look for and how to look for them.[lx] Such knowledge and skill is rarely a component of occupational training, even for high-skill, high-risk jobs.[lxi]

Survey data indicates that 34% of Alberta workers (including 49% of workers under age 25 and 41% of female workers) reported that they have enough training to become more involved in OHS efforts. Employers must deliver such training in order to meet their obligations under the Alberta *OHS Code* to have workers meaningfully participate in hazard assessment and control efforts. Specific training (and potentially periodic retraining) as well as time to conduct such training is necessary to develop and maintain workers' capacity to effectively participate in hazard assessment.[lxii] The cost of such

training, as well as the cost of remediating hazards identified by trained workers, may be a barrier to employers providing such training.

There is conflicting research about the effectiveness of contemporary safety training.[lxiii] High-engagement training is linked to greater knowledge acquisition, better safety performance and a greater reduction in injuries.[lxiv] High-engagement (or active) learning methods incorporate dialogue, reflection, feedback and action into the training. This degree of engagement allows trainees to infer causal and conditional relationships between actions, the environment and outcomes as well as learn from mistakes. This changes how workers think and act, especially in novel situations.[lxv] By contrast, low-engagement training typically focuses on information transmission via lectures and written and video material with little social support to reinforce training. For example, significant questions exist about the effectiveness of online safety training due to its tendency towards passive, rather than active, learning.[lxvi]

Creating and delivering high-engagement training requires pedagogical skills that many supervisors will not have, as well as time for such training to occur. These constraints often mean OHS training is often general and decontextualized, as well as casts learners in passive roles.[lxvii] Further, the retention of safety training and its application to the workplace is affected by the behavior of supervisors and coworkers when a worker attempts to apply the training (see below).[lxviii] In this way, the effect of good training can be nullified by ignoring the hazards workers identify and/or a negative reaction to hazard identification.

Field observation suggests an important workplace dynamic around safety training in Alberta is pressure to "get workers certified". Certification is frequently required for site access and to meet due diligence requirements. For example, field observations revealed that industry-standard hydrogen sulfide safety training (H_2S Alive) was largely passive with only a short opportunity for hands-on work with equipment (which was broken) and no focus on problem-solving. Questions were discouraged and the sense among participants was that everyone would pass the exam regardless of what they knew.

More specific to hazard assessment training, there appears to be little post-training validation of worker knowledge or ability to apply it on the job, raising questions about the value of such training:

> I don't have all of the tools to assess risk in the workplace. I took a very simple computer test (after I did the training). The idea of the test was to show the individual took the test and cover (the employer) against any legal problem rather than giving employees tools to prevent accidents (Interview 9).

At the root of this dynamic appears to be cost pressures on employers combined with a training system heavily dependent upon contractors providing "generic" safety training.

Literacy may reduce workers' capacity to participate in OHS activities such as hazard assessment.[lxix] Approximately 61% of Albertans have literacy levels adequate for effective functioning in society, suggesting a large subset of workers may struggle with written material.[lxx] Literacy levels significantly correlate with level of formal education, with approximately 34.4% of Alberta workers holding some form of post-secondary credential.[lxxi] To the degree that the labour market is segmented based upon credentials (or, more broadly, literacy), there is the potential for low-literacy workplaces and occupational sectors. Workers in such sectors may have lower capacity to participate in hazard-assessment training and (consequently) hazard assessments.

English-language proficiency may create significant difficulty among non-English speakers in understanding and applying operating manuals, safety signage and hazard material labeling. Survey data suggested that 8% of workers did not become more involved in workplace safety and health because language barriers made it difficult to communicate with their supervisors and management. Alberta's large migrant worker population also raises the issue of the impact of cultural diversity on worker participation in hazard assessment. At a high level, cultural factors (shaped by linguistic conventions) can affect when and how workers interpret messages as well as to whom they communicate.[lxxii] For example, cultural factors may create differing levels of tolerance for dissent and questioning. These factors, in turn, reduce the capacity of these workers to participate in hazard assessments and comprehend hazard control efforts.

Barriers to Worker Willingness to Participate

Five clusters of issues appear to reduce the willingness of workers to participate in hazard assessments. They include worker- and employer-generated fear of participation, pace of work and compensation schemes, precarious work and worker vulnerability, and gender-based harassment and discrimination.

Fear-based silence

Workers often report that they fear speaking up about safety matters.[lxxiii] This reaction reduces the willingness of workers to participate in hazard assessments.

> You don't know the consequences of (pointing out hazards). You never know if they can fire you. … At work, we're supposed to be seven guys but there are only two guys. But you can't tell the managers "you are killing me by making me do the work of seven guys". So it is difficult. If you do that you'll be fired. That is what is going on in our mind. No one wants to be fired (Interview 4).

> Absolutely (workers are afraid). Intimidation, bullying by department heads, especially when it is coming down to deadlines. You don't say anything (Interview 15).

Survey data indicated that 19% of workers did not get more involved in checking for hazards or other safety problems because they felt their supervisors would object or not allow them to do so. Interestingly, 46% of workers who reported being regularly exposed to 10 or more hazard agreed with this statement. Another 13% of workers agreed "employees like me are afraid to speak up about health and safety problems." Again, workers who reported regular exposure to 10 or more hazards agreed with this statement 35% of the time.

Workers can use four main strategies when faced with unsafe work: leaving the workplace (exit), expressing their concerns (voice), waiting for something to change (patience) or ignoring the hazardous conditions (neglect).[lxxiv] Silence is an aspect of all but "voice". Workers' choice of strategy appears to reflect their relative fear of termination and injury, supervisor attitudes and feelings of power and powerlessness.[lxxv] For example, exit is extremely uncommon, reflecting workers' reliance upon waged employment. The effectiveness of voice is uneven, depending upon management attitudes. If voice is ineffective, workers may revert to patience or move onto neglect or exit depending upon job satisfaction, alternatives and investment.[lxxvi] This dynamic is often seen in worker cynicism about the effectiveness of hazard assessment activity:

> Some even go to [OHS] to file a complaint… but nobody cares and they don't do nothing. Alberta runs mostly on construction… so the government is not going to do

anything. They're going to turn a blind eye because if work gets done that means more money. So everybody just gives up (Interview 10).

Fear of speaking up can result in workers withholding knowledge about issues such as managerial behavior,[lxxvii] worker treatment,[lxxviii] organizational functioning[lxxix] and organizational wrongdoing.[lxxx] Employees who remain silent report that silence is motivated by fear of material or social repercussions in the workplace, such as looking foolish among their peers or being punished by supervisors.[lxxxi] That said, not all employee silence is deliberative; some silence may well be reflexive.

Reflexive fear has an evolutionary basis: fear, both generally and of specific circumstances (e.g., of heights, darkness, confined spaces, challenging higher status individuals), triggers behavior that protects us from threats.[lxxxii] Detecting threats is an early adaptive response that can trigger non-conscious reactions.[lxxxiii] Workers' reluctance to challenge managers (who have higher status in the work hierarchy) and question the safety of a workplace (thereby challenging those who control it) may reflect an unconscious fear reaction leading to silence. This fear may be exacerbated by dominance cues (e.g., yelling, attributes such as supervisor size or gender, manner of comportment exhibited by leaders such as frowning[lxxxiv]), as well as by childhood socialization that emphasizes submission to authority.[lxxxv]

> Culturally, we struggle. If I were your coworker and I saw you doing something stupid—it is sort of like an old boys' club—if I saw you doing something stupid I'd say 'what are you doing?' I think (that if) a new worker (said that), the crew would be saying 'what are you doing? Shut up.' A lot of pressure falls on people who raise issues (Interview 13).

The degree of fear response can be tempered by the immediacy or severity of the threat(s). For example, expressing safety concerns to an employer creates an immediate and potentially severe threat to a worker's employment. By contrast, a safety threat is generally non-immediate and of unknown severity. Consequently, a worker is likely to prefer unremediated safety issues to confronting a supervisor. To the degree that this process is unconscious (or habituated through past personal or vicarious experience[lxxxvi]), workers may reflexively respond to routine tasks such as hazard assessments through silence. The pessimism and caution associated with fear may colour even more thoughtful and calculating responses.[lxxxvii] These dynamics may drive workers' implicit acceptance of management's right to manage the workplace, particularly around issues where workers are indifferent or unknowledgeable.[lxxxviii]

It may be possible to reduce workers' fear about challenging employers around safety by enhancing workers' knowledge and skills around hazard assessment and control.[lxxxix] Providing instruction and encouraging peer support around identifying and remedying safety issues creates opportunities for workers to be successful (or even partially successful) in speaking up about safety. Such success helps workers see voice as a viable and less threatening behavior. This suggests that providing time for training, a formal process by which to raise OHS concerns (e.g., JHSCs), and recognizing the legitimacy of safety representatives may be a pathway to enhanced worker participation. That said, it remains difficult to prevent reflexive silence in situations of high fear intensity because of the evolutionary value of a better-safe-than-sorry reaction.[xc]

Employer-created silence

An alternate perspective on worker silence suggests employers may intentionally create silence through agenda setting and institutional structures in order to avoid issues and

conflicts contrary to their interests.[xci] This may create a climate of silence wherein workers believe that speaking up is not worth the effort and doing so may be dangerous.[xcii] Interviews suggested this dynamic operates around hazard assessments in Alberta:

> When they do an accident investigation, they always try to find a way to say that "the employee failed to identify the hazards." You can go from both extremes—from the (Joint Hazard Assessment) that is barely filled out so you don't stir the pot and you don't make that manager mad by identifying hazards he doesn't want to address because there is a cost associated with them. Or you could go the opposite direction and where you can identify everything under the Sun… and it still comes down to the employee failed to identify the hazard. And after awhile you just you give up. It is just a piece paper that allows the company to present to whatever governing body that is in charge of this, probably the WCB, trying to do some sort of cost savings (Focus Group).

Managers are more likely than are other workers to blame workers for workplace injuries.[xciii] This may result in distrust between employers and workers, thereby impeding workers' willingness to engage in discussions of hazards.

As noted above, employers may create a shallow hazard assessment process that limits what is defined as a "hazard" and thereby avoid discussions around the hazards embedded in basic workplace choices (e.g., work processes, materials, staffing models). Indeed, there is some research that suggests employer-created work processes may require safety violations in order for workers to complete work.[xciv]

Not capturing and acting upon feedback from hazard assessments (particularly field-level hazard assessments) to control hazards is sometimes characterized as a form of management failure.[xcv] Alternately, information may be intentionally ignored in order to minimize production costs and/or liability.[xcvi]

> Yes, I (identified a hazard) and my concern was ignored. They were using a prototype machine that wasn't proven—it didn't have the safety guards or safety requirements to operate. It was operated. A near miss happened (Interview 9).

Approximately one-quarter of workers under age 25 indicated the lack of influence they had as junior employees was a reason they chose not to become more involved in OHS efforts. Workers over 55 also identified a lack of influence or employer indifference as barriers to greater involvement. Overall, 15% of workers reported management indifference to health and safety issues.

In either case, such inaction creates psychological stress (i.e., cognitive dissonance) because it places workers in a position where their values differ from their behavior.[xcvii] Workers resort to silence strategies when they believe that speaking up will not make any difference. [xcviii] Over time, this dynamic (silence = inaction = more silence) has the potential to create a form of learned helplessness (or hopelessness).[xcix]

> I've never heard management say based on the (Joint Hazard Assessments) that we need to get new tooling that is designed to do a job better or we need to change a procedure. If somebody gets really hurt, they'll jump (Focus Group).

Workers may also attempt to resolve the dissonance caused by working in unsafe conditions by adjusting their safety-related expectations downward. Indeed, routinely hazardous jobs (such as being a rig hand in Alberta's oil patch) may result in workers adopting a fatalistic attitude about workplace injury.[c] This normalization of hazards may

not only reduce workers' willingness to participate in hazard assessment, but it may so desensitize workers to hazards that they no longer attend to various hazard control mechanisms, such as administrative and PPE controls.

Pace of work and compensation schemes

Piece-rate compensation is associated with higher levels of injury.[ci] This may reflect various factors, such as relative levels of training and experience, (un)willingness to refuse unsafe work, and incentives to work quickly. As noted above, piece-rate compensation incentivizes haste and thus may limit the opportunities employers make available to workers to participate in hazard assessment. Similarly, where some or all of workers' salary is paid on a piece-rate basis (including bonus and/or penalty schemes), workers may be less willing to participate in hazard assessments, reflecting their trading off their interest in a safe work environment against their desire to maximize their pay.

Less obvious is how piece-rate pay and competitive subcontracting systems can displace worker interests with employer interests. [cii] Interviews with workers indicate that workers may discount their interests in a safe work environment (by remaining silent about hazards) if they feel that raising such issues will jeopardize their employer's ability to maintain a contract. Interviews also suggest that employers sometimes work around such concerns if they are raised.

> You can refuse unsafe work. But someone else will get sent to the site to do the work… because the subcontractor doesn't want to lose the business. So another worker gets sent in to do the job (Focus Group).

> I said 'sorry, you can't do that.' The guy was barred from the worksite…. Sadly his company wouldn't have dealt with (behavior). They just would have reassigned him and he's somewhere else doing the same thing (Interview 13).

This dynamic of worker replacement to avoid work refusals is a recurring management strategy.[ciii] This dynamic may then reduce workers' willingness to engage in meaningful hazard assessment. Workers may also be reluctant to participate in hazard assessments when the assessment occurs during workers' rest breaks. These dynamics may be particularly evident in cases where field-level hazard assessments are necessary.

Precarious work and worker vulnerability

The (re-)organization of work towards an increasingly contingent workforce (e.g., temporary employees, subcontracting) reduces workers' willingness to exercise statutory rights, including their right to participate in hazard assessments.[civ] In effect, workers whose employment must be periodically renewed are more vulnerable to employer reprisals and are, therefore, less likely to voice concerns about their working conditions. The development of a secondary labour pool may also affect the willingness of workers in standard employment relations to participate in hazard assessments for fear of replacement with less expensive and more acquiescent workers. For example, a (fairly common) worker phone call received by the AHWC during this study reported that an employer responded to worker safety concerns raised at a tailgate meeting by saying "There is a long list of people waiting to take your job if you don't want to do it."

The growing use of migrant workers, whose residency is contingent upon their employment and who have effectively no labour mobility, creates a significantly vulnerable group of employees who may be unwilling to participate in hazard assessments.[cv] One interview subject was quite explicit about the interaction between

the precarity of temporary foreign workers and their willingness to participate in the hazard assessment process:

> You have workers who are not Canadians…. Those guys get pushed really hard so they won't say anything. They will just do the work and that is. Because if they go challenge their boss, some bosses are like "so remember you are under the work permit so anytime …you keep telling me (it) is unsafe and you don't want to work and then you go back to your country." …Some of them don't know if their supervisor will act in the correct, responsible way but they don't want to take the risk. The same things happens with Canadian citizens. Nobody will challenge the supervisor (Interview 10).

There are also significant questions regarding the effectiveness of Alberta's OHS enforcement efforts, including questions about regulatory capture.[cvi] This perceived ineffectiveness may further reduce the willingness of workers to enforce their right to participate in a hazard assessment.

Gender, discrimination and harassment

Women may face gender-specific barriers to participating in hazard assessments. Women remain disadvantaged in the Canadian workforce and are more likely to be employed precariously.[cvii] Women are also more likely to have the hazards they face dismissed by employers, regulators and health-care providers, reflecting the long-term devaluing of female work.[cviii] The gendered nature of workplaces (which sometimes manifests itself in harassment and discrimination) may reduce the willingness of women to participate in hazard assessments.[cix] This dynamic is problematic because hazards may sometimes be gender specific.

Reproductive hazards are the most commonly identified gender-specific hazards. But emphasizing reproductive hazards tends to obscure other gender-specific hazards.[cx] These "other" hazards tend to be embedded in technology and/or work process based on male anthropometry. For example, machinery and processes may all contain assumptions about operator height, weight and strength.[cxi] These assumptions are disproportionately based upon a male norm and pose ergonomic and other hazards to workers who do not fit this norm.[cxii] This male norm is often invisible (to men) and must be pointed out (by women) or it will go unrecognized and the resulting hazards uncontrolled. The assignment of work tasks may also be gendered, resulting in effectively gendered hazards.[cxiii] Employers frequently design jobs to be performed at near the limit of (male) worker's capacity in order to minimize labour costs. Controlling gendered hazards may require expensive changes to work processes. Consequently, employers have little incentive to engage in gender-based hazard assessment and may indeed participate in or condone the suppression of identifying such hazards.

The gendered nature of hazard assessment (including suppression of concerns) suggests other personal characteristics of workers may also limit their willingness to participate in hazard assessment. As noted above, inter-related issues around language, literacy and ethnicity may limit workers' capacity to participate in hazard assessment. But they may also limit their willingness to do so. Similarly, workers requiring particular workplace accommodations due to disability, religious, family or other requirements may decline to meaningfully participate in hazard assessment as a way to reducing their exposure to harassment and discrimination.

Size of enterprise

Smaller workplaces sometimes report less-than-optimal worker participation in OHS activities. It is unclear whether participation in smaller firms is lower than in larger firms and what the cause of non-participation is, although opportunities for participation exist so it may be capacity or willingness [cxiv] Smaller workplaces may create social dynamics not conducive to hazard assessment. "Family" businesses blur the lines between employment and family relationships.[cxv] This may reduce the willingness of employers to conduct and workers to participate in hazard assessment and control because the purported economic needs of the "family" may come first.[cxvi] That said, smaller workplaces may also generate close interpersonal connections among workers and between workers and employers that increase the willingness of both sides to identify and mitigate hazards.

Table 4 outlines the percentage of those workers (reported by workplace size) who wanted to be more involved in workplace safety and agreed that a barrier is safety is someone else's responsibility.

Table 4. Agreement that Safety is Someone Else's Responsibility

<20 workers	18%
20-99 workers	24%
>99 workers	36%

Alberta workers employed in workplaces with fewer than 20 workers were more likely to be involved in the four OHS activities set out in Table 3 than were employees in workplaces with 20 or more employees. This may reflect that, in larger workplaces, Alberta workers are more likely to have some form of formal safety representation. For example, survey data indicates that 82% of workers who indicated they were very or moderately active in OHS were employed in workplaces with 500+ workers.

Barriers to Worker Participation When Work Changes

All change in the workplace originates with the employer because work is carrying out the employer's direction. Consequently, Section 7.4 of Alberta's *OHS Code* requires employers to make a further hazard assessment when new work processes are introduced, when work processes or operations change, or when the work site is altered or added to. The survey results suggest that employers are conscious of the different ways they change work and imbed mechanisms to assess the impact potential. When new materials or equipment is first used, 71% of workers indicated that a supervisor or other more experience employee pointed out hazards or dangerous working conditions. There were significant industry differences: 91% of workers in construction and 83% of workers in oil/mining agreed with this statement while only 42% of workers in finance did.

Similarly 73% of workers agreed that, when work changes, a supervisor or another employee points our hazards or dangerous conditions that might result from the change(s). Workers exposed to more potential hazards (regular exposure to 10 or more hazards) agreed with this statement 90% of the time. The workers least likely to agree with this statement include women (69%), office workers (69%) and workers in health care (67%), government (64%) and financial services (67%).

Many of the barriers to workers' opportunity, capacity and willingness to participate in hazard assessments set out above are also relevant to hazard assessments when work changes. For example, as organizations make greater use of subcontracting arrangements, the greater number of actors and interfaces may obscure changes to work necessitating a new hazard assessment.[cxvii] The responsibility for identifying the need for new hazard assessments and ensuring that such assessments allow workers a meaningful opportunity to participate is the employer's responsibility.

Similarly, a shift-schedule change (e.g., moving from working five eight-hour shifts to four ten-hour shifts) may introduce or intensify fatigue-related hazards. Yet employers might not recognize that such a change requires a new hazard assessment because (1) it is an incremental change, (2) that has little affect on work processes, and (3) might be driven by financial imperatives. Employers may also consider hours of work a matter of labour relations rather than health and safety. The absence of organizational triggers that lead to a review of existing hazard assessment and control strategies may result in employers failing to provide opportunities for workers to participate in hazard assessments.

The opportunity for and willingness of workers to participate in further hazard assessments following work change may also be affected by the industrial relations context of a change. Workers have a variety of reactions to workplace change (e.g., acceptance,[cxviii] resistance,[cxix] cynicism[cxx] and commitment[cxxi]). The context of a change (e.g., expected or real resistance) may reduce the opportunities employers offer workers to participate in hazard assessment, as well as how seriously employers take workers' comments. Similarly, workers' willingness to participate may be affected. Further, conflict over workplace change may distract both employers and workers from the safety implications of a change.

Conclusion

The literature and data clearly demonstrate that worker participation enhances workplace health and safety. The data also suggests that a significant number of employers are not compliant with the provisions of Alberta's *OHS Code* regarding hazard assessment and control. Particularly troubling is the low level of reported worker involvement in the hazard-assessment process. These gaps are more prominent in small workplaces and among part-time and younger workers—findings consistent with the literature about OHS representation.

The literature suggests several strategies to increase worker participation in the hazard assessment and control process. Most importantly, employers must consistently perform hazard assessments. This includes allocating adequate work time for workers to participate in hazard assessment activities. It also requires consistently involving workers in the hazard assessment. Employers must also create systems by which to identify instances when work has changed and a new hazard assessment is required. These actions by employers are a basic precondition for worker participation in the hazard assessment process. If employers will not voluntarily perform hazard assessments and involve workers, proactive state inspection to identify and target such employers will be necessary.

Workers' capacity to participate in hazard assessment turns, in part, upon their knowledge of hazards and the hazard assessment process. Providing such training to workers in a high-engagement format will enhance their capacity to participate in hazard assessment. Training will also offer opportunities for workers to understand the full spectrum of hazards, their rights around hazard assessment and control, and consider

ways in which they can support one another effectively in the face of employer resistance. Supervisors also require adequate training in order to effectively manage the hazard assessment process (e.g., conducting a hazard assessment while in visual contact with the worksite), interact with workers (to prevent silencing), and respond to worker contributions to hazard assessments.

Periodic retraining or reinforcement of hazard assessment principles (particularly where hazard assessments are infrequent) may be necessary to maintain worker skill levels. Where literacy- or language-based barriers exist, remediation or accommodation will be required. Workers' participation tends to be more effective if it occurs within a formal structure within which to raise and address workplace hazards, such as a JHSC. Further, workers may benefit from hazard assessment training and resources provided by organized labour or third-party organizations (e.g., workers' clinics or centres).

When workers identify hazards, employers must both take action and communicate the results of that action to workers. These behaviors are required to prevent worker cynicism and withdrawal. Further, workers are unlikely to meaningfully participate in hazard assessment when they fear reprisals for identifying hazards. When incidents occur, a review of the hazard assessment may be in order. Injury and/or near-miss investigations should look beyond worker behavior to identify systemic contributions to the injury or near miss. Hazard assessments should not be used for disciplinary purposes or to deflect liability.

Some workplace characteristics create additional challenges to effective worker participation in hazard assessment. Extensive subcontracting can blur who is responsible for, and whether they have complied with, the hazard-assessment provisions in Alberta's *OHS Code*. It can also pressurize firms to minimize OHS-related costs and increase the pace of work. Altering compensation schemes (i.e., moving away from piece-rate methods, including bonuses and penalties for timely performance) might reduce work-hastening pressures that appear to constrain workers' opportunities for and willingness to participate in hazard assessment. Altering bid requirements to compel adequate worker training in hazard identification and a standardized hazard-assessment procedure might serve to enhance worker opportunities to participate in hazard assessment, as well as broaden employer views of incident causation that appear to be a barrier to worker participation.

Changing compensation schemes and altering bid requirements might also generate pressure on smaller firms (which pose particular OHS challenges) to train workers in hazard assessment and provide workers with opportunities to participate. Approximately 60% of Alberta firms have 5 or fewer employees. Small firms are less likely to comply with OHS requirements (e.g., hazard assessments) unless compelled to do so and are less likely to have adequate OHS expertise on staff. Additional enforcement and contractual requirements (for small subcontractors) may increase the opportunity and willingness of workers in small firms to participate. Mandated hazard assessment training for workers (akin to H_2S and fall protection training) would increase workers' capacity to participate in hazard assessments.

Some workers (e.g., temporary foreign workers, precarious workers) are less likely to participate in hazard assessment due to their labour-market vulnerability. Meaningful state enforcement of employers' obligations to conduct hazard assessments may (partly) offset silence created by worker vulnerability. Employer responsiveness to concerns may also reduce the risk workers associate with raising safety concerns. Mandating JHSCs

would also create a structure through which vulnerable workers could route concerns about workplace hazards.

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WORKER PARTICIPATION IN HAZARD ASSESSMENTS

Recommended Practices

Darren Puscas

June 2013

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Worker Participation In Hazard Assessment – Recommended Practices
Review of Literature

In order to inform the development of guidelines to promote worker participation in hazard assessment, the Alberta Workers Health Centre commissioned a review of recommended practices. This paper draws from currently recommended practices to promote worker participation in occupational health and safety (OHS). The review encompassed Canadian jurisdictions (Alberta, BC, Ontario), CSA standards and the European Union. A complete list of all documents consulted is found in Appendix 1.

Worker participation is generally recognized as fundamental to effective hazard assessment as they are most directly involved in the processes to be assessed. In most Canadian jurisdictions, hazard assessment is the responsibility of worker OHS representatives and/or joint committees. Worker participation in hazard assessment is viewed as not simply a right but as fundamental to effectively assessing hazards in the workplace. In this way, it is of value to all stakeholders, including workers, management and the broader public.

While there has been a stronger emphasis on worker participation in hazard assessment (also referred to as risk assessment) throughout Europe, Canadian organizations have become more and more aware of its vital importance, dedicating resources to develop further understanding. For example, the Worker Safety and Insurance Board (WSIB), in its Musculoskeletal Disorder (MSD) Prevention Guideline for Ontario, acknowledged the fundamental need for worker participation in assessing MSD hazards: **"**Workers can play an active role in the MSD prevention process by using their experience and knowledge to recognize and assess MSD hazards and to suggest effective solutions to manage and control them... [and by] being involved in planning and implementing changes to work tasks or jobs." This acknowledges workers as active participants in all aspects of the assessment process, including finding solutions and actively implementing needed changes.

Following are further arguments for implementing worker participation in hazard assessment:

"It is important that workers participate in the risk assessment. They know the problems and the details of what really happens when they perform their tasks or activities, so they should be involved in the assessment. Their practical knowledge or competence is also often needed to develop workable preventive measures. Workers' participation is not only a right, it is fundamental to make the employers' occupational health and safety management effective and efficient."
--- European Agency for Safety and Health at Work - Workers' roles and responsibilities in Risk Assessment

"It has been shown that successful Health and Safety Management Systems have high levels of worker involvement. Worker participation in the development of the system is particularly important to create ownership and overall buy-in into the system. Additionally, worker participation in the development of the Health and Safety Management System will help ensure a better fit with the culture of the organization. To promote worker participation, actively involve them in the development of hazard assessment, inspections, preventative maintenance, training, emergency response, and incident reporting systems. Look for opportunities to get workers from all areas of the organization involved, and provide regular updates on the progress of system development to keep the feedback loop open."
--- Government of Alberta, *Building an Effective Health and Safety Management System*

"A participatory approach is more productive than an officialistic [sic], rulebook-bound risk assessment. Working conditions contribute significantly to wide health inequalities. Workers with least control over their working conditions are more apt to face multiple risks. Participatory assessment can help to turn that trend around by giving a voice to those that currently lack one. They can inform changes to working conditions from their knowledge of what they are really like. Systematic participation by workers and workers' reps at all stages of risk assessment ensures that all risks will be properly considered and makes it easier to draw up a workable prevention plan."
--- European Trade Union Institute

The search for concrete examples of worker participation in hazard assessment produced two documents from the European Union: (1) the SOBANE participatory risk management strategy developed by Prof. J. Malchaire at the Unité Hygiène et Physiologie du travail at Université catholique de Louvain (UCL) in Belgium; and (2) a review of the European Union's Occupational Safety and Health Administration (EU-OSHA) case studies completed by the European Agency for Safety and Health at Work. This report will look at each of these 'best practices' studies in turn.

1. Malchaire, J. *The SOBANE Risk Management Strategy and the Déparis method for the Participatory screening of the risks*. FPS: Employment, Labour, and Social Dialogue Unité Hygiène et Physiologie du travail at Université catholique de Louvain (UCL) Belgium.

What is it?

The SOBANE is a risk management strategy developed by Prof. J. Malchaire at the Unité Hygiène et Physiologie du travail at Université catholique de Louvain (UCL) in Belgium. It is a progressive approach to risk management involving four levels: Screening (S), Observation (OB), Analysis (AN) and Expertise (E). The focus of the strategy is less on recognition of problems and more on finding solutions through the involvement of various partners in developing strategy, specifically employees, management, OHS practitioners and experts. This global approach to problems sees the whole (partners working together) as greater than the sum of the parts (individual partners). It stresses the absolute necessity of a participative approach where workers and local management are the main agents of assessment and partners (OHS practitioners and experts) play a complementary role.

When is worker participation encouraged?

Through the work collective (workers and local management), worker participation is encouraged at all four levels of the SOBANE approach. Worker participation is the sole means of risk assessment at both Level 1 (Screening) and Level 2 (Observation). Worker/local management participation is combined with involvement of OHS practitioners at Level 3 (Analytical) and with experts at Level 4 (Expertise). Level 1 Screening always takes place regardless of the nature of the problem. The other levels only take place if the previous level leads to a need for further assessment.

Table 1: Characteristics of the four levels of the SOBANE strategy

	Level 1 *Screening*	Level 2 *Observation*	Level 3 *Analysis*	Level 4 *Expertise*
When?	All cases	If problem	In difficult cases	In complex cases
How?	Simple observations	Qualitative observations	Quantitative observations	Specialized measurements
Cost?	Very low 10 minutes per factor	Low 2 hours	Average 2 days	High 2 weeks
By whom?	Work collective	Work collective	Work collective + OHS practitioner	Work collective + OHS practitioner + Expert
Qualifications • work situation • health at work	Very high Low	High Average	Average High	Low Specialized

As shown in Table 1 (p. 14), the work collective is involved at every level regardless of the level of expertise needed. The process accepts that workers have inherent expertise as the people performing the tasks, even if additional outside experts are required. Note that it is possible for only workers and local management to participate in the entire process without outside help if screening and/or observation solve the problem.

Fundamental Concepts of SOBANE strategy

The SOBANE strategy has a number of key concepts and assumptions which underpin it and must be understood and accepted for the process to be effective:

1) Focus on work situations - The aim is to get beyond looking simply at the tasks at hand and their potential risks to looking at the whole of worklife. This holistic approach focuses on the work situation which includes:

- all physical, organizational, psychological and social aspects of working life.
- all workers and management who depend on each other.

2) Risk factors - Risk factors refer to all aspects of the work situation that could cause damage. Risk is broader than hazard (which focuses on safety only), and those involved should have this broader understanding of risk.

3) Multidisciplinary approach - A multidisciplinary approach involves joint actions of several experts/practitioners moving towards the same goal. There can be different levels of integration of the multidisciplinary approach, but it needs to be a fundamental concept and requires a team spirit.

4) Main actors in prevention - Employees and local management must be main actors of prevention. No one has the knowledge of the work situation that workers and local management have. They know the situation, how things have worked and what they want.

5) Role of OHS Practitioners and Experts
a) Who are they? OHS practitioners include safety officers, occupational nurses, physicians, ergonomists and others who have been trained in Occupational Health and Safety. Experts are people from specialized labs (e.g. toxicology, mental load, stress).
b) Role - The OHS practitioner or expert brings her/his skills to a process that is already happening. Workers may have limited knowledge of risks but leading them will give them the impetus to figure out ways to work better and safer.

6) Special understanding of Small and Medium Sized Enterprises (SMEs)
SMEs have a greater risk factor, including higher accident rates. They are also often more reticent to make change than are larger enterprises. In attempting to get SMEs on board with participatory hazard assessment, special focus should be placed on the benefits to SMEs of having a Health and Safety strategy, such as better health, quality, production, safety and bottom line.

Participation of Workers

Participation should take place continually rather than only at specific moments and should be related to the whole process of work and the work situation. There are numerous imperatives that must be followed if the SOBANE strategy is to be effective.

It must be:
- voluntary - workers take part of their own free will without coercion

- direct - workers are directly involved

- active - partners must take part in local working groups

It must involve:

- partners on equal terms willing to be partners in participation

- building negotiated consensus with each other

- the "whole system of work" and the work situation

- a continuous process integrated into daily work

- employers unambiguously declaring objectives

- employers 'scrupulously respecting' the labour-management health and safety committees

It also must be combined with a verification system utilizing an OHS practitioner for technical risks to ensure they are not forgotten by new worker participants. This is because technical risks are high (e.g. fire risk).

One of the key questions the SOBANE method asks is whether or not a risk management process is consultative or participatory. Understanding the difference between consultation (e.g. questionnaires, surveys) and participation (worker control over issues discussed, steering of discussions, and decision making power) helps to clarify and to better assess the effectiveness of the hazard assessment process. A consultation process has workers naming the risks for management to make decisions on later. Both approaches are valuable if working in tandem, but if using consultation in isolation, it should not properly be considered full worker participation. (p.7-8).

Déparis (Level 1) Methodology

The paper goes most in-depth in laying out the methodology of Déparis (Level 1 of the SOBANE strategy). The Déparis method is simply the screening process used to initially determine risks and to review the work situation. A Déparis meeting involves both workers and management in determining potential hazards in the workplace. All aspects of work life

(technical, relational and organizational) are reviewed in the meeting. A coordinator is designated with agreement and direction of the employees.

The two main aspects of the Déparis method are:

1) Déparis Systematic Review

At Level 1 a systematic review by employees and technical management takes place. Eighteen aspects of the work situation are reviewed in order as they move from the general to the specific and they are addressed one-by-one. The 18 aspects to be reviewed are as follows:

Focus on the overall organization
1. Premises and working areas
2. Work organization

General security risks
3. Work accidents
4. Electricity, fire and explosions

Focus on individual workstations
5. Controls and signals
6. Work material, tools, machines
7. Work postures
8. Efforts and handling operations

Environmental hazards
9. Lighting
10. Noise
11. Radiations
12. Chemical and Biological hazards
13. Thermal environments

Psychosocial

14. Autonomy and individual responsibilities

15. Work content

16. Time constraints

17. Relationships between workers and with the hierarchy

18. Psychosocial environment

2) Formation of a discussion group/working group

The formation of a discussion group or working group is the main locus of participation. The discussion group is made up of two to four key workers designated by their colleagues. Other discussion group members designated by the employer must be accepted by the employees.

Participants are asked to consider the cost solutions proposed by the coordinator and their impact as well as who could implement the solution, how and when. After the meeting, the coordinator writes a synthesis which participants review.

For each facet of worker participation, the Déparis guide lists a series of points for workers and local management to follow, discuss and take notes on:

1) Who can implement improvements and when.

2) How much changes and improvements will cost. Workers are encouraged to look for cost solutions.

3) What needs to be studied further.

4) An overall assessment of priorities; which changes need to be acted upon with greater urgency utilizing a "green" "amber" and "red" system.

5) Who is to do what and when. This is done using already developed Déparis worksheets which contain numerous areas of focus for the groups to discuss. Some of the areas include workshops, work organization, falls, mechanical risks, loads, hand effects, lamps and noise.

Results:

Between 2003-2005, the Déparis guide was used in 80 meetings in 80 companies from nine different industrial sectors. The meetings led to an average of 12 proposals for improvement per meeting. Seventy-six percent of these proposals had little or no cost.

Sixty percent of the solutions were very practical while the other 40% went beyond ordinary health and safety issues to work procedures, work quality and productivity.

There is a degree of time needed to complete this process that factors into how strong the results are. It takes time to convince employers and employees alike of the importance of the process. The meeting itself takes two hours and the time needed to complete the meeting report an additional two hours. Though this time commitment is significant, it is "definitely lower than the cost of interventions of consultants." (p.25).

B. 2012 European Agency for Safety and Health at Work, Members of the Topic Centre on Occupational Safety and Health, *Worker Participation Practices: A Review Of EU-OSHA Case Studies.* Contributors: Juliet Hassard, Dan Dan Wang, and Professor Tom Cox CBE (I-WHO), United Kingdom (Task leaders); Marie-Amélie Buffet, (EUROGIP), France; Roxane Gervais and Nikki Bell, (HSL), United Kingdom; Ferenc Kudász (OMFI), Hungary

While the SOBANE strategy described above provides a methodology for worker participation in hazard assessment, the EU-OSHA case studies provide a much more robust description of examples of worker participation in practice. Further, while not taken directly from the SOBANE strategy per se, many of the key methods of worker participation utilized throughout the case studies are similar to those advocated by SOBANE. This is especially true when looking at the large number of EU-OSHA cases utilizing work teams, as work teams are also central to the SOBANE approach.

Methods of Worker Participation

Effective worker participation is consistently shown to be a basic requirement for the successful identification of problems and implementation of practical solutions, regardless of the size or type of workplace or type of problem. The case studies exemplify this. Involvement of employees and their representatives to identify problems and develop solutions is crucial to success, as workers have firsthand experience of the work situation (p. 8).

Surveying the 161 case studies showed that the following are the most frequently employed means of worker participation:

- Work-teams, including such activities as meetings to discuss analysis results and analysis method solutions, trials to test teams' proposals and team presentation of ideas to management
- Surveys
- Workers council
- Local steering committee
- Interviews with worker representatives and workers in general
- Testing
- Workshop sessions
- Project evaluation questionnaires
- Staff representative survey
- Health circle meetings

Other worker participation methods utilized included:

- New management system incorporating staff involvement and communication
- Self assessment questionnaires
- Staff consultative meetings
- Workplace awards
- Brainstorming with workers
- Logbook for workers' ideas

- Ergonomic working group/improvement team
- Information exchange between workers
- Brainstorming with workers
- Workers consultations
- Course materials
- Joint prevention committee
- Trials and mock-ups involving employees
- Participation of representatives from different companies
- Discussion committees
- Testing of solutions by workers
- Demonstrations, information days, news articles
- Joint management–worker representative training
- Employee ambassadors
- Employee feedback
- Interactive training sessions
- Contracts between labour and management to guarantee commitment
- Meetings with employees
- Employees were encouraged to share their stories
- Consultation with labour councils and employees' representatives
- Benchmarking and risk-assessment questionnaire
- Field studies
- Problem solving teams
- Staff meetings

- Health day

- Experience exchange groups

- Safety meetings

- Updating materials and manuals

- Participatory discussion

- Identify stresses

- Transparent communication channels

- Designated spokesperson for the workers

- Quality circles

- Testing new specifications

- Workshop design

- Joint brain storming

- Project implementation group

- Communication route for employee OHS
  concerns

- Collection of data

- Development of prevention strategies

- Formalized discussion of attitudes,
  awareness, knowledge of hazards

- Open and transparent policy for dealing
  with bullying, harassment and threats

- Tailor made questionnaires to obtain annual
  feedback

- Participation system

- Multidisciplinary working group to bring
  forward recommendations for action

Many of the cases involved consultation rather than participation according to the SOBANE definition. Surveying the 161 cases, it appears that 43 (26.7%) could be said to be consultative only while 118 (73.3%) would have at least one major participatory aspect.

Hazards Addressed

The numerous case studies give an extensive overview of the variety of means of worker participation in hazard assessment and the strategies employed to improve the process and improve health and safety in the workplace. A large variety of risks were seen to require worker participation throughout the case studies. A review of the 161 case studies shows a wide variety of types of risks:

39 - High accident risk/frequency, physical danger

31 - Mental strain or stress or burnout

28 - MSDs

12 - Multiple psychological and/or physical risks

12 - Chemical hazards

12 - Physical strain

9 - Health/lifestyle risk

8 - Violence, bullying, intimidation, and harassment

8 - Noise

7 - Psychosocial risks

7 - Youth specific accident risks

3 - Work-life balance

3 - Disadvantaged groups specific risks (e.g. the temporary unemployed, underprivileged, immigrants and part-time students)

2 - Addiction

2 - Gender risks

2 - Older worker specific risks

1 - Fatigue

1 - Physical violence

1 - Mental intimidation or violence

Sample Case Studies

Case Study 9 - Programme for a safety hospital - 'safe care'

Sectorfondsen Zorg en Welzijn - hospital in Netherlands

Main problem: High incident rates of mental and physical violence, sexual intimidation and threats

Main action: Introduction of a zero-tolerance of violence scheme

Worker participation

1. The management and works councils agreed on the framework for action.

2. A working party comprised of staff from at-risk departments was created..

3. The working party created a risk inventory. Rooms were coloured based on risk level (red, yellow, green).

4. A 'card system' was used to break down the types of aggression.

5. A survey was carried out to find out when most incidents occurred.

6. Meetings every six weeks between management and staff were held to consult on risks and progress.

7. Training in customer relations, dealing with aggression and self-defense were provided.

Result: 30% drop in physical aggression and 27% drop in verbal aggression.

This case involved a very thorough use of worker participation focused on working group participation and a detailed process. They used a multitude of techniques, both consultative and participatory. The key appears to be the extent to which workers are involved at every step

through the working group. This fits with the SOBANE ideal of dedicated working groups at the core of recommended practices.

Case Study 16 - 'Work positive' – a stress management approach for SMEs – Health Education Board of Scotland (HEBS) and Health Safety Authority (HSA) in Ireland

United Kingdom - ENTEC UK

This was a case using a consultative approach, but it is included here because it is one of the few participation efforts focused on Small and Medium Enterprises (SMEs), though it was not implemented by a SME itself. It was commissioned by the HEBS and the Irish HSA which hired a consultancy company to carry out the project.

Main problem: Work related stress

Worker Participation
Workers were asked to complete benchmarking and risk-assessment questionnaires regarding the stressors experienced in the workplace. A smaller number of workers were asked to complete risk assessment interviews.

Result: "97% of coordinators found the benchmark questionnaire was useful in identifying improvements in systems to reduce stress. 64% of all those who completed the risk-assessment questionnaire thought the questionnaire covered all the potential sources of stress in their organisation."

This case provides a possible way forward on workers' participation in hazard assessment in SMEs. Through government initiative, worker participation could be pooled beyond single enterprises which may not have the resources to plan and implement such a program.

Case Study 24 - 'Take care' – a team-based burnout intervention programme for oncology care providers

29 oncology wards in Netherlands

Main problem: Work related stress

Worker Participation

1. All staff members of the participating 29 oncology wards participated the questionnaire survey.

2. Staff support groups were created with the aim of finding solutions collectively for prevalent work stressors.

3. Training developed: small teams were formed that collectively designed, implemented, evaluated and re-formulated plans of action; trained in general communication and collaboration skills. The participants were their own 'agents of change' and the counselors their 'coaches'.

4. Kick-off meetings were held on each ward to increase the staff's commitment to participate.

Results: A bit more subjective, but a qualitative evaluation showed that participants considered the approach to be useful for understanding work stressors and for building plans of action. Again, there was a focus on working groups where workers collaborate.

Case Study 46 - Avoiding manual handling using a vacuum device to lift meat

Denmark - Slagteriselskabet DANISH CROWN a.m.b.a. Meat Processing Plant

Main problem: Heavy meat lifted frequently was causing back problems for numerous employees. The aim was to develop a "meat magnet" to lift the slabs of meat based on worker participation in its development.

Worker Participation

Multi-pronged approach
• Consultative: Worker consultation and feedback throughout the project
• Participatory: Occupational Health Service worked with a special project group and the
  company's joint prevention committee. Safety representatives were involved in testing and
  then all employees were able to both discuss the project and test the new meat magnet.

Nearly all employees said the magnet was helpful for the tasks and 60% said it was reducing the
strain on their backs, shoulders, wrists and other parts of their bodies.

The process used also had effects beyond the meat magnet. The interest of workers in
participating in work environment improvement activities increased and ideas put forward by
employees for technical innovations were implemented. The work environment and interactions
between staff were also seen to have improved.

Case Study 56 - Use of participatory ergonomics to identify and solve high-risk tasks

United Kingdom - GlaxoSmithKline - Employee Health Management

Problem: MSDs were affecting workers at a pharmaceutical plant.

Worker Participation
Working group of workers - A dozen experienced workers were trained and formed the
Ergonomic Improvement Team (EIT). They met regularly and sub-groups investigated specific
aspects of the problem. The EIT investigated ergonomic problems in a variety of work settings
and used video observation. Measures were launched with the full participation of the workers
concerned.

This was a particularly effective example of worker participation. Within a year, 31 work system
improvements had been achieved: "Twenty-five reduced workers' exposure to multiple risk
factors through the introduction of new work equipment and ways of working or modifications to

the existing equipment or work layout. A 40% reduction in the number of MSDs attended to on site by the company physician was achieved."

Case Study 104 - Protocol for safe building renovation

Italy - Unità Funzionale di Prevenzione Igiene e Sicurezza nei Luoghi di Lavoro Alta Val d'Elsa, Azienda USL 7 di Siena

Renovation of a historic building into a luxury hotel complex

Worker Participation
Created a protocol agreement involving the workers and their representatives, the companies involved, and the contractors. Proposed measures for coordination on accident prevention. Involved workers and their representatives in the design stage to determine the nature of the work itself, the steps needed to be taken, and the risks to the workers' safety. Site technicians were involved in developing training on occupational safety and health. Trade unions were also involved in project development.

Results: Considerably lower accident rates than average at other construction sites.

Key quotations from the study's conclusions

The following quotations demonstrate the importance of active worker participation from the beginning to the end of the risk assessment process.

Managing risks to drivers in road transport (p. 151)

"The active participation of workers from the beginning and throughout the intervention was highlighted as a key success factor in a number of cases. In particular, it was found to increase the interest, engagement and motivation of drivers in participating in the programme and

changing/adapting their working behaviours. Increasing the participation of workers was accomplished in a number of ways; for example, by having more experienced drivers deliver training and feedback sessions, and providing commentary on the development of OSH policies and organizational practices through surveys and focus groups."

Prevention of risks in construction (p. 152)

The case 'achieving employee participation in health and safety management systems' demonstrated that with commitment, and by making available adequate time and resources, cooperation with employees can be achieved, to the benefit of all concerned. A participative approach between the company and the workers council is a critical factor in the successful outcome, as was cooperation with outside experts.

In this case, employees were actively involved in the project from the very early stages and they were consulted throughout the process (e.g. launch event, analyzing the existing problems, proposing solutions, evaluating the results).

Safe maintenance in practice (p. 153)

"Although it is always good practice to involve the employees in the process of risk assessment, cases clearly demonstrate that for maintenance operations it is all the more necessary to involve in the process those who will carry out the work. Without their input, it is difficult to identify all hazards, analyze all the various aspects of the work and situations that might arise, and to decide on the most effective and suitable methods to control the risk involved.

It is important to involve workers in the maintenance management during the whole process, from planning to the final evaluation. Active employee participation in safety and health management is important to build ownership of safety at all levels and exploit the unique knowledge that employees have of their own work. Quite often they already know and can suggest practical ways of eliminating or mitigating the risks."

Prevention of risks in construction in practice (p154)

"A participative approach between the company and the workers council is a critical factor in the successful outcome, as was cooperation with outside experts. (page 52) In this case, employees were actively involved in the project from very early stages and they were consulted throughout the process, i.e. launch event, analysing the existing problems, proposing solutions, evaluating the results."

Conclusion

The above EU-OSHA case studies, the quotations and the authors' findings were chosen to offer a snapshot of the various types of hazards dealt with in workplaces and to show a variety of means of participation that have proven effective in assessing these hazards. Work-team assessment was proven to be effective in a number of the cases, as were questionnaires, risk assessment interviews and surveys. Many of these sample cases and quotations showed the value of having worker participation take place throughout the process and in a collegial, non-threatening atmosphere. For example, Case Study 9 - Programme for a safety hospital, shows the importance of working group participation and a detailed approach that workers are directly involved in from the very beginning of the hazard assessment process.

The cases and quotations further show the importance of collaboration between workers, management and outside experts as suggested was necessary in the Déparis methodology in the previous section. For example, Case Study 56 (use of participatory ergonomics) shows the value of having management, workers and outside experts involved in the process from the beginning. Further, it shows the value, indeed necessity, of voluntary, direct and active participation of workers.

Some conclusions of the authors:
"Clear evidence to suggest that organizations, irrespective of their size or type of industrial activity, that have good worker participation as a key component of their health and safety system are safer and healthier places to work" (p.160).

"does not have to be complex; indeed often simple approaches and measures can be effective" (p.160).

"benefits beyond improving health and safety management: higher motivation and performance, fewer intentions to quit, and decreased turnover" (p.160).

Active worker participation in the interventions reviewed can be linked with:
-significant observed reductions in injuries and enhanced occupational health [reduced costs];
-decreases in sickness absence;
-improvements in employee morale and generation of practical solutions to workplace problems;
-enhanced organizational communication and clearer objectives; and
-assisting in the development of safe systems at work that are shaped by operational reality.
(p.160)

C. Conclusions from the two studies

There is a significant amount of support for worker participation in hazard assessment in Europe and there are numerous examples of its successful implementation. Both studies made clear that effective worker participation would include active participation from beginning to end, make available adequate time and resources and involve cooperation of outside experts. It also must involve "whole system of work" and the work situation.

The most successful implementations are those that included a multitude of strategies, both consultative and participatory. This includes work-teams, surveys, local steering committees, testing, workshop sessions, questionnaires and health circle meetings. That said, the single most effective means of worker participation in hazard assessment is through dedicated work teams with real decision making power, joint decision making power or, at minimum, channels of strong influence that go beyond basic consultation.

Worker participation must be voluntary, direct and active with all partners on equal terms as they build a negotiated consensus. It became clear that for any participatory assessment strategy to work, workers had to feel they could trust management when they spoke up and, as a corollary, employers needed to 'buy in' and 'scrupulously respect' the labour-management health and safety.

It is important to highlight that the vast majority of these cases involved large scale enterprises with the means to implement these sometimes elaborate worker participation schemes. Nevertheless, there were a few cases that provided a bit of a roadmap for workers' participation in hazard assessment in SMEs. One case in particular, coordinated by the Irish and Scottish governments (profiled in this report), showed how government involvement and pooling of resources could alleviate some of the limitations faced by SMEs in implementing workers' participation initiatives. There was also a successful ergonomics program set up for Finnish SMEs (Case Study 48) by the Finnish Institute of Occupational Health that also used this 'pooling' approach.

Appendix A: Documents Consulted

Danish Working Environment Council for the private sector of office and administrative work (Bar Kontor), 2005. Workplace Assessment in Place? Sector Guidance on Workplace in Office Workplaces
http://www.barkontor.dk/Files/Billeder/BARkontor/pdf/Sector_Guide_on_Workplace_in_Office_Workplaces_netudgave.pdf

European Agency for Safety and Health at Work "Worker Participation in safety and health"
https://osha.europa.eu/en/topics/worker-participation/index_html#Risk_Assessments

European Agency for Safety and Health at Work, 2012. "Worker participation practices: a review of EU-OSHA case studies Literature review". Ed. Juliet Hassard, Dan Dan Wang, and Professor Tom Cox CBE (I-WHO), United Kingdom (Task leaders), Marie-Amélie Buffet, (EUROGIP), France, Roxane Gervais and Nikki Bell, (HSL), United Kingdom, Ferenc Kudász (OMFI), Hungary https://osha.europa.eu/en/publications/literature_reviews/worker-participation-practices-a-review-of-eu-osha-case-studies

European Agency for Safety and Health at Work, "Workers' roles and responsibilities" in risk Assessment https://osha.europa.eu/en/topics/riskassessment/workers_role

European Trade Union Institute. "Workers' Participation and Risk Assessment resources" http://www.etui.org/Topics/Health-Safety/Safety-reps/Workers-participation-and-risk-assessment

Government of Alberta. "Building an Effective Health and Safety Management System." Partnerships in Injury reduction. http://humanservices.alberta.ca/documents/whs-ps-building.pdf

Hazards Magazine, 1997 "Mapping Out Work Hazards" http://www.hazards.org/diyresearch/riskmapping.pdf

Malchaire, J. "The SOBANE Risk Management Strategy and the Déparis method for the Participatory screening of the risks." FPS: Employment, Labour, and Social Dialogue Unité Hygiène et Physiologie du travail at Université catholique de Louvain (UCL) Belgium

Occupational Health and Safety Council of Ontario (OHSCO), "Part 1: MSD Prevention Guideline for Ontario", Musculoskeletal Disorders Prevention Series http://www.wsib.on.ca/files/Content/Downloadable%20FileMSD%20Guideline/OntMSDPrevGuideline.pdf

Ontario Ministry of Labour, 2012 "Musculoskeletal Disorders / Ergonomics resources"
http://www.labour.gov.on.ca/english/hs/topics/pains.php

SOBANE Unité Hygiène et Physiologie du Travail DEPARIS documents
http://www.deparisnet.be/DeparisEngl.htm

Worksafe B.C. "What is Risk Assessment" FAQ
http://www2.worksafebc.com/topics/ergonomics/FAQ.asp?ReportID=33232

2.0 Worker Participation
Why It Matters

Best Practice Guidelines:
Effective Worker Participation in Hazard Assessments
Alberta Workers' Health Centre, December 2015

About the Alberta Workers' Health Centre:
The Alberta Workers' Health Centre is a registered charitable, non-profit organization that supports all workers, unionized and non-unionized, who need assistance to help make their workplaces healthier and safer. Since 1983 it has done this through programs of education and training; research and information; assessment and support for workers across Alberta.

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Alberta Workers'
Health Centre

CUPE·SCFP   UNIFOR

A hazard is any situation, condition or thing that may be dangerous to the safety or health of workers.

A hazard assessment is a systematic method by which hazards are identified and eliminated. It is based on evidence, experience and recommended practices.

It is the law in Alberta that an employer must involve affected workers in the assessment of hazards at work. These guideline promote effective participation of workers in hazard assessment.

Why is this important?

Our health and our work is very important to every one of us. Work provides us with income and self-esteem. To suffer illness, injury or disability for any reason affects us in many ways. It can have long term and devastating impacts if the illness, injury or disability affects our ability to work. To suffer illness and injury because of our work is doubly problematic because in many cases the cause is preventable through the use of basic health and safety tools like hazard assessment and control.

In Alberta alone, over 150,000 workers file an injury or illness claim each year. Most of us know someone who has suffered a disabling injury or illness because of work. Injured workers are often stigmatized, and blamed for their own suffering and for becoming unemployed.

Working conditions affect all of us.

Worker participation in hazard assessment and in health and safety is necessary for many reasons. Here are just a few:

Worker Participation: A human right.

Our health and safety at work and in society are human rights. No longer are people expected to work under unsafe and unhealthy conditions without adequate training and resources to protect them. No matter where it occurs – in

Canada, Bangladesh, China or Brazil - there is public outrage when workers are required to risk their lives and futures as a cost of making a living.

Risk vs Hazard.
These terms are often used interchangeably but they can be used to mean different things. The hazard is the event or condition and the harm that it creates. Risk is the likelihood that the hazard will occur. Hazard assessment is primarily concerned with the harm that may occur. Risk is one consideration in determining the appropriate action to take. Risk assessment may focus primarily on the likelihood that an event will occur. It is often used to minimize concerns and to postpone action.
The Alberta Code requires that a hazard assessment be conducted and that appropriate controls be taken.

Some workers respond to emergency and upset conditions as part of their job to address hazardous conditions. Proper training, protective equipment and adequate resources are a minimum standard which employers of emergency response workers must meet. While this guide is not designed to address that highly specialized work of emergency responders, the same fundamental principles apply.

At one time, it was believed that simply by accepting payment a worker accepted the risks of his or her work. Today, a worker has the right to expect that the employer has planned the work to be done safely. A worker has the right to know about any hazards and the right to give feedback without fear of reprisal.

Worker Participation: It can be effective and make a difference.

Worker participation in hazard assessment improves the results of the assessment when it takes place in a positive and supportive environment. Support does not mean that everyone sits in a circle and sings a happy song. It means that workers are provided with the mechanisms, training and tools with which to take part. Workers need to be confident that their input and advice will be considered without reprisal. Research and experience that has identified circumstances and resources which facilitate participation will be discussed further in this guide.

What we know from studies and experience is that when workers participate within a supportive structure and can see that their advice is acted upon, hazards are addressed and conditions improve.

On the flip side, we know that not all workers are interested in actively participating in Occupational Health and Safety (OHS) beyond their own work. Workload, rates of pay and a belief that their opinion is not given much weight often dissuades workers from actively participating in OHS beyond doing their own job as they have been directed.

Active worker participation is supported in recommendations from many governmental and non-governmental organizations. This is clearest in Europe where worker participation in OHS is fully supported by many institutions. In Canada, recommendations about worker participation in hazard assessment are found in all jurisdictions - provincial, territorial and federal. Here are some examples:

It is important that workers participate in the risk assessment. They know the problems and the details of what really happens when they perform

their tasks or activities, so they should be involved in the assessment. Their practical knowledge or competence is also often needed to develop workable preventive measures. Workers' participation is not only a right, it is fundamental to make the employers' occupational health and safety management effective and efficient.

European Agency for Safety and Health at Work - Workers' roles and responsibilities in Risk Assessment

It has been shown that successful Health and Safety Management Systems have high levels of worker involvement. Worker participation in the development of the system is particularly important to create ownership and overall buy-in into the system. Additionally, worker participation in the development of the Health and Safety Management System will help ensure a better fit with the culture of the organization. To promote worker participation, actively involve them in the development of hazard assessment, inspections, preventative maintenance, training, emergency response, and incident reporting systems. Look for opportunities to get workers from all areas of the organization involved, and provide regular updates on the progress of system development to keep the feedback loop open.

Alberta Government, Building an Effective Health and Safety Management System

Worker Participation: The importance of including the workers' standpoint.

Researchers have identified the importance of incorporating a workers' standpoint into the assessment of OHS in order to improve outcomes.

It is important to understand the standpoints of the different players in the OSH system because people act on the basis of how they see the world, how they understand the situation they are in and the stakes at play, and how they conceive others in the system and their relationship to them.[1]

Standpoint means to stand in the shoes of another group and see the situation from their perspective. The primacy of the managerial viewpoint often makes the workers' standpoint invisible, frustrating effective action to resolve problems.

Ineffective action to resolve problems also wastes money. Economists who evaluate OHS interventions identify the need for incorporating the perspective of workers as well as that of management in determining what is to be done. [2]

Worker Participation: A legal requirement.

Part 2 of the Alberta Code of Practice sets out the legal requirements of hazard assessment in three sections. Section 7 sets out an employer's responsibility. Section 8 requires an employer to involve affected workers in the process and to inform affected workers of the hazards and steps taken to control or

eliminate them. Section 9 sets out the measures that an employer must take to eliminate or control the hazards.

What is the practice?

An online survey was conducted March 26 through April 25, 2013 with 2,000 workers (age 18 and older) recruited throughout Alberta for the Vector Poll.tm [3] Participants were asked a series of questions about their awareness of and experience and participation in worksite hazard assessments. Follow-up interviews were then conducted.

As one would expect, there was a range of responses. Significant differences exist between sectors, age groups, size of employer and gender. Some of those differences will be explored later in this guide.

> (Field Level Risk Assessment), in my opinion, is a device for the company to point blame at workers if an incident happens.
> The main push back (from workers) is that the forms are used as a way to put blame back on the worker.
> An employer doesn't sit down with workers to develop a JHA that will make work safe. The purpose of the JHA is remove the liability from the company and put it onto the worker
>
> **Focus group participant**

Overall, 70% of respondents surveyed said they know what the term "worksite hazard assessment" means. Only 41% said that worksite hazard assessments are carried out at least once a week at their workplace. Those most likely to say worksite hazard assessments are carried out at least once a week were workers exposed to the most potential health hazards.

Seventy-five percent of workers in Alberta knew before the interview that they had a legal right to be involved in OHS and make suggestions for improvement. Despite this level of awareness, only 19% said that they participated regularly; 45% were asked rarely; and 15% were never asked. Of those workers who had participated, only 50% were involved in identifying risks.

When asked why they did not participate, most cited lack of time, lack of pay and lack of influence. A small group of workers were very active in OHS. While this group represented only 18% of the sample, they were the most highly involved in hazard assessment and achieving outcomes.

While only 56% of the sample ever reported a complaint to a supervisor, those who did were more likely than not to get a positive result from their actions. Those more active in OHS were more likely to raise issues and have them addressed.

Overall what the results of the survey tells us is this: There is knowledge and awareness by workers that they have the right to participate. Some employers do practice regular hazard assessments but few workers participate in them. Most workers lack interest in greater involvement in OHS because of lack of

time, lack of pay and lack of influence. Those who participate most effectively are workers who spend most of their time working on OHS.

CAVEAT. The survey did not include migrant workers in the province under a temporary work program. Self employed and individual contractors were also less likely to be included. These limitations and their implications will be explored more fully later in this guide.

Successful prevention of illness, injury and disability caused by work is the result of the engagement of management responsibility, worker participation and inspector enforcement. Each plays a critical role. The system does not function well without all three components working. This does not mean working without tension or disagreement. Employers are driven by profit. Workers face increasing workloads and fewer job choices. Political influence curtails what inspectors can do.   What we know is that handling the relationship through a systematic process in which roles are defined, and people are trained and confident that they can speak out without fear of reprisal will make a difference in prevention. In any given workplace, the imbalance of power between the employer and workers is such that inspectors must play an effective role in ensuring that workers can participate, as well as monitor for compliance with other regulations.

Employer Responsibility

Worker Participation

Inspectors Enforcement

The Big Picture – The Reality Check

The employer creates the situation and circumstances under which work is done. The work is designed and being implemented before the worker arrives. Worker participation in OHS is most effective when employers approach their responsibility from the very top of the organization, at the beginning and at every stage of the work process. Before the work involves the worker, each stage of planning and design must take health and safety consequences into account. This is both eliminating the hazard at the source and reducing the number of hazards that a worker must confront. Elimination of the hazard is the most effective means of prevention and required by law to be the first consideration when deciding how to control it. Worker participation is an essential feedback loop on the effectiveness of management's approach to health and safety.

What are the challenges to effective worker participation?

In preparing this guide, the Alberta Workers' Health Centre commissioned Professor Bob Barnetson from Athabasca University to write a discussion paper on the barriers to worker participation. His paper identified a number of substantial

barriers to worker participation. They are briefly summarized here. The complete discussion paper forms part of these guidelines.

Barriers to Worker Opportunities to Participate

This section examined general conditions of the work that act as a barrier to the effective participation of workers.

Organization of work

Increasing subcontracting undermines traditional organizational structures (i.e., a single employer, centralized management, common conditions and rules of works) and results in work being completed by a mixture of permanent and temporary employees, as well as contractors (both companies and individuals). Some organizations may also operate (on) multiple worksites where their workers interact with workers and contractors employed by other organizations. In 2012, Alberta had the highest ratio of business locations to population in Canada.

This situation often results in a loss of in-house OHS knowledge, a devolution of managerial responsibility for management tasks, and a loss of clarity as to who is responsible for what.

On large worksites, the sheer number of parties involved in performing the work may reduce the opportunity for workers to participate in hazard assessment.

Pace of work and compensation schemes

Payment on a piece-rate basis (or "payment-by-results") is an increasingly common form of remuneration, particularly (although not exclusively) in industries with significant levels of subcontracting.[4] In conjunction with the profit incentive, piece-rate pay incentivizes haste. Significant competition among subcontractors that has driven down the value of bids and/or contractual terms containing incentives for early completion (or penalties for late completion) may compound this work-hastening effect.[5] Technological changes may also trigger work hastening in more traditional organizations as they adopt lean production models that are associated with increased injury outcomes. These pressures can lead to "pro forma" or superficial hazard assessment.

Musculoskeletal injuries (MSI) due to repetitive strain are the most commonly recognized form of work injury. MSIs can become permanent and, lead to repeated underemployment and even long term unemployment. The largest and most rapidly increasing work-related disabilities relate to mental illnesses.
Persistent night work causes an increase in cancer among workers.

Environmental limitations

The conditions under which work takes place – location (if not regular work place), climate, travel, time of day - can impact whether or not hazard

assessments are carried out and the quality of the assessment. Combined with work demand pressures, environment can limit opportunities.

Stigmatizing workers

Some employers and workers believe only worker behavior is the cause of accidents. Stigmatizing terms, such as "careless" and "accident prone," are used to describe injured workers. Some companies, under a so-called "zero tolerance" policy, discipline workers who have accidents or complaints. These opinions, and programs called "Behaviour Based Safety" (BBS), are notorious for suppressing worker participation, and encouraging workers not to report their concerns or injuries.

Sometimes BBS is dressed up and called "safety culture" or "safety climate." The focus on attitudes and individual worker behaviour remains fundamentally the same. The only published study done of worker observation (a key element of these programs) demonstrates there is no direct link between the number of observations and any reduction to the number of injuries or accidents.[6] What matters is how the work is organized, identifying all the hazards at first opportunity and engaging worker participation.

There are three essential flaws in BBS. Firstly, the employer not the worker designs, plans and directs how work will be done. Specifications for work are provided with great detail describing what must be done and how long the worker must take. What the worker does is the result of those specifications.

Secondly, safety is a matter of employer practice not just worker attitude. A big sign that says "Safety First" is meaningless when workers know that the employer is cutting costs by reducing preventative maintenance or paying only lip service to health and safety. Workers are most influenced by the practice of their employer and supervisors.

Thirdly, hazards to health and safety are the result of the way the employer has organized the work. Today, technologies – computers, internet, GPS, robotics - have reduced worker control over the job in both the scope of decision making and the ability to fully understand the process she or he is dealing with. These conditions create unseen and repetitive hazards to which the worker must respond.

BBS is wide spread in industry. It reduces worker participation to cart-horses while providing little improvement in safety over time. Initial improvements measured in reduction of lost time are inevitably explained by report suppression and increasing dissatisfaction.

Yes, worker behaviour is a key element of how work is done. That behaviour, however, is subordinate to the conditions, rules and directions provided by the employer. Human factor analysis shows how particular individual behaviours at

work are promoted by the organization of work.[7] Prevention requires attention to the underlying factors.

Barriers to Worker Capacity to Participate

Definition of hazard

"Serious to whom" is the critical question in hazard assessment when hazards are defined solely by the employer. The definition can be very narrow – focusing on only physical hazards or on only the hazards related to the specific task at hand. A narrow definition leaves workers exposed to many unseen and uncontrolled hazards.

Hazard is defined broadly by the Alberta Code to mean "any situation, condition or thing that may be dangerous to the safety or health of workers." Comprehensive prevention must consider and address many different kinds of hazards.

The worker relies on the employer to provide information about all relevant hazards. How the employer provides this information makes a big difference to worker participation. Perfunctory orientation, rushed training and/or a casual approach to hazard assessment conveys the message to a worker that hazards at this workplace are not a serious concern.

When employers are serious about addressing hazards, workers may still find that their concerns are summarily dismissed or rejected without serious consideration. This creates a deep sense of lack of influence and undermines a worker's interest to be more involved.

Size of firm

Small companies often lack the resources to provide support for a full range of hazard assessment. Fewer personnel make it unlikely that there is someone primarily responsible for health and safety. Those small companies that provide specialty services are often focused only on the particular hazards related to their specialty.

However, the survey suggests that although hazard assessment occurs less in smaller workplaces (less than 20 employees), individual workers are more likely to be directly involved when it does happen.[8]

Precarious employment

Precarious work is paid work characterized by limited social benefits and statutory entitlements, little job security, low wages and high risks of ill health. Migrant, temporary, part time and self-employed work are often precarious. There has been a marked increase in precarious employment in Canada. Studies have demonstrated both an increased risk of injury and illness among precarious workers. Precariousness makes workers very reluctant to adress any

concerns. Similar in many ways to the situation of small businesses, precarious employment intensifies the problems of lack of resources and support.

Hazard assessment training lacking
Workers need training to participate effectively in hazard assessment. Such training is still limited as a component of occupational training, even for high-skill, high-risk jobs.

> You don't know the consequences of (pointing out hazards). You never know if they can fire you. … At work, we're supposed to be seven guys but there are only two guys. But you can't tell the managers "you are killing me by making me do the work of seven guys". So it is difficult. If you do that you'll be fired. That is what is going on in our mind. No one wants to be fired. (Interview 4)
>
> Absolutely (workers are afraid). Intimidation, bullying by department heads, especially when it is coming down to deadlines. You don't say anything . (Interview 15)

Barriers to Worker Willingness to Participate

Fear of speaking up
Workers often report that they fear speaking up about safety matters.[9] This fear reduces the willingness of workers to participate in hazard assessments.

There are a wide range of reasons why workers fear speaking up. As in the examples above, many fear the response of their supervisors and management. Even if not fired, reprisals can occur especially if what is said is seen to put the supervisor or manager in a bad light. It is one thing to help out a co-worker or complain about something that is obvious. It is another when the concern has a cost or productivity implications. For many workers, getting more involved in hazard assessment is a cost. The rest of the work still has to be done, there is no extra pay and the employer may not like what is said.

How hazard assessment is presented and practiced makes a difference. Check lists can be either helpful aids or the sign of a tick-off culture. Bureaucratization of safety – going through the motions, focusing only on the small things, paying lip service to requirement - undermines confidence and diminishes the purpose of worker participation.

Employer-created silence
Related to worker fear of speaking up is employer-created silence. Workers resort to silence strategies when they believe that speaking up will not make any difference. Over time, this dynamic (silence = inaction = more silence) has the potential to create a form of learned helplessness (or hopelessness). Employers silence worker participation in many ways. From bullying and yelling at workers to ignoring input, a manager or supervisor clearly conveys the message that they are not interested in what a worker thinks unless it agrees with their own view. Such abuses of power are short sighted and undermine workplace morale. Unfortunately these attitudes are not infrequent or limited to one sector.

A reprisal is the most serious form of silencing. A reprisal occurs when an employer disciplines or fires an employee for raising a health and safety concern

HIERARCHY OF CONTROL

Apply the highest level of control commensurate with the risk level - lower value controls may be used in the interim until long-term controls are implemented

Elimination

Substitution

Engineering

Administrative

Behavior

PPE

Increasing effectiveness and sustainability

Increasing participation and supervision needed
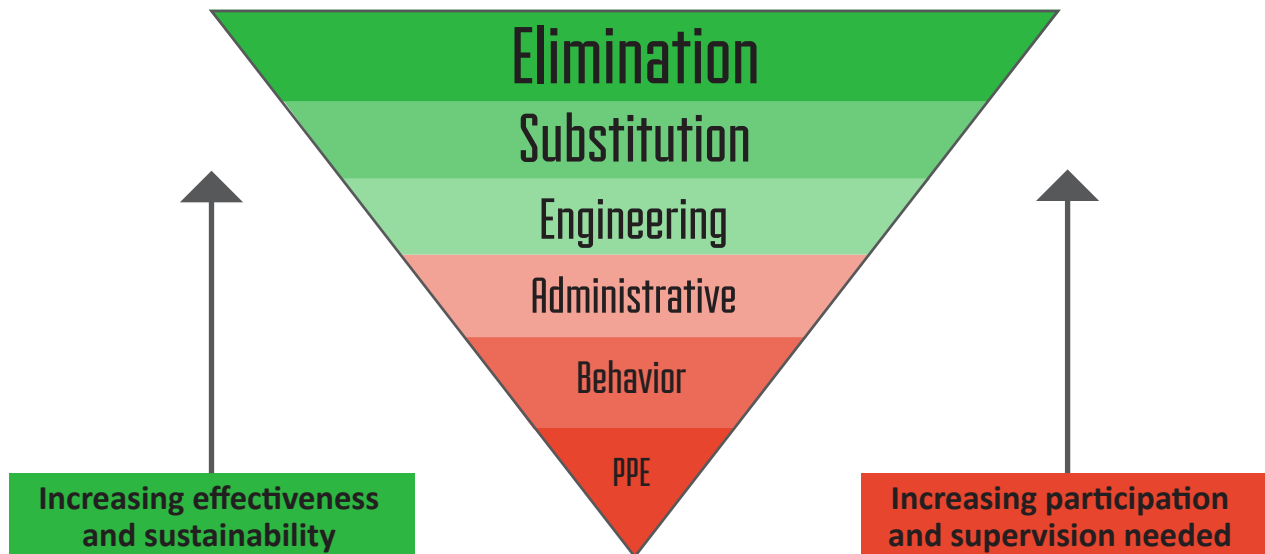
or trying to exercise their rights. A reprisal is illegal. If not acted upon by an inspector or union, management reprisals poison the work environment.

Discrimination and harassment
The same practices that discriminate in other aspects of employment also have a negative impact on worker participation in hazard assessment. Women are more likely to have the hazards they face dismissed by employers, regulators and health-care providers, reflecting the long-term devaluing of female work. Workers of colour who experience discrimination are unlikely to believe participation in hazard assessment will be treated any differently.

What can be done?

Recognizing that the barriers arise in different contexts and have different impacts, there are recommended practices that should be followed.

How should hazard assessment be done?
The Alberta Code Part 2 outlines three key requirements:
- S 7   an employer must assess hazards before work begins, repeat regularly and when work changes, and prepare a report each time.
- S 8   an employer must involve affected workers in the assessment and inform all affected workers about the hazards and what is being done to control them.

S 9   when an existing or potential hazard is identified, the employer must take steps to eliminate or, if not reasonably practicable, control the hazard using the hierarchy of controls.

Recommended examples of hazard assessment which include worker participation
Our review of recommended hazard assessment in North America and Europe found only one example of a process that incorporated worker participation into its description of the process in the way described by the Code. This process is known by the acronym SOBANE and will be discussed more fully below.

Most reported assessment methods focus on technical issues and evaluating the precise level of the risk. They purport to provide an objective measure without dealing with the reality of the concerns in the particular context. While some engineered processes are built to specifications which need to be considered in an evaluation, few other hazards come with predetermined limits.   By definition, these methods tend to exclude participation of everyone except experts. There are significant concerns about the reliability and validity of these measures.[10] These methods tend to limit interventions and overlook worker concerns.

SOBANE
As mentioned above, there is one published recommended practice for hazard assessment that explicitly includes and builds on worker participation. This practice is known as SOBANE, an acronym derived from its four process stages: Screening (S), Observation (OB), Analysis (AN), and Expertise (E). It was developed by Prof. J. Malchaire at the Unité Hygiène et Physiologie du travail at Université Catholique de Louvain (UCL) in Belgium.

> **I've never heard management say based on the (Joint Hazard Assessments), that we need to get new tooling that is designed to do a job better or we need to change a procedure. If somebody gets really hurt, they'll jump.**
>
> **Focus group**

A full and detailed explanation of SOBANE with examples can be found in English at **http://www.deparisnet.be/DeparisEngl.htm**. The following is a brief summary of its key features taken from the website and published articles.[11]

SOBANE's focus is on finding solutions through the involvement of various partners in developing strategy: employees, management, physicians, OHS practitioners. This global approach to problems sees the whole (partners working together) as greater than the sum of the parts (individual partners). It stresses the absolute necessity of a participative approach in which workers and local management are the key agents of assessment and partners (OHS practitioners and other experts) play a complementary role.

When is worker participation encouraged?
Worker participation is encouraged in all levels of the SOBANE approach. Worker participation is the principle means of risk assessment in the initial stages of Screening and Observation. Worker-local management participation is combined with OHS practitioners at the Analytical stage. Experts are added

if necessary at the final Expertise stage. Screening takes place regardless of the nature of the problem. The other levels take place if the step before leads to a need for further assessment.

SOBANE was developed in response to European Union directives requiring employers to undertake risk assessment. The method has been used success-fully to address physical agents, work in heat, noise, illumination, whole-body and upper-arm vibration and ergonomics, musculoskeletal disorder of the back and upper limbs, work physiology, work on visual display units (VDUs), and sick building syndrome. SOBANE is a strategy for comprehensively assessing haz-ards and developing concrete and practical solutions to them.

The SOBANE strategy is applicable to all workplaces, large and small. Because it does not rely solely on expertise and sophisticated technology, SOBANE works in most situations. The website provides further explanations and tools in many languages and formats.

Does SOBANE work?
Between 2003 and 2005, SOBANE was used in 80 meetings in 80 companies from nine different industrial sectors. The meetings led to an average of 12 proposals for improvement per meeting. Seventy-six percent of these improve-ments had little or no cost. Sixty percent of the solutions were very practical, while the other 40% went beyond ordinary health and safety issues to work procedures, work quality, and productivity.

When Work Changes

The Alberta Code requires that:
> 7(4) An employer must ensure that the hazard assessment is repeated
> (a) at reasonably practicable intervals to prevent the development of unsafe and unhealthy working conditions,
> (b) when a new work process is introduced,
> (c) when a work process or operation changes, or
> (d) before the construction of significant additions or alterations to a worksite.

Changes in the way in which work is done has long been recognized as a source of new hazards. Change occurs when management decides that some aspect of work will be done differently. As the US Department of Labor points out,

> *Anytime something new is brought into the workplace, whether it be a piece of equipment, different materials, a new process, or an entirely new building, new hazards may unintentionally be introduced.*

How change is managed becomes central to avoiding unintended negative con-sequences to health and safety. Worker participation is critical.

Some changes are more obvious – new equipment, new processes, new chemicals. Other kinds of changes such as hours of work, production quotas, and sub-contracting are often ignored. These kinds of changes, without proper

hazard assessment and control, increase the risk of accidents, the seriousness of accidents and the frequency of accidents. A comprehensive view of hazards and hazard assessment is necessary to avoid missing all the impacts of change. All changes require effective notification so that new hazards are not unwittingly created.

Changes also produce stress on workers. No one should need more proof that badly managed stress can reduce resistance to illness, increase bullying and harassment, increase the risk of ill health, lead to violence and contribute to anxiety, depression and ill health. Hazard assessment needs to be sensitive to changes in all dimensions of the work experience.

The recommended practice is to insure that change-analysis hazard assessment is conducted before the change is made. This analysis describes the change, attempts to identify all the ways in which workers' exposure is changed and address the hazards that can arise. It must includes all the parties involved, both those who make the changes and those who will be affected by them in order to avoid a silo affect. A silo affect is the ability of people to see circumstances only from their own perspective. As the United States Occupational Safety and Health Administration puts it,

> An organization or process is like a web of interconnections; a change in one area throws a different part off balance. Managing these ripple effects is what makes managing change a dynamic proposition with unexpected challenges. Having a team of operators, engineers, and safety and health professionals jointly analyze potential changes or new equipment, etc., before they are put online, can identify safety and production concerns up front, hopefully heading off problems before they develop. Fixing potential problems before they occur usually is less expensive than attempting to fix a problem after the fact.
>
> http://www.osha.gov/SLTC/etools/safetyhealth/mod4_factsheets_worksite.html

Information about the changes and the strategy to address any hazards then has to be effectively communicated to everyone who is potentially affected. Formal worker representation on committees provide employers with trained and dedicated personnel to address these concerns.

Effective Worker Participation – The Evidence

In order to explain what makes worker participation effective, it is important to understand that workers participate in two different capacities:

1. As a representative.
When a worker participates in a hazard assessment, he or she is often doing so on behalf of other workers. The report that is done and actions to be taken are provided to other workers doing similar work or who are similarly affected. These workers will rely on the report to do their job safely. In this way, the

worker is acting as a representative of those other workers. Research shows that effective worker representation in OHS has certain characteristics:

Knowledge activism

There are many studies which show that worker representation can be effective in improving health and safety. A recent review conducted in Ontario examined studies that showed workplace improvements through worker representation, especially in unionized workplaces and through joint committees.[12] Two recent studies in Ontario examined the characteristics of successful worker representatives. They confirmed that those workers who approach their task with a broad perspective about hazards and strategically utilize technical, scientific and legal knowledge are more successful in making improvements and on a broader range of issues than those with a narrower focus.[13]   Key resources include worker-centered and delivered training and access to occupational health clinics.

> **Knowledge activism is a form of activism by worker health and safety representatives that is organized around the strategic collection and tactical use of technical, scientific and legal knowledge.**
>
> **From Hall et.al. *Making a Difference*.**

These representatives do not just focus on immediate technical risks. Successful representatives consider underlying factors, potential risks to health, work organization, and systemic hazards. The first study involved detailed interviews with 27 worker OHS representatives from 27 auto related companies in southern Ontario. The second study involved a survey of 888 worker OHS representatives from a broad range of sectors across the province and in-depth interviews with 52.

Experience and knowledge

The desire to gain more experience and knowledge are two key elements of a successful worker representative. Hazard assessment is not just about bringing your experience to the process. The experience of other workers contributes to a fuller and more coherent picture of both the work being done and the hazards to which workers are exposed.

Successful participation in hazard assessment also requires building knowledge about the process of assessment itself. The more involvement in the process, the more this experience is developed.

Gaining knowledge is not just about listening and relying on what you are told. The research shows that successful worker representatives need access to independent information in order to substantiate their views with management.

Having gained knowledge, successful worker representatives pass on their knowledge to other workers through training and practice.

Peer support is widely recognized as an important component to success in any endeavor. Access to co-workers and to other worker representatives through

training opportunities, conferences or online provides support and encouragement.

> You have to get people to buy into it and why they need to do it and explain it. So therefore you need to educate yourself.
>
> **Worker representative**

Motivation

Not everyone wants to be more involved in the workplace beyond than what is necessary to do their job. The big barriers are time and money. Workers often see involvement in hazard assessment as an additional burden to an already heavy workload for which they do not get paid. Many worker OHS representatives spend much of their own time to get the job done properly. Without some financial recognition and allowances regarding the rest of one's job, it is hard to sustain the motivation to be involved.

Confidence

With knowledge and experience, a worker becomes more confident in representing the concerns of all affected workers and not just those of her or himself.

How employers respond to workers' concerns has a major impact on any worker's confidence. Strong differences of opinion can arise and, since the consequences can affect people's lives, those different opinions can be strongly held. Workers have the right to protect their health and safety as well as the duty. How differences are managed is a real test of the employer's commitment to health and safety and of the worker representative's confidence. Employers who are dismissive or discipline workers for speaking up undermine workers' confidence. Barriers are created that take a long time to take down.

Workers who see that concerns are being addressed have more confidence that their involvement can make a difference. This encourages more workers to be engaged with health and safety.

Importance of the issue

One way in which an employer demonstrates their commitment to worker participation in OHS is by supporting formal processes through which workers participate. Representative meetings, joint committees and full-time elected worker OHS representatives can facilitate effective representation.

> A lot of people become health and safety reps either because they see a need or something just happens and they've had enough and they want to deal with it.
>
> **A worker health and safety representative**

Formal processes can lead to bureaucratization if the worker representatives become just part of management's team and forget their responsibility to workers. Practices that encourage worker representatives to engage their co-workers can help counteract the effects of bureaucratization. Those worker representatives who practice knowledge activism tend to spend less of their time in

Worker representatives who distributed their time across a broader number of activities and those who spent more time on engaging workers and managers, reported significantly more attempts to make changes in their workplaces overall and in terms of a range of specific types of changes, both complex (major new ventilation system) and traditional (housekeeping). These representatives, which we refer to as knowledge activists because of their greater involvement in research and education, also reported significantly more positive impact overall and greater success in some specific change efforts.

The factors that came out as significant to overall success by representatives were the amount of experience on the committee, the amount of paid time allotted to representation activities, being the worker co-chair of the joint committee, the amount of time training workers, and the level of management commitment to health and safety.

LOARC Making Participation Work in the New Economy Participant Report

meetings and more time talking to workers and the employer and training other workers.

2. As an individual.
For most workers, participation in health and safety is directly related to doing their job. Every worker needs to be aware of and confident to report potential hazards. Hazard assessment may be required as part of the job. The results of a hazard assessment may be provided which directly affects the performance of a worker's job.

As we have already seen and instinctively know, the threat of discipline is the most regressive thing that an employer can do, guaranteed to discourage reporting and undermine worker participation.

Workers observe management practice health and safety
The beginning point of successful worker participation in hazard assessment is management's practice of health and safety. Workers who observe their employer not practicing good health and safety or disparage concerns are not going to be encouraged to raise concerns or suggestions. Those workers who are experiencing serious enough concerns will be pressured to take action such as contacting an OHS inspector.

Safety signs, safety bingo and bonus programs which trivialize safety and give prizes encourage workers to overlook much of what is going on in order to get along.

Workers who observe management's involvement in health and safety as a serious endeavor by their actions and practices are more likely to follow the same actions and practices.

Formal arrangements – regular meetings, elected and paid worker representatives, training, routine practice and follow up – reinforce a perception of management's commitment. A 2009 survey by the European Agency for Safety and Health At Work of nearly 36,000 interviews with managers and health and safety representatives suggests that direct participation of workers in health

and safety is more likely to be effective with the presences of worker representatives than without.[14]

Educated about the hazards

Most job training is still not providing the education necessary to enable workers to successfully participate in hazard assessment and control. At best, training is provided to address only specific circumstances related to a specialized task or operation.

Effective participation requires adequate training and information, opportunities to investigate and communicate with other workers, and channels for dialogue with management about existing problems and planned changes.[15] The more of these features that exist in a workplace, the more worker participation is a meaningful influence on hazard detection and abatement.[16]

High-engagement training is linked to greater knowledge acquisition, better safety performance and a greater reduction in injuries.[17] High-engagement (or active) learning methods incorporate dialogue, reflection, feedback and action into the training. This degree of engagement allows trainees to infer causal and conditional relationships between actions, the environment and outcomes as well as learn from mistakes. This changes how workers think and act, especially in novel situations.[18] By contrast, low-engagement training typically focuses on information transmission via lectures, and written and video material with little social support to reinforce training. For example, significant questions exist about the effectiveness of online safety training due to its tendency towards passive, rather than active, learning.[19]

Health and safety training developed independently and with the support of organized labour has shown itself to be effective in many jurisdictions where funding support comes from the workers compensation board[20] or directly from government.[21]   Based on popular and adult education principles and developed from the standpoint of workers, this approach to training seeks to provide workers with the right combination of training and practice to promote the confidence to be useful when given the opportunity to take part. Experienced workers are trained as instructors. Practical and relevant training delivered by peers provides an incentive for participation.

Interviewer: How do you see your role as a worker rep?
Worker representative: It is to protect the worker and educate the worker.

The time to do the job safely

Having the time to do the job safely has become one of the biggest challenges to worker participation. Increasing workloads and competition along with decreasing wages and job opportunities make it very difficult for workers to participate very much if at all. In some cases, just trying to do the job safely is a challenge.

This challenge is worsened when employers have poor or ineffective procedures to enable workers to participate. Workers who do not get paid to do a hazard assessment are less able to do a successful job. Contracts or work plans that do not

factor in the time and circumstances necessary to do a good hazard assessment encourage, at best, cursory participation.

Regulation of hours of work and its impact on OHS is very weak despite the strong evidence that long hours of work along with low pay increases the risk of injury, illness and disability.

Mentored by supervisors and co-workers on how to work safely

Support at work has long been recognized as a key factor in improving worker participation, especially for less experienced workers. Mentoring by more senior workers and supervisors provides the basis for how a worker applies the training she or he has received to do the job. Effective mentoring is linked to the employer's overall attitude to health and safety.

Confidence

The confidence that a worker has to participate is directly proportional to the practice of the employer. If a worker believes that his or her comments will be dismissed, disregarded or lead to discipline, she or he is not going to participate except in a very limited and self protective way.

This can lead to the creation of a "false confidence." After all, if the employer doesn't think there is a problem, who am I to disagree?

Support from co-workers, a supervisor or an inspector can encourage a worker but in the end, unless the inspector takes action, the employer's conduct will be the determining factor.

Strategies for improving Worker Participation in OHS

In 2012 the European Agency for Safety and Health at Work published a review of worker participation.[22] The authors examined 161 case studies from across the European Union. This review was part of a larger campaign to promote leadership and worker participation in health and safety across the EU.[23]

What are opportunities in large workplaces?

Surveying the 161 case studies in the EU study showed that the following are most frequently employed means of worker participation:
- Work-teams (Including such activities as: meetings to discuss analysis results and analysis method solutions; trials to test teams' proposals; team presentation of ideas to management)
- Surveys
- Workers' council (a form of representative committee)
- Local steering committee
- Interviews -worker representatives, workers in general
- Testing
- Workshop sessions
- Project evaluation questionnaires
- Staff representative survey
- Health circle meetings

Over 50 different strategies in total were used in. Many of the cases only provided consultation rather than involvement required by the Alberta Code. Surveying the 161 cases, it appears that 43 (26.7%) could be said to be only consultative while 118 (73.3%) have at least one major participatory aspect.

A wide range of hazards were addressed:

    39 - High accident risk/frequency, physical danger
    31 - Mental strain, stress or burnout
    28 - Musculo-Skeletal Disorders
    12 - Multiple psychological and/or physical risks
    12 - Chemical hazards
    12 - Physical strain
    9 - Health/lifestyle risk
    8 - Violence, bullying, intimidation, and harassment
    8 - Noise
    7 - Psychosocial risks
    7 - Youth specific accident risk
    3 - Work-life balance
    3 - Disadvantaged groups specific risk (i.e. the temporary unemployed,
        under privileged, immigrants and part-time students)
    2 - Addiction
    2 - Gender risks
    2 - Older worker specific risk
    1 - Fatigue
    1 - Physical violence
    1 - Mental intimidation or violence

It is not possible in this guide to list all the different examples.

What are the possibilities in small workplaces?
Small employers and self-employed and contract workers face major systemic barriers to successful worker participation in hazard assessment. To summarize, little time, resources and support are available. In addition, relationships between workers and management are often much tighter. A disagreement, accident or injury can fracture a previously strong working relationship and create bitter enmity from which there is little escape.[24] As one job ends, the prospect of being hired on for the next is often uncertain.

In some trades and occupations, OHS training is a core competency for certification. More and more colleges now offer OHS training as an option. The effectiveness of this approach is questioned by those who argue training at work is a critical element to successful practice.

Sub-contractor relationships are governed by health and safety laws which require the owner or prime contractor to take responsibility for the health and safety practices of sub-contractors on-site. Sub-contracted relationships which are not on-site are sometimes governed by what are called supply chain rules.

Similar in principle to the on-site responsibilities, the head of the supply chain holds some responsibilities for the health and safety practices of its suppliers.

In both cases, similar structures and strategies to those described above can be utilized as long as they allow for representation from the different sub-contractors or suppliers involved. Groups of similarly situated sub-contractors and suppliers may consider developing common practices respecting health and safety and hazard assessment in order to reduce transaction costs.

Contracted relationships could include provision of resources and support from the prime contractor who usually has them or the money to support them. This could include assistance with worker participation. Sweden has experimented with roving worker OHS representatives, where experienced worker OHS representatives were funded to assist workers of employers in a particular area.

More often, workers in these circumstances have to rely on advice from consultants and inspectors.

Some jurisdictions provide funding, often through the workers' compensation system, for worker health and safety training and occupational health clinics. Temporary agency workers are confronted by the major problem of working in environments that are not controlled by their employer.

Enforcement
Effective enforcement makes the difference between poor and good worker participation. If poor employers believe there is no risk to ignoring worker participation requirements or to doing the bare minimum, then good employers are at a competitive disadvantage. It is important that enforcement of worker participation is both done and seen to be done.

The most effective employer incentives are inspectors, orders and penalty assessments. Using these tools to improve worker participation requires a strategy, encouragement and a consistent practice. Having identified the barriers and opportunities to participate, it is necessary for inspectors to play a strategic role in protecting workers while encouraging employers to better practice.

Strategy
Research shows that enforcement has basically three strategies – proactive, reactive and voluntary. Proactive strategies build on information – complaints, claims, concerns, research – and target particular sectors and employers for inspections. When an individual complaint is raised, a proactive investigation will determine if there are other concerns as well. Reactive strategies are much more limited and respond only to the complaints that are made and address only the complaint. Voluntary strategies rely on good will. Not surprisingly, the overwhelming evidence is that proactive strategies are the most effective in addressing concerns of more workers at lower cost. [25]

Based on complaints, survey data or other low cost information sources, the inspectorate should identify sectors and circumstances where there would be

major concern about gaps in hazard assessment and establish project-based teams to undertake proactive inspections with a view to improving employer practice of hazard assessment and the participation of workers.

Encouragement

When worker participation was first established across Canada (and most of the world) in the 1970s, inspectors established working relationships with workers, especially worker OHS representatives, to help them identify concerns and to promote internal co-operation. Communication with inspectors by workers was encouraged. Inspectors promised and guaranteed confidentiality. This encouragement promoted effective worker participation.

> **The Occupational Health and Safety Act s 36**
> **No person shall dismiss or take any other disciplinary action against a worker by reason of that worker acting in compliance with this Act, the regulations, the adopted code or an order given under this Act, the regulations or the adopted code.**

The encouragement of worker participation by inspectors has declined substantially over the last three decades and needs to be reinvigorated. This is particularly clear when it comes to the prevention of reprisals.

Reprisals

Reprisal – disciplining or firing a worker for raising a health and safety concern, talking to others about the concern or talking to an inspector - has a devastating impact on worker participation. A reprisal can be direct and indirect. It can involve a termination or discipline. A reprisal may take the form of a reassignment, petty harassment or threats. The law is very clear that reprisals are not permitted. The effectiveness of the law is dependent on the strategies that inspectors use to enforce it.

A proactive strategy by the inspectorate to protect workers from reprisals is needed. Orders and prosecutions are required when section 36 of the Occupational Health and Safety Act is violated. The need to resort to these tools will be diminished as employers become aware that there are consequences to violating the law.

Consistent Practice

Along with a proactive strategy and rebuilding the confidence of workers, the inspectorate must develop a consistent practice of enforcement. This can be achieved by providing employers with clear examples of unacceptable behaviour and recommended practices.

Provided in our Resource Documents are checklists for both worker representation and worker participation developed by the European Agency for Safety and Health at Work in 2012 as a result of the case studies they evaluated.[26] Examples like this will give employers a clearer understanding of their responsibilities and the basis upon which the inspectorate can write orders.

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2.1

Hazard Assessments
Why It Matters

Best Practice Guidelines:
Effective Worker Participation in Hazard Assessments
Alberta Workers' Health Centre, December 2015

About the Alberta Workers' Health Centre:
The Alberta Workers' Health Centre is a registered charitable, non-profit organization that supports all workers, unionized and non-unionized, who need assistance to help make their workplaces healthier and safer. Since 1983 it has done this through programs of education and training; research and information; assessment and support for workers across Alberta.

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Assessments are all about prevention -- stopping people from being hurt, getting ill, or dying because of their work. You can't have a healthy and safe job, work site or workplace without knowing what hazards are there. Finding hazards should lead to fixing them.

Just as important, it's part of an ethical approach to occupational health and safety (OHS), and good health and safety programs.

Health and safety professionals or specialists are taught to:
- assess hazards (look for them),
- evaluate (take measurements) if necessary, and
- make recommendations to fix the problem(s).

They are expected to put workers' health and safety first, with the understanding that health is a holistic approach to well-being, and not just a disease, illness or injury not being there (i.e., the "absence of").

Health and safety programs are the overall systems that deal with health and safety in a workplace. Like assessments, their goal is to prevent work- or job-related injuries, illnesses, diseases and deaths. Programs go by different names, including occupational health and safety management systems (OHSMS) and health and safety plans.

The authors of "Occupational Health & Safety Management Systems - When are they good for your Health?" cast a critical eye on these systems. The authors "stress that the type of management system is less important than how it is interpreted and put into practice in workplaces." They also criticize systems that seem to look more for safety hazards, rather than the hazards that lead to long-term illnesses or diseases, and systems that are separate from the overall management of an organization. They call for integrating OHS programs into all aspects of what an organization does.

In Alberta, some employers must have what the Alberta government calls a Health and Safety Management System. It is part of the Partnerships in Injury Reduction program. The Alberta Jobs, Skills, Training and Labour department issues Certificates of Recognition (COR) to organizations that participate and have what they consider to be a good OHS management system.

Hazard assessments are a crucial part of these systems or programs. The principles involved include:
- the goal is to find and fix hazards,
- ensure management's commitment to doing them, paying attention to the results, and fixing the hazards found,

Effective prevention requires a good hazard assessment

… it is the key to prevention policy. Prevention means anticipating and analysing the various aspects of work to identify short and long-term hazards. Without a systematic assessment of the hazards involved, it would only be possible to apply a reactive, after-the-event policy to correct particular aspects of the organisation of work.

  Hazard assessment has to be much more than a simple exercise in common sense if it is to become an effective instrument for prevention. In occupational health, society makes many hazards invisible. Most long-term hazards are under-estimated. Sometimes they are denied. Hazard assessment is an exercise to remove this invisibility.

  Prevention is only effective if we can understand hazards through their relationships to one another and trace them back to determining factors such as the organisation of work and social relations in the workplace.

Adapted from materials from the European Trade Union Institute

- use a systematic, organised approach,
- start with workers' experiences (see the five-step spiral) as part of effective worker participation in the full "find and fix it" process,
- cover all hazards, in a **root cause analysis** framework that complements workers' experiences,
- account for the integrated way in which people experience these hazards (e.g., the mental and physical work load of doing concentrated work in a noisy and hot environment, with little attention paid to ergonomic hazards), and
- therefore, make it more than checking off a list of hazards.

The practices must ensure that assessments:
- involve workers and their representatives at all steps,
- are done regularly and when work changes in any way,
- develop the "big picture" about the current situation and what needs to be fixed,
- are integrated into the larger health and safety prevention programme and management systems,
- set time limits and responsibilities for short-term, medium-term and long-term actions,
- lead to preventive changes or reduced harm/effects,
- are followed by **evaluations** of the changes, as part of the cyclical and on-going assessment activities, and further action as needed, and
- include documenting all that is done, who is involved, and follow-up required and carried out.

Hazard assessment and worker participation are not technical topics.

To get a handle on them, we need to have goals based on principles and key concepts. They help us see the possibilities for better jobs and workplaces. They give us a base from which to develop strategies and tactics to get real worker participation in job-related hazard assessments in Alberta and to do other health and safety work.

The fundamental principles and key concepts are universal, and generally agreed upon -- at least in writing -- by all involved.

Why are goals, principles and key concepts important?

Goals help you figure out where you are going, whether it's next week, next month or next year, or way down the road. We need goals for short-term victories and long-term solutions that really work.

Principles help you reach those goals. They provide a framework and common ground for discussions, activities and decisions. They guide you in deciding how to tackle hazards, whether it's looking for them or fixing them.

Key concepts are important ideas and approaches based on principles.

For example, the prevention triangle used in these materials is based on the precautionary principle and the idea that materials matter. We use the word "prevention" to emphasize that is the goal, as opposed to "controls" that don't get rid of hazards.

It's important to use all three in health and safety activities, and to be clear about what they are -- in effect, making them visible.

Rules for occupational health specialists to practice:
The aim of occupational health practice is to protect and promote workers' health, to sustain and improve their working capacity and ability, to contribute to the establishment and maintenance of a safe and healthy working environment for all, as well as to promote the adaptation of work to the capabilities of workers, taking into account their state of health.

From: International Code of Ethics for Occupational Health Professionals (2002)

What are the goals of occupational health and safety?

The Alberta Occupational Health and Safety Act does not set out any goals or purposes for the law (unlike Manitoba's). Without saying so directly, the Alberta law does have goals for employers and others. (See the section on "players" at the end of this module.) Most are consistent with long-time international goals.

You can set your own goals for health and safety activities, including hazard assessments. Consider these important ones as a staring point:
- healthy and happy workers who feel respected and valued
- workers who report injuries, illnesses or hazards without any fears of retaliation or losing their job

- management that is serious about preventing injuries, illnesses and diseases, making sure that health and safety principles and practices are integrated into everything the organization does
- all planning discussions and decisions include designs to avoid and prevent hazards
- few, if any, hazards -- especially serious ones
- a prevention program (see below) with clear policies, procedures and responsibilities
- competent managers, supervisors and workers
- promotion of health and safety in general and specific efforts in particular (e.g., violence at work, mental health issues)
- training of supervisors, lead hands and workers to identify and remove barriers to effective participation

A health and safety prevention program -- sometimes called a health and safety management system -- also is important. Effective programs:

- name the organization's health and safety principles and goals
- recognize the employer is responsible for fixing hazards, or making sure they are fixed
- have practical objectives and ways to reach them in the short-, medium- and long-term
- recognize that workers may face barriers to their effective participation
- identify those barriers and develop strategies to eliminate or reduce those barriers
- include hazard assessments linked to solutions that are effective (aim to prevent people from getting hurt, getting sick, or dying)
- require reporting and dealing with all types of hazards and injuries, rather than "behaviour-based safety"
- ban reprisals or discrimination ("disciplinary action") against anyone who reports hazards or work-related injuries or illnesses

"It is so much easier (and wrong) to point to worker behavior as the 'cause' of an injury, such as a cut hand, instead of pointing to a hazard that is designed into the workplace, such as the speed of an assembly line (which contribute to repetitive strain injuries)."

Worker interview

What principles and key concepts guide health and safety at work?

The following key principles and concepts are used in these guidelines:

1. prevention
2. workers have rights because employers have duties
3. the employer is responsible for fixing hazards
4. it's the hazards, not the behaviour
5. workers' experiences and knowledge matter
6. make things visible

7. five steps to a healthy and safe workplace

1. Prevention

Injuries and illnesses are not normal or inevitable. They are the result of how work is designed, organized and carried out. They are the result of decisions made by people. They are not "accidents" despite what many people believe.

Study after study shows this. And they show that the consequences of workplace injuries and illnesses are mind-boggling.

Hundreds of thousands of Canadians get hurt or sick at work each year. At least 1,000 die each year because of their job. Workers and their families bear much more of the costs (especially indirect ones) than employers do. Since they don't pay the full costs of work-related injuries, illnesses and deaths, it is fairly easy for employers to say that prevention is too expensive for their budgets and balance sheets.

> **In 1950, the World Health Organization and the International Labour Organisation (ILO) agreed that the goals of occupational health are to:**
> • **Advocate/push to, and keep, workers healthy and happy;**
> • **prevent workers getting sick because of their jobs;**
> • **protect workers from all hazards on the job and;**
> • **adapt the workplace to workers' mental and physical needs (i.e., use ergonomic principles).**

Prevention is crucial for the protection of workers. The best way to prevent injuries, illnesses, diseases and deaths is to get rid of hazards. Go to the source of the problem and eliminate it. Address the root cause.

These kinds of solutions can be easy to do.

Unfortunately, many hazards are designed into systems, tools and equipment. In these cases, it can take time and money to get the best solution. It requires long-term goals with several steps along the way. It also means more people often are involved and someone has to have authority to spend money.

When it is difficult to get rid of a hazard (at least quickly), other kinds of solutions must be used to reduce the seriousness of a hazard and/or limit its effects. These controls do not get rid of the hazard; they only reduce or limit its harm. It is best to think of controls as short- and medium-term fixes.

These principles come together in the prevention triangle.

The Prevention Triangle

The most effective solutions prevent hazards (shown at the bottom of the triangle), while the least effective ones only limit the harm to workers (shown at the top of the triangle).

The triangle also sums up the law in Alberta. Part 2, Section 9 of the Alberta Occupational Health and Safety Code is called "hazard elimination and control". It says employers who find hazards in an assessment must get rid of them or "control" them. (It must be "reasonably practicable" to get rid of the hazard.)

Least effective

Most effective

The Prevention Triangle -
principles of solving health and safety problems

**Level 3
prevention**
**Limit the harm between
the source and worker
(often individual solutions)**

**Level 2
prevention**
- prevent the harm at source

BEST PRACTICE
**Level 1
prevention**
- prevent/get rid of the hazard

2. Workers' rights and employers' duties

Canadian health and safety laws give workers rights or protections. These come from duties their employer has under the law (whether it's the Act, regulation or codes) -- things they must do.

All these rights and duties are important in hazard assessments:
- The assessments are based on employers' duties to find and fix hazards, and to tell workers about the hazards they find and how they will be fixed or dealt with.
- Workers have a right to know about some specific hazards too (e.g., workplace violence).
- If a worker finds a hazard that the Alberta law considers "imminent", they must refuse to do that work.
- It is illegal for the employer to discipline:
  - workers who are obeying the law (e.g., refusing to work with an imminent hazard, reporting hazards in a hazards assessment), or
  - joint health and safety committee members who participate in hazard assessments or do other things related to that role.

3. Employers are responsible for fixing hazards

The law in Alberta and elsewhere says employers are in charge of health and safety (because they have control of the workplace and decisions made within it under "management rights"). Therefore, they have the most responsibility for

what happens about health and safety and must fix hazards or make sure they are fixed.

The law in Alberta also says that workers must follow safety rules and work safely. Nowhere in the law does it say workers must fix hazards. In fact, Alberta workers are told they must not do a job if it is dangerous and they must report the hazard to their supervisor.

Workers' Rights	Employers' Duties
• A healthy and safe workplace	• Ensure the health and safety of employees and others working around them. Find and fix hazards in general and specific hazards
• Know about the hazards of their jobs	• Provide information about hazards found in assessments and how they will be fixed; provide information about specific hazards (e.g., a controlled product, a "harmful substance", specific hazards); train workers when required; provide information about health effects of harmful substances; make sure workers are competent
• Participate	• Involve workers in hazard assessments; set up a joint health and safety committee (when required); have workers report hazards
• Refuse	• Provide a healthy and safe workplace; respond to reason(s) for workers' refusal by fixing hazards and not letting anyone else face the same "imminent danger"
• No discrimination for health and safety activities	• Not discipline or discriminate against someone who reports hazards, injuries or illnesses, asks questions about health and safety, or refuses to do work that has an "imminent danger"

To fix work-related hazards, employers must make sure that the dangers are found or identified; this must happen before work starts and when things change. They also must involve workers in finding and fixing hazards that affect them; the law says there is no choice about doing this.

4. It's the hazards - not the behaviour - that matter

What do you call someone who is hurt at work? What does your employer call them or say about them?

Careless? Accident-prone? They have a poor attitude? They did something stupid? It's their fault?

All those ideas are behind "behaviour-based safety" (BBS) programs. Examples are the Dupont STOP programme, safety bingo, and other activities that focus on what workers do. Some also talk about "safety climate" or "safety culture". Some talk about "worker attitudes."

> **No accident (sic) is ever caused by one thing. It's always a series of things.**
>
> Wendy Tadros
> Canadian Transportation Board chair
> Montreal Gazette, July 12, 2013
> Referring to the train derailment, fire and explosion in Lac-Megantic, Quebec

These programs assume that most work-related injuries, incidents, etc. are the workers' fault -- it was something they did or didn't do. Every incident is seen as an "unsafe act".

This thinking ignores the fact that the design of the workplace, the tools and processes used, the pace of the work and the environment in which the work is done are not within the control of the worker, yet contribute to the health and safety of that workplace.

Despite the popularity of BBS programs, studies show that the architects of BBS were wrong. So does common sense - asking "Why?"- and going beyond first impressions. Another way to put it is: fix the hazard, not the worker.

Root Analysis or Systems Thinking

It takes hazards to have injuries, illnesses or deaths on a job. It takes asking "Why?" several times to figure out the real reasons behind near-misses and devastating injuries.

This approach can be called root analysis or systems thinking. Whatever the name, it's about analysing the whole picture to figure out what went wrong and why. It's about looking for the invisible hazards and the expectations behind the way things are done.

This also means that there are very few "accidents" at work. Real accidents have no apparent cause. They cannot be predicted because they happen by chance. They are not the result of something that is done on purpose. That's what the word means. There are few, if any, "accidents" at work. (Some people use the word "incident" instead.)

Therefore:
- hazards lead to people getting sick, hurt, or dying because of their job(s)
- these are not accidents because they can be prevented
- effective hazard assessments are an important prevention tool
- hazards need to be fixed too (and the sooner the better)
- the Alberta Code says both assessments and solutions must be done, and workers must be involved in both steps

What kinds of hazards are we talking about?

Anyone doing a proper hazard assessment needs to look for, and see, six categories. They are:

- **Safety/mechanical hazards** - including incidents involving vehicles, trips or falls, housekeeping, moving machinery parts or equipment that is broken or not working properly.
- **Physical hazards** - from energy sources, such as noise, temperature, humidity, electricity, vibration, radiation.
- **Chemical/mineral hazards** - gases, liquids, solids, dust, fumes, vapours.
- **Communicable/biological hazards** - moulds, bacteria, viruses, blood-borne pathogens, needle sticks.
- **Ergonomic design hazards** - including repetition, force, awkward and static posture and the work environment (including the physical hazards above).
- **Work organization hazards/Psychological stressors** - how work is designed and organized, including workload or other demands, control/say, support, respect, possibilities for violence and the flexibility for dealing with non-work responsibilities.

These hazard categories are connected; some overlap with one another (e.g., safety and ergonomics) while all can have connections to work organization hazards, sometimes called stressors or psychosocial hazards. All need to be assessed and fixed when they are found.

| Trust your instincts. If it doesn't feel right, it probably isn't.
Worker representative

5. Workers' experiences and knowledge matter

Workers as well as occupational health and safety specialists can identify hazards and their effects. It all depends on some training to "see" the hazards and the opportunity to talk with co-workers and others about what's happening and why.

Know What Can Hurt You: Information about health hazards -- especially what might happen further down the road -- is a key part of that training.
Whatever the official job training, we learn about hazards by doing a particular job or working in a place. And we assess them every day.

Use All Your Senses: Our senses are important for hazard assessment. You see something wrong and don't trust its safety. Something else smells and makes your nose drip. Something else stings your skin or gives you a rash. Your eyes

Researchers say that a workers' set of eyes or viewpoint leads to better results when assessing health and safety issues. For example, a University of Toronto professor says:

It is important to understand the standpoints of the different players in the OSH system because people act on the basis of how they see the world, how they understand the situation they are in and the stakes at play, and how they conceive others in the system and their relationship to them.[1] ("Standpoint" is standing in someone else's shoes, figuratively, to see things from their perspective. When the employer's or manager's viewpoints dominate workplaces, the worker's "standpoint" on things is invisible, and it's hard to get effective action to fix hazards.)

Economists who look at health and safety fixes (often called "interventions" in studies) agree. They found that unless workers' voices are included with management's in deciding what is to be done to deal with health and safety hazards, the results are ineffective action that wastes money.[2]

1. Joan Eakin, (2010) "Towards a 'standpoint' perspective: health and safety in small workplaces from the perspective of workers", Policy and Practice in Health and Safety, Vol. 8, No. 2, pgs 113 - 126.
2. Anthony Culyer, Benjamin C. Amick III, and Audrey Laporte, (2008) What is a little more health and safety worth? in Economic Evaluation of Interventions in Health and Safety: Developing Good Practice, Oxford University Press.

water when you spray something else. Some work leaves your wrist or shoulder sore or limits how much you can move it afterwards.

Listen to Others: It is also important to pay attention to what others say is happening to them. Some people are canaries -- they get symptoms before most others do. For example, some people working with cleaning products can react to them right away, especially if they already have asthma. Those same products can cause asthma and other problems for other people further down the road.

Engage Workers in Fixing the Problem: Workers also know how to fix hazards Unlike engineers or outsiders, workers know what it really takes to get the job done -- how things work or don't, the little fixes that make a difference, etc. Since a lot of work is about small pieces of making or doing something, they usually need to work with others to understand the big(ger) picture.

Understand the Principles of Prevention: It also helps to know and understand the principles of prevention (e.g., the prevention triangle). Guided by the principles and a big picture understanding, workers make important contributions to possible short-term and long-term fixes. They can work with supervisors, engineers, ergonomists and others to make small or big changes, and to come up with specifications for new equipment, tools and working methods.

6. Make things visible

Think about it. Can you see:
- chemical vapours that make your eyes water?
- longer-term effects from various hazards (e.g., cancer or something that affects your ability to have healthy children)?
- blood-borne pathogens (diseases in blood)?
- bullying in your workplace? other forms of violence?
- the root causes of "poor posture" (e.g., a chair back that doesn't fit)?

- workload?

Lots of workplace hazards are really hard to see. And that makes them hard to find and fix. It's one reason why safety hazards get fixed more often than health hazards. And it's easier to watch a worker do something (behaviour) than it is to figure out why they are doing it (the hazard, the training or lack of it, etc.).

How can you make hazards visible? These guidelines provides some tools that should help:
- the six categories of hazards
- body and workplace mapping
- health and hazard surveys
- "interviews" and other ways of talking to people
- inspection materials based on the six hazard categories

The resource guide also takes you to other places where you can find other tools.

7. Take five steps to a healthy and safe workplace

How do you get from where you are now to where you want to be -- that healthy and safe workplace? And how do you know when you've reached any of your goals?

This guideline recommends a five-step approach that is easy to follow, logical and practical.

Step 1 -- Where does it hurt? Describe different types of symptoms and important concepts related to them. Start with people's experiences. How are workers affected by their jobs? What are their symptoms —- those aches, pains, cuts, rashes, injuries, illnesses and diseases?

What job-related hazards are causing those symptoms?

Step 2 -- What makes it hurt? Identify hazards found in workplaces, looking for all six categories.

Step 3 -- How do you find symptoms and hazards? A variety of tools exist for doing the detective work at your workplace, linking symptoms and hazards. We emphasize getting the full picture,

> Our bodies are the best instruments for determining the health and safety of workplaces – our ears, nose, our skin for thermal conditions, our eyes for dust and so on. We are the best instrument.
>
> Bob Sass, former Director for Occupational Health and Safety for Saskatchewan and the "father" of workers' rights in Canadian health and safety laws.

Five Steps -
to a healthy and safe workplace

EVALUATE THE SOLUTIONS

HOW DO WE GET THE SOLUTIONS WE NEED?
(Making the case)

WHAT FIXES THE HAZARD?
(Prevention at different levels)

HOW DO YOU FIND THE HAZARDS?
(Surveillance, reporting, maps)

WHAT MAKES IT HURT?
(What are the hazards?)

WHERE DOES IT HURT?
(What are the symptoms?)

looking for the root cause(s), and practical approaches to dealing with them.

Step 4 -- What fixes the hazards? Once the hazards are identified or assessed, the law expects workers and employers to figure out how to prevent or deal with them. Set out principles to get to the best fixes, including the prevention triangle.

Step 5 -- How do you get the "fixes" you need? Make the case for short and long-term solutions. What are the strategies, tactics and methods do you need to get the best solutions possible?

Evaluate and Repeat the Steps. Finally, evaluate how well those fixes are working. What else may be causing symptoms? What new processes, materials, tools or chemicals are being used? What could they do to workers?

Who are the players? What are they supposed to do?

Whatever positions are called in your workplace or on your job, it's important to know what words the health and safety law uses. Then you can figure out what those people are supposed to do when it comes to health and safety.

In Alberta, most "players" (and their legal definitions) are in section 1 of the *Occupational Health and Safety Act.*

Player	Definition	Source(s) of definition
Contractor	**Usually found on construction sites. Someone, a number of people or a company that is in charge of whatever one or more employers are doing at a work site. Being in charge (called directing activities) must be formal (a contract or agreement) or because they are an owner.**	**Act, section 1(b)**
Director (of inspection, medical services, occupational hygiene)	**Heads of various parts of the government ministry responsible for health and safety (Alberta Jobs, Skills, Training and Labour).**	**Act, section 1(f), (g), (h), (i)**

Player	Definition	Source(s) of definition
Employer	**A person who:** • **is self-employed** • **hires at least one person** • **the employer says (designates) is his/her representative** • **is a company director or officer, responsible for the health and safety of company workers**	**Act, section 1(k)**
Occupational Health and Safety Council	**Advisory body of the government ministry responsible for health and safety (Alberta Jobs, Skills, Training and Labour).**	**Act, section 1(d)** **Act, section 6**
Occupational health and safety officer	**A government health and safety inspector**	**Act, section 1(u)**
Peace officer	**An RCMP officer or other police officer.**	**Act, section 1(w)**
Prime contractor	**When there is more than one employer at a work site, there must be a prime contractor. It can be:** • **whoever owns the work site -- the place there people are working (including vehicles), or** • **someone with whom the owner makes an agreement to have that responsibility (e.g., a contractor, one of the employers)**	**Act, section 1(x)** **Act, section 3(2)**

Player	Definition	Source(s) of definition

Supplier · · · · · Whoever provides tools, appliances or equipment for a worker to use on the job. Includes things that are rented, leased, installed, or put up. Also covers selling/providing chemicals that come under the national Workplace Hazardous Materials Information System (WHMIS) -- sometimes called "controlled products". And it includes selling/providing explosives. · · · · · **Act, section 1(aa)**

Union · · · · · Trade unions represent groups of workers so they have more power to deal with employers. · · · · · **Labour Relations Code section 1 (x)**

Worker · · · · · Someone who is doing any job ("engaged in an occupation") that comes under provincial law. They do not have to be paid (e.g., volunteers).
People doing these kinds of work are not covered by this law:
• some farming or ranching (new legislation in effect as of January 1, 2016)
• work in and around private homes (e.g., home owners, nannies and other "household servants")
• students (including university) · · · · · **Act, section 1(bb), backed up by section 1(s)**

The roles (What are the players supposed to do?)

Employer:
- provide a healthy and safe workplace
- set up programmes and procedures that meet and use requirements from the law
- provide all employees with information, instruction, training and competent supervision when it comes to health and safety
- assign responsibilities for OHS to supervisors and others (preferably in their job descriptions)

- fix problems/hazards that are found or reported
- pay attention to what the law says about protective equipment and cloth-ing being the last resort for fixing hazards and that the best method is to get rid of the hazard (i.e., the most effective prevention)

Worker:
- look after your health and safety and that of other workers nearby
- follow established procedures
- report problems (hazards and symptoms) to supervisors and union repre-sentatives
- use your rights
- take action individually or collectively when necessary to get problems fixed

Union:
- defend workers' rights, fight for fairness at work and other changes, in cluding better health and safety conditions.
- uphold the contract and law
- push for improvements to the law and enforcement of what exists

Government:
- enforce the law
- back workers exercising their legal rights
- prepare and implement new laws, in consultation with the "stakeholders"
- fine or take those disobeying the law to court

Outsiders (consultants, suppliers/manufacturers):

Suppliers/manufacturers should:
- provide safe and healthy products
- provide information about the hazards of their products and how to prevent injury, illness or disease
- respond to questions about hazards associated with their product(s) and how to prevent or reduce them

The role of consultants is to:
- provide fair and honest advice and information
- adhere to the code of ethics for their profession

Endnotes

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3.0 Hazard Assessments
What Are They?

Best Practice Guidelines:
Effective Worker Participation in Hazard Assessments
Alberta Workers' Health Centre, December 2015

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The Alberta Workers' Health Centre is a registered charitable, non-profit organization that supports all workers, unionized and non-unionized, who need assistance to help make their workplaces healthier and safer. Since 1983 it has done this through programs of education and training; research and information; assessment and support for workers across Alberta.

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Hazard assessments are organized ways to look for all types of hazards in a workplace, in a job or at a worksite. They are done to prevent workers from getting sick, hurt, or killed at work.

Assessments may be called inspections; when they are done after something happens (e.g., an injury, death, illness), they often are called investigations. (The names do matter sometimes.)

Whatever the name, they really are about workers' experiences, detective work and strategic thinking. As a result, they often are about different ways of seeing and understanding job-related hazards.

Employers (and those who represent them) often make them a technical activity. Those with this approach may bring in "experts" -- health and safety specialists -- to tell them what the hazards are, and what to do about them. They often exclude workers from assessments, downplaying employees' experiences and knowledge. Studies show that paperwork for programmes like the Certificate of Recognition (COR) can become more important than the hazards that assessments are supposed to find and fix. An Alberta government study found that employers with a certificate did not have lower injury rates than those without a certificate.

Workers have different "eyes" and experiences when it comes to hazards. Different workers bring different "eyes" to the process, depending on gender, experience with the work, discrimination or harassment at work, etc. That's an important reason why hazard assessments are supposed to include workers.

For good assessments, everyone involved needs to try to see the visible and invisible aspects of jobs and workplaces, including the physical, social and organizational connections. (If they can't, they need to respect those who do.) They have to pay attention to all hazards and how they relate to one another. It does not matter if the health effects are covered by workers' compensation or are found at air levels below the magic number called an **occupational exposure limit**.

Lots of employers and their sectoral organizations now talk about the need to stop looking at "lagging indicators" -- things that have happened, like injuries, deaths and diseases, which sometimes show up as workers' compensation claims. Instead they want to look at "leading indicators" -- the systems an organization has to identify and fix hazards and how well they work. Leading indicators -- checked by asking workers, not just managers -- include:

- real and meaningful worker involvement in all aspects of health and safety, beyond an effective health and safety committee
- good housekeeping, especially when there's a crunch on
- near-misses (of injuries, illnesses)
- number of hazards identified and fixed, especially beyond safety ones
- the time it takes to fix hazards after they are identified
- how responsibilities for health and safety are integrated into the jobs of all levels of management, including those at the top
- comprehensive health and safety programs that are used and evaluated regularly
- the number of on-going health and safety training sessions (for new workers, refreshers, etc.)

The result of this approach provide a big picture of what's going on, who's involved, and where there are or could be problems. They show what needs to be fixed and provide inspiration about how to do that with a real focus on prevention.

Done well, this approach leads to what are effectively strategic negotiations between employers/managers/supervisors and workers (and their representatives/unions, where they exist). Effective solutions account for workers' experiences of hazards and how hazards are connected. The whole process will reduce the overall toll of workplace hazards inside and outside the workplace.

> **(This) forward planning approach (is) essential for systematic, planned preventive action. It is the opposite of an insurance-based approach which measures the likely costs of a situation purely on the basis of past experience.**
>
> **The European Trade Union Institute**

Alberta Law and How to do a Hazard Assessment

Hazard assessments have a special legal meaning in Alberta. The law that requires them -- the Code -- says employers must do more than just look for hazards. They must:

- do the assessments regularly and when work changes in some way,
- <u>fix</u> the hazards found (get rid of them or reduce their harm),
- <u>involve workers</u> in all parts of the assessment, and
- write it all up in reports.

It's important to remember that the health and safety law sets out the minimum required. Best or good practices go beyond the rules in the Code and whatever relates to assessments and the purpose of the health and safety law in other legal documents.

The following official legal definitions of the terms "hazard assessment," "hazard" and "harmful substance" with a clear language translation to explain them, are important to know for doing hazard assessments in the province.

They also are important because <u>every time</u> these words appear in the Act, Regulation or Code, they have these meanings. You can return to these definitions to remind people about what the assessment is supposed to cover, and what hazard or harmful substance means when you're doing an assessment.

The term	The official definition (from the Code)	Clear language version

Hazard assessment (Part 1, section 1, p. 1-12 of the Code)	**an assessment made in accordance with sections 7 or 21 (of the Code)**	**Section 7: Before work starts, or a new construction work site is set up, the employer must:**
		
		• look for job-related existing and potential hazards
		• figure out which ones need to be dealt with
		• eliminate the hazard or reduce the harm it can cause (control it)
		• involve workers in the process
		• write a report about the hazards found and the ways they will be fixed
		• A prime contractor must tell employers on a site about the hazards that may affect their employees.
		
		Section 21: The employer must:
		
		• decide if a worker might be exposed to a harmful substance (see below)
		• if so, identify the substance's health hazards (the harm it could cause now or in the future)
		• assess the exposure (e.g., measure, ask the worker, survey)
		• tell each worker who may be exposed:
		  • about the health effects of the substance
		  • about any air measurements being done for the substance, and the results
		• train each worker about procedures to make the exposure as little as possible
		• make sure the workers understand the procedures

The term	The official definition (from the Code)	Clear language version
Hazard	a situation, condition or thing that may be danger-ous to the safety or health of workers	Anything that could harm a worker -- including their health -- right away or in the future. It does not have to be a chemical or obvious safety hazard. It can be a situation that causes stress, like being bullied or disrespected,t or a condition like bonus pay that leads to people taking chances that could lead to harm.
Harmful substance	.. that, because of its properties, application or presence, creates or could create a danger, including a chemical or biological hazard, to the health and safety of a worker exposed to it	Something that could or will harm workers. It does not have to create danger right away. The harm "includes" chemical and biological hazards. This means other categories matter (e.g., there is an ergonomic hazard as someone works in an awk-ward way to avoid breathing vapours or fumes or skin contact with a product). The harm is from the built-in (inherent) properties of the substance (e.g., it causes allergies), how it's used, or just by being at a workplace or work site.

How to recognize a hazard

The definition of hazard is useful because it is recognizes that hazards come in many forms. The categories in this document are consistent with this definition, and are used in most occupational health and safety work.

"Harmful substance" starts with chemical or biological hazards. But it could be something that fits in another category. Note that, again, it is about the potential to create a danger. You can argue about the harm that "could" be caused without having to positively prove it is currently happening.

Both definitions allow you to be creative in discussions about what can harm workers, and why the hazards must be fixed. They are helpful in assessments.

As the government's explanation says, it does NOT matter if the Code mentions the hazard. All hazards matter, whatever category they fall into and no matter how invisible or obvious they are.

All hazards matter

Hazards specific to a particular job or work site that are not explicitly addressed by the OHS Code should also be assessed by the employer if the hazards are relevant to the employer's operations. Examples include working at extreme temperatures and work-related fatigue.

OHS Code Explanation Guide

Nor does it matter if the hazard is having an effect right now or if you know about what it could do. The Code says the assessment must look for "potential hazards". This is important, especially for the long-term effects of hazards that often are ignored. Most of the 80,000 chemicals out there have not been tested for long-term effects and most products have not been studied for the combinations of chemicals in them. Unlike the government's explanation, "potential" is NOT about the odds of something happening ("foreseeable and reasonably likely to occur"). Potential means possible, capable of happening or developing. It is about the latent or hidden possibilities that may develop, according to a variety of dictionaries.

This is a good example of why it's important to check the definition of words in a dictionary or a law/regulation/code. Just because someone decides to define a word one way in a government publication that interprets or "explains" the legal rules, does not make it correct.
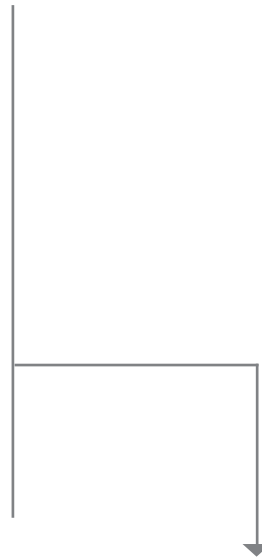
Five criteria for effective health and safety processes

1. Hazard assessments are about getting rid of hazards, whenever it is possible technically. They are not about deciding which ones are acceptable. Nor are they a substitute for clear rules set by governments (e.g., banning asbestos, maximum and minimum working hours).
2. Assessments are not intended to be certificates that say the employer is obeying the law. Existing regulations are the minimum standards to meet. They do not cover all hazards or situations. Assessments must make sure that there are solutions for all identified hazards.
3. Assessments are not a one-time picture that is frozen in time. They must lead to plans for preventive actions. The assessments and plans must be reviewed regularly and when things change. Fancy detailed reports are useless if they don't lead to real preventive actions and better working conditions.
4. Realistically, all parts of hazard assessments are a topic of debate between employers and employees. The debates help those involved confront their different ways of seeing the workplace and its hazards, the health effects that go with the hazards, and the related priorities for fixes. Effective assessments do not deny problems, especially those brought up by workers. They do not make the knowledge of health and safety specialists a reason to ignore workers' experiences, concerns, knowledge and solutions. Instead, they involve those affected, especially for priorities for fixes.
5. Some outcomes of hazard assessments can contribute to public debates and policy activities. For example, many assessments will make clear the poor working conditions for temporary workers (including those from other countries), and others who are employed by agencies or on contract. Getting a bigger picture from a number of workplaces or work sites can lead to a better understanding of social issues like this. After all, the solutions often have to come from outside the workplace, as general policies, regulations, etc.

Source: European Trade Union Institute

The other important point here is that workers, supervisors and high-level managers may have very different ideas about potential hazards. As workers, and worker representatives, the best approach is to start with workers' experiences. If people don't know the hazards, the potential could be great; no one can assume anything without information. If there is a history of people getting sick or hurt doing certain kinds of work, or using particular chemicals, products, tools or equipment, there is a potential hazard with similar items or work practices. Workers don't have to know all the fine details.

When to do a hazard assessment?

Assessments are not a one-time thing. They must be repeated when work changes.

Some changes are obvious, while others -- like hours of work, shifts, bonus schemes, quotas, contracting out, use of temporary workers -- usually are invisible. All count when it comes to the law in Alberta.

Here are the rules about when hazard assessments must be done followed by a quick discussion of practical ways to deal with each one. They are organised in a slightly different way than the Code to help you think about when assessments need to be done.

When does a hazard assessment have to be done?

Section in the Code	The official definition (from the Code)	Clear language version
7(1)	An employer must assess a work site and identify existing and potential hazards before work begins at the work site or prior to the construction of a new work site.	Employers must investigate the workplace, job site, etc. for hazards that are there now, or could be. This must be done before work starts or before a new work site is built; a new work site includes construction sites.
7(4)(c)	when a work process or operation changes	If the work process changes in any way -- that is, any part of it changes -- a new assessment must be done. One also must be done if the overall operation -- a combination of processes -- changes. (See below for examples.)

Section in the Code	The official definition (from the Code)	Clear language version
7(4)(a)	at reasonably practicable intervals to prevent the development of unsafe and unhealthy working conditions	Regular assessments must be done often enough to keep tabs on what's happening. The point is to catch things before they become a hazard. It's also a way to make sure the solutions are working properly. Decisions about how often -- the intervals -- must consider the costs in time, effort and money of doing the assessments. This is compared to costs (in time, effort and money) of not doing them and having hazards. (See the explanation of "reasonably practicable".)
7(4)(b)	when a new work process is introduced	A work process is the method used to get work done. It includes how a task or job is done, the chemicals, materials, tools, equipment and people involved, and the time involved. If it changes, it is "new". (See below for changes.)
7(4)(d)	before the construction of significant additions or alterations to a work site	The work site is a workplace or the place where work is done. Plans for "significant" additions or other changes at any work site -- including construction sites -- must have a hazard assessment. "Significant" means the new addition or change will affect how work is done, the size of a building or work site, or otherwise makes a difference. The design of these changes should prevent hazards, not create them.

How often do I do a hazard assessment?

When things don't seem to change

Even at sites where work doesn't seem to change (e.g. an office, school, park, or even areas of a health care facility) regular assessments should be done often enough to catch hazards in the "process" or "operation". They also should find new hazards that may have appeared or been missed.

The differences may be the result of trying to fix hazards or new training procedures. They also could be the result of looking at different times of day, on different shifts, or in a different season.

Differences also come with different "eyes"; who does the assessment matters. It's yet another reason to include workers and their representatives.

Once a week is a good place to start in many workplaces, especially when you're starting out. If you're not finding new hazards very often, and if hazards are being fixed, it may not be necessary to do assessments that often. On the other hand, just because there is a schedule doesn't mean it's the right one.

WHEN IS SOMETHING DIFFERENT?

Anytime something new is brought into the workplace, whether it be a piece of equipment, different materials, a new process, or an entirely new building, new hazards may unintentionally be introduced.
An organization or process is like a web of interconnections; a change in one area throws a different part off balance. Managing these ripple effects is what makes managing change a dynamic proposition with unexpected challenges. Having a team of operators, engineers, and safety and health professionals jointly analyze potential changes or new equipment, etc., before they are put online, can identify safety and production concerns up front, hopefully heading off problems before they develop. Fixing potential problems before they occur usually is less expensive than attempting to fix a problem after the fact.

US Department of Labor

After each assessment, decide when the next one needs to be done. And always look for what is supposed to have been fixed; have they been done? What difference(s) do they make? Are there new hazards as a result of the fixes? If something changes about the work, the people doing it, or the surroundings, it's time to do a new assessment.

If you have a **joint health and safety committee**, be sure the assessments are done before the meetings. Union reps need enough time to discuss recommendations, so they are prepared for the meeting. (So too do the employer representatives.)

When something changes

"Change" means different things to different people. It depends on whether you're affected or involved, if you're observing from afar, or if there's a set of "new eyes" around. You also may find that your ideas about changes are different once you start doing assessments.

The Code doesn't define the word when it says new assessments must be done when something changes in the work process or operation, when a new process comes in, or before significant things are changed or added to a work site. The government's explanation document isn't really helpful either.

The health care best practices guide does say that things are changing constantly in the sector, while the Calgary School Board reminds us that "(m)ost changes are gradual and their cumulative effects go unnoticed until they cause major problems."

So what is a "change" in terms of work-related hazards and preventing injuries, illnesses, diseases and deaths? In general, they include:
- new or different ways of doing things, however small the change
- new tools, machines and equipment
- new or updated information about health hazards

New information about health hazards can come from sources such as:
- inside the workplace, including:
  - workers' questions and concerns
  - the employer (e.g., plans for new processes, tools, equipment, work methods, renovations)
  - consultants to the employer (e.g., reports about the workplace or jobs within it)
  - the health and safety committee (union or joint)
  - the union, and
  - individual workers, supervisors, engineers, health and safety specialists, and other employees
- outside the workplace, including:
  - new information about health hazards or technologies
  - corporate annual reports
  - new or revised government policies, regulations, other laws
  - studies and reports from academics, government organizations, think tanks, etc.
  - unions and environmental organizations
  - traditional and social media

Workers' questions and concerns require two forms of listening:

- conversations: informal (e.g., over lunch, at the water cooler) and formal (e.g., at union meetings, staff discussions, health and safety trainings, tailgate talks)
- organized questioning (e.g., surveys, questionnaires, interviews, focus groups, mapping sessions)

For example, more and more studies are showing that the plastic bisphenol A (BPA) is in our bodies and can have serious health effects, especially at very low levels. With this much "new" information out there, there is good reason to do a hazard assessment about the presence and use of BPA in any workplace.

Visible and Invisible Change

A helpful way to think of change is what's obvious or visible, and what's not. In this case, "visible" means something you can see, hear or smell if you look for it. "Invisible" means something that is not obvious, or what you have to dig to get.

Examples of Different Kinds of Changes

Here are some examples of different kinds of changes. They are organised by the categories of hazards used in this document. (Add your own examples or ones that others in your workplace suggest.)

Safety and mechanical hazards

Examples of visible changes

- Missing machine guards

- People not wearing personal protective equipment (PPE)

- Poorly maintained equipment

- New tools, equipment or additions to them

- Additions, renovations or other big changes to buildings

Examples of invisible changes

- Worn bearings inside equipment that don't make a noise

- Changes in PPE policies, so people are not given PPE when they need it, or the equipment is locked up

- New procedures that are needed when something changes about how the work is done, the space in which it is done, etc.

Physical hazards (from energy sources)

Examples of visible changes

- Lights that are out, or flickering

- Broken wires or worn wire coverings

- People wearing radiation badges, or not

- Loud work areas

- Temperature and humidity (in general)

Examples of invisible changes

- Maintenance problems, reduced budgets

- Electrical shorts, until they occur

- Radiation levels that have gone up or down, lack of radiation badges or training about their use

- New procedures that are needed when something changes about how the work is done, the space in which it is done, etc.

Chemical and mineral hazards

Examples of visible changes

- Dusty surfaces

- A new smell

- New products (especially if there's an inventory list)

- New insulation on pipes

- Ammonia tanks outside a building

Examples of invisible changes

- Dust in the air (unless it's reflected by the sun in the Tyndal Beam effect)

- Vapours or fumes in the air from toxic chemicals, especially if they don't smell or can't be seen

- The hazards of new products

Biological and communicable hazards

Examples of visible changes

- Use of needles without engineered changes to prevent injuries

- People wearing N-95 masks

Examples of invisible changes

- How easy it is to get engineered needles and training about their use

- Why are the masks needed?

- Hand washing/cleaning decreased (and why)

Ergonomic hazards

Examples of visible changes

- Repetitive movements

- Awkward posture

- Poor lighting, glare

- New chairs or lack of them (e.g., working in cells)

Examples of invisible changes

- Speed-up or pace of work "rules"

- Using someone else's work station, no time to make, or knowledge about, adjustments

- Maintenance schedule, number of people doing maintenance, processes for getting maintenance done

Work organisation or psychological hazards (stressors)

Examples of visible changes

- New office for security personnel

Examples of invisible changes

- Violence (in the full spectrum from verbal abuse to physical force)

- Turnover

- Worker dissatisfaction

- New work schedules or hours of work

- Bonus schemes, quotas, commissions, and other payment methods that depend on goals being met

- Contracting out, use of temporary workers or those from an agency

VISIBLE AND INVISIBLE CHANGE

BPA is not good for us -- information about the hazard grows
BPA is a synthetic estrogen. It affects our hormone (endocrine) systems that control how many of our other systems work. That makes it an endocrine disruptor. The chemical has been linked to cancers, development and behavioural difficulties in children, miscarriages, and heart disease.
This is a work-related hazard, especially those handling cash register receipts (it gets in through their skin easily) and in the plants where BPA products are made (especially when plastics are heated and get into the air). For example, a recent Canadian study found that young women in food canning plants were five times more likely to have breast cancer than women not in those jobs.
A study published in 2010 found it in the blood of 91 percent of almost 5,500 Canadians; levels were higher in children ages six to 11. Another that came out in 2013 found it in 95 percent of Canadians between three and 79. Again, kids -- especially those between three and five years of age -- had the highest levels.
Why is it so common? The chemical is produced in huge amounts around the world. It is used to make polycarbonate/hard plastics (recycling triangle with the number 7) and epoxy resins. Those plastics or resins go on to line food tins and drink cans; make bottles, storage containers and impact-resistant safety equipment; they are in about half of all cash register receipts (especially thermal ones). (The substitute in receipts -- BPS -- is very much like BPA.)

Two effective methods for a good hazard assessment

There are two parts to any hazard assessment: the content -- what's covered, what prep work is done, etc. -- and the process -- who's involved, how often, follow-up, etc.

For workers and their representatives/unions, the most important content is information about how the work is organised. This ensures they have the big picture context to understand the hazards and how they are connected to one another. They also can better understand the organizational issues that are key to know about when it comes time to find and fix the hazards.

Content should include:

- training about hazard categories, what to look for, how do to do assessments, their purpose, the process of reporting what's found, follow-up expected/required
- looking for all hazard types or categories
- using documents that go beyond checklists to action
- report forms -- what's in them and how they're used
- regular meetings/conversations with union/worker reps and management/supervisors about the results and the fixes

Process is key. The most important part is worker participation. Steps include:

- preparation
- doing the assessment
- debrief

- report
- negotiate "fixes"
- talk with the workers affected about specific hazards and fixes
- evaluate and follow-up

Alternate Method 1: Screening, Observation, Analysis, Expertise (SOBANE)

A very useful method to assess hazards is focused on fixing what's found quickly. It avoids measurements and the arguments that go with them about what the numbers mean and how they compare with which criteria.

SOBANE was developed in Belgium, with financing from the Belgian Ministry of Labour and the European Social Fund. Its author is Jacques Malchaire from the Unité Hygiène et Physiologie du travail at Université catholique de Louvain (UCL).

The name is a short version of the four steps that are possible: screening, observation, analysis and expertise. It starts with workers and their supervisors looking at things, and figuring out what can be fixed right away and what else needs to be investigated. Only when they have gone through the first two steps are outsiders brought in.

ALTERNATIVE METHOD 1 SOBANE

"Quantification is essential to determine whether there is a 'risk' and thus whether or not an action is necessary". This assertion rests on the belief, often not formulated but real, that a risk exists above a certain threshold (25 kg, 80 dB(A), 100 ppm on average.), and that below these values, the situation is safe. This position is the legalist: position one wants to comply with the law.

To this, it is necessary to oppose the preventive approach, which does not make any difference between 83 and 87 dB(A) because the risk of hearing impairment is practically the same and which seeks to improve the work situation as much as possible.

This distinction between the preventive and legalist approaches appears fundamental in the context of a long-lasting prevention.

A legalist approach requires the quantification of the risk by trained people in order to determine when the legal threshold is reached: the worker, little or not trained in these quantitative methods, is possibly consulted, but is not the main actor.

The preventive approach seeks the optimal state of health and wellbeing for the workers, of technical and economic health for the company: the work collective can then not be circumvented and becomes the main actor.

The legalist approach simply seeks to put the things in compliance with the regulations in force. The preventive approach on the other hand seeks to found and maintain the state optimal, beyond the laws.

The goal of the preventive approach is to reduce the problems as fast as possible. Consequently it asks to minimize the preliminary analysis and to integrate any problem in the broader concerns of effectiveness, productivity and human and industrial quality of life, so that the recommendations are pragmatic, practical, adequate and saleable.

The SOBANE Risk Management Strategy and the Déparis Method for the Participatory Screening of the Risks

PREVENTION

SOBANE METHOD

SCREENING | OBSERVATION | ANALYSIS | EXPERTISE
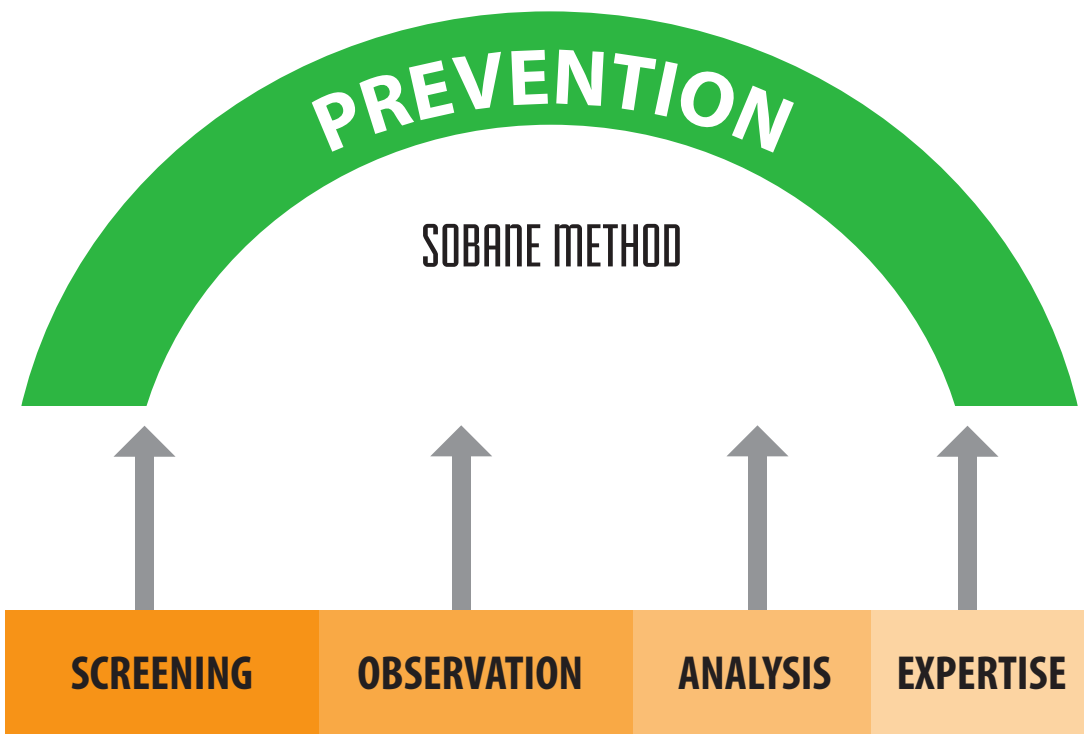
The Belgian government expects employers to use the method in their hazard assessments. It says the approach is a good way to "implement a structured and comprehensive prevention policy which relies on the participation of all the players inside and outside the company, in particular by making available good practice guides, increasing company's awareness and promoting changes in behaviour regarding prevention."

As its use spreads, SOBANE has been integrated into some European Union materials and across a variety of sectors. There are more than 30 guides (in French and Dutch mostly) for a variety of sectors (e.g., health care) and hazards (e.g., psychological hazards), as well as the general approach.

Alternate Method 2

Preparation

Get training about how to do hazard assessments.

Hazard assessments require skills that do not fall from the sky.

It requires learning to talk to and listen to co-workers, especially those who are afraid of saying anything. It takes negotiating with managers about what a hazard is, how to do an assessment, and fixing the hazards to really prevent people from being harmed. It takes knowing your rights, and helping others use them. It takes being able to take notes and write reports, and much more.

Worker/union reps doing any kind of health and safety work need "new eyes" to see the invisible hazards that are behind the most visible hazards and people's behaviour. They need to understand how social inequalities show up on the job, and how that affects who has to deal with what hazards.

And it takes persistence to push for doing "the right thing" to take hazards seriously and fix them.

In short, it takes all the qualities of a good union or worker representative who deals with a job-related issue and whose aim is justice at work.

ALTERNATE METHOD 2

Even the Alberta government expects workers to be involved in fixing hazards. The health care best practices guide asks in its checklist about an effective hazard assessment system:
Are workers actively involved in the hazard identification and control process? **It says later that:**
Worker involvement ensures relevance and worker participation (in a health and safety management system).

Those representing workers also need a general union and worker perspective on health and safety -- a public health perspective really. It's difficult to sort out the differences between your own experiences and what the employer says. It can be hard to see management's control of the topic and how their perspective frames how health and safety is discussed and dealt with. Worker/union reps need to trust their own experiences, ask about what's really going on, and not blame workers for being "stupid" or "not caring".

Diagnose the situation from the workers' and union's perspective

Work with union reps and individual worker reps to figure out:

- what you know about the health and safety program and hazards in the workplace or in the jobs being done at a site
- how the assessment(s) will be done -- work with the employer to sort out the "ground rules"t including how the union and individual workers will participate
- how you'll get information from workers
- what you need to know (e.g., make a list based on the input document)

List the problems (that you know of so far)

- do a rapid assessment to get information from workers about their questions, concerns and ideas for fixes (e.g., do body maps, have quick "focus groups" at breaks)
- ensure the workers consulted represent all shifts, as many departments as possible, and are representative in other ways (e.g., gender, age, heritage, language)
- observe what you can and take notes about the hazards you see and questions you have

- gather the documents that you already have that may be useful (e.g., from the employer, joint health and safety committee)
- develop a list from the results, setting priorities if some are obvious quick fixes or serious issues

Start negotiating about the assessment

- compare your list with the employer's in the joint health and safety committee (if possible)
- agree on a preliminary list of what can be fixed right away, what is serious and what needs more investigation
- agree on the details of the formal assessment (content -- including criteria for what's serious or can be fixed quickly, who's responsible for fixing what, documents to use -- and process -- timing, time allotted, who's involved, who writes reports, who gets them and okays them, and more)

Collect information for the hazards you know about

- collect information about the hazards you know about or expect to find, including how they might be fixed
- be sure to include your questions about the hazards (e.g., always ask about the long-term effects, cancer, reproductive effects for women and men, if it can cause allergies or make them worse)
- get information about complaints, first aid visits, workers' compensation claims and other documents
- find out about chemicals used:

  · review safety data sheets (SDSs) -- formerly called material safety data sheets (MSDSs) -- and inventories of chemicals

  · use the information to make lists of chemicals by the categories of "super nasties" in terms of effects: **cancer**, **reproductive effects** (teratogen, endocrine disruptor, embryotoxin) for women and men, **sensitisers** (things that can cause any kind of allergy or asthma, or make allergies or asthma worse), **mutagenic** (can change body cells in harmful ways, often related to cancer or reproductive effects)

  · if they have an occupational exposure limit in Alberta or elsewhere
- get information about each department or work area such as:

  · types of work done

  · shifts/hours of work

  · number of permanent/regular and temporary/contract/agency workers by shift/time of day and in each job

  · names of supervisors and other managers, and their titles and tasks

  · names and shifts for union stewards and joint health and safety committee members

Assessment

- make sure that all hazard categories are checked out and that possible hazards are included (not just the obvious and existing ones)
- look around: get in the habit of keeping to a system by starting from the left or right
- look down: check the floor, pits, etc.
- look up: check the ceiling, upper storage racks and cupboards, overhead fixtures, etc.
- look inside: storage cabinets, cupboards, storage rooms, etc.
- talk to people!
- write down what you find, questions you and others have, etc.
- take pictures and/or video, with date and time stamps

It's important to:
- look at all aspects of the work, including what is done on different shifts or days of the week
- include non-routine activities (e.g., maintenance, repairs, cleaning)
- review incident/near-miss, first aid and compensation records
- include people who work "off site" -- at home, at other job sites, with clients, etc.
- examine how the work is organised or "done" (hours of work, length of shifts, experience and age of people doing the work, systems being used, etc.)
- consider foreseeable unusual conditions (e.g., how will a power outage or emergency affect hazard controls)
- include visitors or the public, if appropriate

Hazards also depend on people's size, shape, height, experience, abilities and existing health issues (e.g., allergies). What works for the "average" white male can be a hazard for anyone else, male or female.

Debrief

Those representing workers in the assessment need to caucus or meet after the inspection to:
- list what can be fixed right away and how (even if it's a short-term solution)
- decide what needs to be investigated in more detail (this is the SOBANE approach)
- when you can, decide what your longer-term solutions would be for each hazard found, or how to get more information about solutions (e.g., less toxic or non-toxic chemicals, ergonomic chairs and keyboards, effective anti-fatigue mats, engineered "safe" needles)

- figure out what other information is needed (e.g., about hazards found, how big a deal the hazard is, its priority for the workers involved, possible solutions)
- set your priorities and time lines for fixing the hazards found
- figure out how you will follow up with the workers involved, the employer and the union

Employer representatives should be doing the same thing -- figuring out what needs to be done, who's responsible, time lines, etc.

Negotiate the "fixes"

Employers have to involve workers in figuring out the fixes for hazards. That's one way to interpret section 8(1) in the Code, where it says an employer *must involve affected workers ... in the control or elimination of the hazards identified.*

Unions representing those affected workers need to be involved in decisions about how to fix the hazards found in an assessment. (After all, unions negotiate solutions to issues about working conditions, including health and safety.) This can be done through the joint health and safety committee, smaller department or site committees, or another arrangements that allow workers' voices to be heard in a collective way.

In the end, management reps should not determine the fixes on their own. Unions and worker reps need to negotiate what will be done, so the perspective and knowledge of affected workers is used.

The negotiated results will show up in the report employers must prepare. That report has to cover the hazards found and what to do about them. Government guidelines suggest that this can be done on forms.

If the employer has some, give them a try -- with a critical eye. Whatever the report form, it needs to:

- explain what was found
- describe specific prevention measures to take, remembering that the most effective -- and first priority legally -- is to get rid of hazards
- include short-, medium- and long-term solutions
- name the person/people responsible for making sure the fixes are done and evaluated
- have deadlines for getting things done
- be dated and signed by those involved

Union/worker reps should be able to sign off when they agree with the report. If they don't agree with any part of it, there should be space for their comments.

Talk with the workers affected about specific hazards and fixes

The employer must tell all workers affected by the hazards about:

- the hazards found
- their health effects
- the fixes planned
- how the final version of the solutions are supposed to work

As union/worker reps, you also have a responsibility to make sure union members and co-workers know about these things and get good, accurate information and a bigger picture view. You should use this opportunity to:

- find out what was missed
- collect questions about the hazards and process for fixing them
- answer whatever you can
- get more information to feed into the process
- figure out if you need to hold a meeting/conversation with the workers involved and/or others
- make sure the employer is telling workers everything the law requires, and the truth about the hazards

Evaluate and follow-up

Hazard assessments need follow-up. This includes:

- asking the workers involved what's happening and what their take is on progress, the fixes, their involvement, etc.
- making sure things are fixed in the way that's supposed to happen (e.g., workers should not be given respirators as a permanent solution when the real fix is repairing the ventilation system)
- checking that the fixes are working (ask the workers involved)
- reminding managers about deadlines and asking about progress
- going back with those who did the assessment to see what's happened
- negotiating new timetables as needed

For tools and resources, see the Resources Module of these Guidelines.

The Alberta government has produced best practices guides about health and safety programmes, on-line training about hazard assessment, and other documents that cover the topic. So have other provincial organisations in the private and public sectors. Here are some that may be useful, at least to know what employers are being told (always remember to keep a critical eye on explanations of what's required and what words mean):

Sector	Organisation	Document(s)	Notes
Public - education	University of Calgary	Quick guide to completing the hazard assessment and control form (2012)	
Health care	Human Services Alberta (with advice from stakeholders)	Best Practices Guidelines for Occupational Health and Safety in the Health-care Industry (Overview, biological hazards, chemical hazards, physical hazards, psychological hazards)	Physical hazards is used to include: safety/mechanical hazards and ergonomic design hazards
Health care	Human Services Alberta, 2011	Occupational Health and Safety Hazards and Controls for Community Clinics and Doctors' Offices	Summarises the best practices guidelines for healthcare
Health care	Human Services Alberta, 2011	Handbook of Occupational Hazards and Controls for Healthcare Administrative Workers	Summarises the best practices guidelines for healthcare

4.0 How to Improve Worker Participation

Best Practice Guidelines:
Effective Worker Participation in Hazard Assessments
Alberta Workers' Health Centre, December 2015

About the Alberta Workers' Health Centre:
The Alberta Workers' Health Centre is a registered charitable, non-profit organization that supports all workers, unionized and non-unionized, who need assistance to help make their workplaces healthier and safer. Since 1983 it has done this through programs of education and training; research and information; assessment and support for workers across Alberta.

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This module will focus on specific barriers to worker participation in hazard assessment processes and will provide some practices for eliminating or reducing those barriers.

Outside of workplaces people are expected to participate in many things. We join -- and run -- community-based organizations. They could be our unions, sports clubs, church-affiliated events, parent-teacher associations, or community centres. We are expected to participate in things related to governments, including elections. In all these places, participation means having a voice, making decisions and working together. We're told it's part of living in a democracy.

Most workplaces are different. They are not democratic organizations in which workers have a say and can speak up freely. Employers and their managers have power -- called management rights -- to make decisions about big and small things, all of which affect workers' health and safety, wages, hours of work, and working conditions in general. Employers also have a legal responsibility for the safety of their employees.

Labour laws have changed over the years. Health and safety laws started to advance in 1972 in Saskatchewan, where the Deputy Minister of Labour, Bob Sass, introduced the idea of three worker health and safety rights or the three R's. By the late 1980s, most Canadian health and safety laws included three rights: to know about hazards, to participate in health and safety, and to refuse dangerous work.

In all parts of Canada other than Alberta, the "right to participate" means having joint health and safety committees in workplaces with 20 or more workers; most have representatives if there are 10 to 19 workers. Where there is a union, it usually is involved in choosing the committee members and/or representatives.

Why is Full Participation Important

It has been shown that successful Health and Safety Management Systems have high levels of worker involvement. Worker participation in the development of the system is particularly important to create ownership and overall buy-in into the system. Additionally, worker participation in the development of Health and Safety will help ensure a better fit with the culture of the organization. In order to promote worker participation, actively involve them in the development of hazard assessment, inspections, preventative maintenance, training, emergency response, and incident reporting systems. Look for opportunities to get workers from all areas of the organization involved, and provide regular updates on the progress of system development to keep the feedback loop open.

Building an Effective Health and Safety Management System
Alberta Government

Alberta's Unique Provision for Worker Participation

Alberta does not require joint health and safety committees for most workplaces. However, it has a unique provision in its health and safety law that requires employers to have "worker participation" in all parts of hazard assessments. The Code says that employers must involve workers in these assessments. It is not a question of being "reasonably practicable" (as it stated until 2009) or being a good thing to do, or something that employers should do.

Participation exceeds consultation

Participation is different than consultation, in which you are just asked what you think about something. The Code uses the word "involve" which means including people, recognising their role and giving them a say.

"Worker participation" in hazard assessments should mean that workers:

- have a real say in, and choices about, the assessments -- planning the activities, when they're done, how, who's involved, what tools are used, the reports written, the decisions about fixes, and evaluation of the results and process; and
- are respected for their knowledge, skills and ability to learn and contribute to all aspects of identifying and fixing hazards.

In practice, this kind of worker participation means that workers (and their representatives, where they exist) negotiate informally with managers and employers about hazard assessments, from the planning stage to evaluation and follow-up. In a union context, it could be called bargaining.

Why is full participation important?

There are many reasons why it is important to have workers participate in hazard assessments.

Government and employer documents talk about what workers know about, and can contribute to, finding and fixing hazards. It makes good business sense. They talk about workers being more motivated, having better quality products and services, and improving labour-management relations.

We have a right to participate in all decisions about health and safety in our jobs and workplaces, say workers and their unions. It's our health, our bodies, and our knowledge. No one else should make decisions that affect our health. As human beings, we deserve respect -- for ourselves, our skills, and our knowledge.

Studies -- and experiences -- back up statements that hazard assessments and preventing the hazards found go better when workers really are involved. Their real participation improves the results when it's happening in a positive, supportive environment. Done properly, workers can see their advice is acted upon, hazards are dealt with and conditions are improved.

In Europe, the recommendations and practices about active worker participation are clearest. There, many institutions support worker activities in OHS and many employers accept that unions and their members are players with important, if not equal, status.

How should participation happen in hazard assessments?

What do workers need to participate? First and foremost, they need:

- training from a workers' perspective (e.g., union, public health) about:
  - health and safety principles
  - types of hazards
  - finding hazards (surveillance)
  - fixing hazards -- the principles
  - resources (people, on-line, organisations)
  - negotiating and other process skills
- support from their union, co-workers, managers/supervisors and the organisation
- time to learn, prepare for assessments, do them, and follow up

Guidance from elsewhere is helpful. For example, in Australia worker participation in health and safety has led to laws requiring workers to choose health and safety representatives (HSRs). Their job includes hazard assessments. See the list of what employers must provide these participating/involved workers in the Worker Representation and Participation Guide from Safe Work Australia (included as a resource in these guidelines).

> Worker participation helps ensure valid results as workers can identify noise sources, indicate periods when noise exposure may differ, and recognize whether noise levels are typical or atypical. Workers can explain how different operating modes affect equipment sound levels and can describe their tasks and working positions.
>
> **Section 219 Noise exposure assessment**
> **OHS Code Explanation Guide Part 16 Noise**

Participation exceeds consultation:

Full participation goes beyond consultation - workers and their representatives are also involved in making decisions. Worker participation in health and safety is a simple two-way process where employers and their workers/worker representatives:

- Talk to one another
- Trust and respect each other
- Consider what everyone has to say

- Listen to each other's concerns
- Discuss issues in good time
- Make decisions together

Look for and share views and information

Worker participation in safety and health at work
European Agency for Safety and Health at Work

What are barriers to worker participation?

Studies have looked at what makes it hard for workers to participate in hazard assessments and other job-related health and safety activities. The broad categories and some specifics that are barriers to worker participation include:

- *opportunities*
  - how the work is organised
  - pace of work and payment schemes
  - environmental limitations
  - myths about careless or "accident prone" workers
  - employer's overall approach to health and safety, including their openness to including workers and their representatives
- *capacity*
  - definition of hazard and what's accepted as one
  - precarious/temporary/part-time/agency work
  - immigration status
  - lack of training
- *willingness*
  - fear of reprisals or retaliation
  - employer created silence
  - gender, discrimination and harassment/bullying

Understanding and removing these barriers makes it easier for worker participation.
This module will look at some of the "opportunities" and "capacity" categories. The "willingness" category will be addressed in more detail in the next module.

Pace of work and compensation schemes

Evidence from research suggests that complex relationships arising from contracted work arrangements may increase risk for workers.

Subcontracting undermines the traditional organizational structures of a single employer, centralized management, common conditions and rules of work and familiarity with co-workers.

Sub-contracting sometimes involves a loss of in-house knowledge of occupational health and safety. It may also may involve the reduction of oversight and loss of clarity for responsibility by supervisors.

This can be particularly important in circumstances where work changes and where new tasks may be introduced along with new players (workers, supervisors).

Focus group data suggested that in these circumstances contractors may decide to forego hazard assessments altogether.

> **"Subcontracting can result in incomplete and rushed handoffs between contractors. In one instance a contractor arrived and started work before the field level hazard assessment process had been completed with the contractor." (Researcher field notes)**

Pace of work and compensation schemes (examples)

Pay by the job or other variations of piece work are very common. Yet they pose some serious challenges to the best practices of worker participation. Time is money is the mantra of piece work. At an individual worker level or at an organizational level (contractor to sub-contracting company) there are several negative practices that have been linked to poor workplace health and safety outcomes:

- Piece-work encourages haste. Cost per hour, or to a worker "dollars per job," means that the more you can accomplish in an hour or a day, the more you get paid.
- Small sub-contracting shares this 'incentivization' of speed.
- Work hastening may also trigger superficial hazard assessment processes such as a pre-printed checklist of pre-considered hazards, which replaces engaged, curious observations of hazards.

> **"During field observations I found one organization that seemed to take a relatively thorough and systematic approach to their hazard assessments. When asked if they would share this process with other contractors working alongside of them, their lead commented that their process was "proprietary" and they would not be sharing it with others. This was something that they had been instructed by their supervisory office."**
>
> **(Researcher field notes)**
>
> **"The more experienced person you are on the job, the more they hate to have you involved in the process. Because your experience shows that the supervisors don't know what they are talking about."**
>
> **(Focus group)**
>
> **"Sometimes due to lack of space, they gather only the foreman of each trade (for the hazard assessment). If the foreman wants to tell us what he remembers, he does. If not, then whatever."**
>
> **(Worker interview)**

Employers have been known to list "standard operating procedure" or "SOP" as the 'control' or safe practice associated with known hazards. The SOP is then considered the process for controlling the hazard and is usually tied to some established practice.

This approach promotes a highly mechanistic approach to the workplace, discouraging an appropriate and thorough hazard assessment process and usually encouraging a low level "at the worker" control instead of a fresh look at the hazard and a critical eye to what might be the best practice, including eliminating the hazard, which is, in fact, the law in Alberta.

Sub-contracting and commitment to health and safety

Barriers to proper, engaged worker participation in the assessment process may also result in solutions that focus on worker behavior, personal protective equipment or other low-level 'controls' that are seen as easy to implement and don't involve significant changes to the work process or tools themselves.

Best Practice

Design the workplace and process such that the hazards are eliminated. Equipment and processes that are adjustable to fit the individual characteristics of human bodies and our different abilities are the key to success.

> "Adjusting the bidding process to include such a requirement might serve to broaden employer views (or at least nullify the effect of narrow views) of incident causation that appear to be a barrier to worker participation.
> Such a requirement might also generate pressure on smaller firms (which pose particular OHS challenges) to train workers in hazard assessment and provide workers with opportunities to participate."
>
> **Barnetson**

It can be argued that controls 'at the source' might, eventually, result in a re-design of the workplace and work process to remove the risk from the workplace rather than finding ways to work-around the risk, thus making the workplace less susceptible to short-cuts and less necessary for effective field or worksite level hazard assessments.

Adjust the bidding process to include a requirement for providing workers with adequate training in hazard identification and a standardized hazard assessment procedure.

Schedule modifications and staffing changes can be expected to improve health and safety outcomes

One key study in health care found the following:

"The relationship between worker safety and patient safety has been studied for nurses and physicians, and has demonstrated meaningful associations between certain exposures and outcomes [8, 9]. For example, schedule-related clinician fatigue produces adverse outcomes among clinicians themselves, who

sustain increased injuries from sharps, increased rates of depression, and increased rates of post-work motor vehicle accidents. In addition, patients cared for by over-tired clinicians experience higher rates of medical errors. Effective interventions to address clinician fatigue have been developed and implemented, and in quasi-experimental studies were found to significantly decrease errors [10]. However, these interventions require schedule modifications and staffing changes and have failed to gain widespread implementation."

<div align="right">From "Front Line Health Care Workers"</div>

This study also showed the reluctance for employers to make changes to the structure of work itself, despite the potential for improved safety outcomes.

Under Alberta's Code, what does this leave us with in terms of options?

Downloading responsibility for completion of the job has been a long-standing way for contractors to side-step responsibility for health and safety. Building a 'commitment' to health and safety into a contract is not the same as creating a safe and healthy workplace.

Best Practices

Design the workplace and process such that the hazards are eliminated. Equipment and processes that are adjustable to fit the individual characteristics of human bodies and our different abilities is the key to success.

Translate piecework contracts into hourly contracts. Trade 'cost certainty' for improved health and safety.

Provide more active supervision.

Encourage more active 'outside' intervention. State "OHS Officer" or "internal". Increase active supervision by contractors.

> In theory, most continuous quality improvement approaches (such as Lean Six Sigma, Plan-Do-Check-Act, and Clinical Microsystems) rely on front-line worker input as part of a multi-disciplinary team working together to identify hazards or opportunities for improvement; analysis to develop, implement, and evaluate interventions; and active follow-up assessment. In practice, though, front-line workers may be excluded from these efforts.

Don't assume compliance or safety comes with agreeing to a contract that says it should. Due diligence is not the same as health and safety.

Precarious work and worker vulnerability

Precarious work can arise from a variety of different circumstances.

A sub-contracted relationship may leave workers particularly vulnerable to not being rehired if they are seen to be too 'pushy' or inappropriately vocal about their health and safety concerns.

This relationship plays into their willingness to remain silent in the face of potentially dangerous work organization or practice.

Best Practice

Design the workplace and process such that the hazards are eliminated. Equipment and processes that are adjustable to fit the individual characteristics of human bodies and our different abilitlies is the key to success.

Gender, discrimination and harassment

Our research indicates that women are more likely to have the hazards they face dismissed by employers, regulators and health care providers (and, thus, compensation boards). In this regard they are reflecting the long-term devaluing of women's work. Our research also shows that the gendered nature of workplaces (which sometimes shows itself as harassment and discrimination) may reduce the willingness of women to participate in hazard assessments.

(Barnetson)

> "Machinery and process may all contain assumptions about operator height, weight and strength. These assumptions are disproportionately based on a male norm and pose ergonomic and other hazards to workers who do not fit this norm."
>
> **Barnetson**

A consequence of this may be the exclusion of certain types of hazards that are more likely to be seen as 'gendered' or which may go unrecognized by those for whom the hazards may have less impact.

Examples of 'gendered work hazards' include:

- Hazards inherent in 'gendered work' such as high heels in food service industry, sexual harassment due to sexualized workplace dress codes.

- Increased hazards resulting from 'gender' based physical characteristics such as height of work surface, lifting requirements, etc.

- PPE designed for typical male physiology may make this equipment less effective and less comfortable (creating new hazards) for women.

Gender-based exclusion from participation

The willingness of employers and co-workers to suggest or accept solutions which respect gender may also be challenged by both the exclusion of women from the hazard assessment or the marginalization of their concerns and suggestions for elimination or controlling the hazard.

In many ways this is similar to the problems which we find in workplaces with other forms of marginalization, based on other personal characteristics of workers. Inter-related issues around language, literacy and ethnicity may limit workers' capacity to participate in hazard assessment processes and they may also limit workers' willingness to do so, as a way of reducing their potential exposure to harassment and discrimination.

Finally, similar exclusions may exist in cases where only a few workers are performing what are seen as different tasks and facing different hazards. During a hazard assessment process the loudest voice will likely belong to the majority of the workers affected and those who work in smaller numbers will face barriers in having their concerns heard and addressed.

> "Controlling gendered hazards may require expensive changes to work processes. Consequently, employers have little incentive to engage in gender-based hazard assessment and may indeed participate in or condone the suppression of identifying such hazards."
>
> **Barnetson**

Workplace health and safety is not about creating a consensus. The hazards affecting one worker require the same attention as the hazards which affect many workers.

Best Practice

Design the workplace and process such that the hazards are eliminated. Provide adjustable equipment and processes. The work equipment and processes that should be adjustable to fit the individual characteristics of human bodies and our different abilities is the key to success.

Provide gender/oppression awareness training.

Reducing barriers to worker participation when work changes

Section 7.4 of Alberta's OHS Code requires employers to make a further hazard assessment when new work processes are introduced, when work processes or operations change, or when the work site is altered or added to. Many of the barriers to workers' opportunity, capacity and willingness to participate in hazard assessments set out above are also relevant to hazard assessments when work changes.

For example, as organizations make greater use of subcontracting arrangements, the greater number of actors and interfaces may reduce an organization's ability to tell when work has changed and, thus, when a new hazard assessment is required.[1] The ability of employers to recognize change may vary depending upon the type of change. Episodic change is infrequent, discontinuous, and intentional and is likely to be easily recognizable (e.g., personnel or technology change imposed by the employer across the workforce).[2] By contrast, continuous change reflects small continuous adjustments that, over time, create substantial change. Continuous change can be hard to recognize. It often emerges organically and is informally and unevenly implemented, occurs at a low level, often on the initiative of (and known to) relatively few actors, with unclear and/or seemingly benign implication.[3]

Some forms of episodic change also create hazards that may be difficult to perceive and/or appear immutable. For example, a shift-schedule change (e.g., moving from working five eight-hour shifts to four ten-hour-shifts) may introduce or intensify fatigue-related hazards. Yet such a change would be unlikely to trigger a further hazard assessment because (1) it is an incremental change, (2) that has little affect on work processes, and (3) may be driven by financial imperatives. In both episodic and continuous changes, there may be few organizational triggers that lead to a review of existing hazard assessment and control strategies and thus employers may fail to provide opportunities for workers to participate in hazard assessments.

The opportunity for and willingness of workers to participate in further hazard assessments following episodic change may also be affected by the industrial relations context of a change. Workers have a variety of reactions to workplace change (e.g., acceptance,[4] resistance,[5] cynicism [6] and commitment [7]). The context of a change (e.g., expected or real resistance) may reduce the opportunities employers offer workers to participate in hazard assessment as well as how seriously employers take workers' comments. Similarly, worker willingness to participate may be affected. Further, conflict over workplace change may distract both employers and workers from the safety implications of a change.

The research we did in the creation of these guidelines suggests some ways in which to increase worker participation in hazard assessment such that employers can meet their obligations under Alberta's OHS Code.

Worker Training

Workers' capacity to participate in hazard assessment turns, in part, upon their knowledge of hazards and the hazard assessment process.

Providing such training to workers in a high-engagement format would enhance workers' capacity to participate in hazard assessment.

Training would also offer opportunities for workers to understand the full spectrum of hazards, their rights around hazard assessment and control, and consider ways in which they can support one another effectively in the face of employer resistance.

Periodic retraining or reinforcement of hazard assessment principles (particularly where hazard assessments are infrequent) may be necessary to maintain worker skill levels.

Where literacy, language- or culture-based barriers exist, these will require remediation or accommodation.

Supervisor Training

Supervisors also require adequate training in order to effectively manage the hazard assessment process (e.g., conducting a hazard assessment while in visu-

al contact with the worksite), interact with workers (to prevent silencing), and respond to worker contributions to hazard assessments.

Improving the Hazard Assessment Process

Allow Adequate Time

Employers need to allocate adequate time for hazard assessment activities. Employers must also create systems by which to identify instances when work has changed (particularly incremental changes) and a new hazard assessment is required.

Take Action On Hazards

When hazards are identified, employers must both take action and communicate the results of that action. These behaviors are required to prevent worker cynicism and withdrawal.

Take Responsibility

When incidents occur, a review of the hazard assessment may be in order. Injury and/or near-miss investigations should look beyond worker behavior to identify systemic contributions to the injury or near miss.

Hazard assessments should not be used for disciplinary purposes or to deflect liability: hazard assessments are the responsibility of the employer, not the worker.

Checklists for overcoming barriers to participation

Overcoming barriers to participation is not easy. But it's necessary. And it's easier if you try to do it with others and/or through your union or other allies.

The charts on the next few pages provide some suggestions about how to deal with some key worker participation barriers.

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
Employer's overall approach to health and safety	• (Lack of) openness to including workers and their representatives • Supervisors pick their "favourites" to do hazard assessments and include no one else • No, or ineffective, health and safety programme or management system • No, or little, management involvement in or commitment to OHS	• refer to Part 2 of the Code, contact Alberta OHS (can be anonymous) • research effective safety program systems like SOBANE	• if unionized, check your collective bargaining agreement • if unionized, contact union	• as a minimum, comply with the law, including participation set out in Part 2 of the Code

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
Precarious work (temporary, agency, migrant, part-time, self-employed)	• Limited benefits and rights • Fear of losing job/contract that leads to not speaking up • More injuries and illnesses (studies show)	• Know your rights; get information about them • Find others to talk with	• Share information about rights • Try to report hazards and injuries/illnesses in groups • Work together	• Apply workers' rights to all employees, regardless of status

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
No training in hazard assessments	• No training or information, including about all types of hazards	• Use the hazard categories hand-out • Ask how the law defines hazard • Ask for training	• Use the hazard categories hand-out • Use the legal definition of hazard • Negotiate training, preferably by union	• Use the hazard categories hand-out • Include information about all hazard types in training and materials used in assessments • Train workers • Evaluate training
	• No training about how to look for hazards	• Talk with others about how to look for hazards • Review hazard categories and SOBANE style inspection hand-outs • Fill out own body map and consider what causes the effects	• Ask about hazards they know about • Use body map as starting point to talk about what causes the effects • Use hazard categories and SOBANE style inspection hand-outs • Negotiate training about how to look for hazards	• Train workers about how to look for hazards • Use hand-outs about hazard categories and inspections for each category • Evaluate training
	• No training about how to develop solutions for hazards and principles of fixing hazards	• Use the prevention triangle • Ask "How does it get rid of the hazard?" when people talk about solutions • Talk to co-workers about what would be the best fix	• Discuss what would be the best fix, using prevention triangle • Use the law about eliminating hazards first • Ask questions about use of PPE, its limitations, maintenance and cleaning	• Incorporate prevention principles in health and safety programme or management system • Train workers about the principles of prevention • Encourage creative short- and long-term solutions that will get rid of the hazard at least in the long-run • Evaluate training

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
	• Behaviour-based programmes that focus on how people behave, not the hazards • Similar programmes that focus on attitudes (called "safety culture" or "safety climate")	• Document the hazards and report them	• Document hazards and report themt	• Develop a find and fix it programme with workers and their representatives, one that emphasises hazard assessments and solutions that truly prevent hazards
Myths about careless or "accident prone" workers	• Workers are disciplined for reporting hazards, injuries and/or illnesses ("zero tolerance" policy)	• File a grievance • Complain to Occupational Health and Safety • Talk to the union about having a collective response	• Organise a meeting to develop a group response and support those who are disciplined • Document hazards and their effects (what is happening in the workplace and what could happen down the road)	• Develop a programme that sets up reporting systems and disciplines managers who misuse them • Provide rewards for reporting hazards, injuries and illnesses, and perhaps innovative fixes
	• Workers are blamed for injuries, being "careless" without looking for root causes	• Push back about any written blame • Talk with other workers about how to respond	• Talk together about what to do • Get union involved, hold meeting about prevention approaches	
	• Injury reports are designed to blame workers, avoid root cause analysis	• Refuse to accept blame. Point to hazards and underlying causes • Talk with union and co-workers about your experience and how to get better reports	• Start using an incident report like the one in the tool kit	• Start using an incident report form like the one in the tool kit

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
Employer definition of hazard	• Using "serious" but for whom? • Excluding types of hazards, especially work organisation or things that cause stress	• Speak up when something affects you, call it serious • Use SOBANE-type forms • Ask questions about different types of hazards • Ensure your identification of hazards are recorded • Point to the definition of "hazard" in the law	• Talk about why a hazard is important to you • Use the legal definition of "hazard" • Use SOBANE-type forms • Encourage others to name all types of hazards, including ones that cause stress • Request training about identifying all hazard types	• Take workers' reports of hazards seriously • Have a good hazard reporting system • State that all hazards must be assessed because it is a serious issue • Use forms like the SOBANE type ones • Include hazard definition in health and safety programme • Train supervisors and employees about hazard categories and how to identify them

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
Gender	• Reports of hazards and their effects are dismissed or not taken seriously when they come from women Women's responsibilities outside work are not recognised	• Speak up for women	• Work with others • Union can file grievance or human rights complaint • Union negotiates flexible work schedules, life-work balance arrangements	• Train supervisors and managers about sexism and how to deal respectfully with women • Life-work balance agreements • Flexible arrangements

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
Fear of speaking up	• Workers are scared to say anything or report hazards and/or injuries/ illnesses, fearing they will lose their jobs or be disciplined • Workers are not given time to do hazard assessments and their regular work, and fear the consequences of saying so, and therefore they will not participate	• Learn your rights	• Work together to report hazards and/or injuries/ illnesses • Have union rep speak on your behalf • Negotiate time to participate	• Reward those who report hazards • Train workers about reporting and doing hazard assessments • Ensure hazard assessment time is built into work time • Policies that make this clear • Support supervisors giving workers time to participate • Encourage reporting

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
Discrimination and harassment	• Reports of hazards and their effects are dismissed when they come from people of colour, immigrants, and/or those whose first language is not English • Aboriginal workers' reluctance to speak up (because of the long-term effects of residential schools and other racism) is not recognised	• Back up and/or speak up for others who are not taken seriously or are harassed or discriminated against • Ask for help from others in the workplace or outside it • Speak up for Aboriginal workers • Ask union to help	• Refuse to accept discrimination and harassment • Union can file grievances and/or human rights complaints • Work with union to develop ways that make it easier for Aboriginal workers to participate	• Train supervisors and managers about what is discriminatory and harassment • Provide inter-cultural and/or English as an additional language (EAL) training • Work with union to develop ways that make it easier for Aboriginal workers to participate

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
Employer created silence	• Workers believe speaking up will make no difference, they will not be heard or taken seriously	• Speak up once, based on something that is really important to you • Talk with others about how they feel and what they want to say • Ask for help/support to report a hazard	• Talk with others about how to do this, agreeing on more collective/group approach • Have union rep speak on your behalf	• Pay attention to workers' reports • Train supervisors about how to encourage worker reports • Reward those who speak up • Encourage workers to speak up and show they are heard
	• Supervisors/managers bully or yell at workers	• Talk to others about what it feels like when you are bullied or yelled at, asking about their experiences • Talk to your union	• Get stories that make clear the patterns • Get union involved to file grievances and push for changes	• Train supervisors and managers about managing (the skills) • Make clear to all employees that bullying and yelling is not acceptable • Comprehensive violence prevention programme with training, procedures for reporting, support • Respond to grievances quickly and respectfully • Discipline supervisors or managers who bully or yell at workers • Train supervisors and managers on managing, as well as workers' rights

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
Employer created silence (cont'd.)	• Supervisors/managers ignore workers' reports or make clear they are not interested in what workers think		• Figure out how to use the law about workers being "involved" in hazard assessments	• Set up reporting systems • Support supervisors who bring forward reports of hazards

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
Organisation size	• Small organisations may lack resources to deal with proper hazard assessments	• Ask to be trained and involved in hazard assessments	• Talk with others about finding and fixing hazards	• Use workers' skills and knowledge • Use sectoral and/or union resources to train employees and get information about hazards and solutions • Find other outside resources
	• Small organizations focus just on the hazards related to their speciality services	• Use resources that explain hazard categories	• Use resources that explain hazard categories • Get help from union and/or others you know who do hazard assessments	
	• Workers fear losing jobs if they speak up or report hazards/injuries/ illnesses	• Talk to others, encouraging them to report and speak up	• Work with others to speak up together and report hazards and injuries/illnesses	• Policy and programme clearly says there will be no retaliation for reporting hazards or injuries/ illnesses • Reward those who report injuries/illnesses and hazards • Fix hazards that are found or reported

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
Pace of work	• Speed-ups • Line speed • Forced overtime	• Take your breaks • Try to avoid working overtime • • File a grievance	• Organise people to take all their breaks • Refuse as a group • File a grievance	• Avoid speed-ups • Add staff as needed • Determine how line speed affects workers (e.g., ergonomic hazards) • No forced overtime • Adequate staffing and schedules to deal with regular activities and disruptions • Agree to have health and safety record as a condition for getting contracts

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
Payment schemes	• Bonus schemes, piece-rate, relying on tips • Penalties for late completion of projects and incentives for early finishes		• Work with co-workers rather than against them • Union should negotiate regular pay instead of bonus or piece rate	• Get rid of any payment scheme that prioritizes productivity over health and safety • Negotiate realistic deadlines, pointing out consequences of false promises

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
Environmental limitations (conditions of work)	• Location away from regular workplace • Climate • Time to travel to work/site	• Organise car pooling	• Get union support for car pooling	

What makes it hard to participate?	Examples of what makes it hard to participate	What can you do on your own?	What can you do with others?	What does the employer need to do?
	• Sub-contracting and out-sourcing so there are temporary/agency workers on site			
	• Multiple worksites			
	• Loss of in-house health and safety knowledge with contracting out/temp agencies	• Talk with contract/agency workers about health and safety, trying to figure out how to have their back	• Talk with union co-workers about how to spread info around	• Reduce contracting out
			• Union fights contracting out or negotiate how health and safety rules are taught and applied	• Comprehensive health and safety training
	• Not clear who's responsible for what (especially with multiple employers at a site)	• Ask who's responsible for health and safety, to whom you report hazards and injuries	• Talk with others about reporting, sort out through union	• Have clear lines of responsibility for health and safety that are explained to everyone at the workplace/site
How the work is organised				• Ensure supervisors are trained about health and safety and are supported in carrying them out
				• Make it a condition of contracts that health and safety responsibilities are spelled out and clearly explained to all employees
	• Large numbers of workers may mean less opportunity for all to participate	• Ask to be included	• Sort out processes to include as many workers as possible, via the union	
	• Hours of work, shiftwork	• Get to know those on your shift		
	• "Lean production" which takes out breaks, tries to get rid of "waste" and uses just-in-time delivery systems	• Take your breaks	• Fight via the union	• Evaluate real effectiveness of "lean" methods, especially effects on health and safety hazards

Endnotes

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4.1 How to Improve Worker Participation

Best Practice Guidelines:

Effective Worker Participation in Hazard Assessments
Alberta Workers' Health Centre, December 2015

About the Alberta Workers' Health Centre:
The Alberta Workers' Health Centre is a registered charitable, non-profit organization that supports all workers, unionized and non-unionized, who need assistance to help make their workplaces healthier and safer. Since 1983 it has done this through programs of education and training; research and information; assessment and support for workers across Alberta.

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This module will continue to explore barriers to worker participation. It will primarily focus on training and the limits of training.

The temptation in hazard elimination and control is to focus down on improving outcomes by improving worker training.

This has been the focus in occupations and industries where the consequences of failing to deal with specific hazards can be very high-cost in terms of human health, loss of life and public relations.

Crew Resource Management (CRM) training is the darling of the airline industry and has moved into other sectors such as rail transportation and health care. CRM training is perhaps the most extreme example of the failed promises of training by itself in improving workplace health and safety. The failings of CRM training shows us again that we need to eliminate the hazard instead of trying to manage the hazard by trying to adapt our human behavior to that hazard.

Lessons from the airlines and health care

There are strengths and limits of CRM or other behavior-based strategies that focus on making sure the 'culture of safety' and the 'climate of safety' are reinforced and practiced.

Evaluations of the strategy do report some success and offer insights into some of the barriers to worker participation as well as specific training practices that can lead to a reduction in those barriers.

Limits to Training

Results: Findings indicate that CRM training generally produced positive reactions from trainees; however, the impact of training on learning and behavioral changes suggest mixed results across and within domains. Furthermore, and as was found by Salas, Burke, et al. in 2001, we cannot ascertain whether CRM has had an impact on the organization's bottom line (i.e., safety). (Source: Eduardo Salas, Katherine A. Wilson, and C. Shawn Burke, University of Central Florida, Orlando, Florida, and Dennis C. Wightman, Army Research Institute, Fort Rucker, Alabama, 2006

From California Guide References/Resources:
Labor Occupational Health Program, University of California, Berkeley

Little evidence of success where it counts – improved safety

Unfortunately, there is little evidence that these intensive training practices actually result in improved safety despite decades of implementation in the airline and aerospace industries, including the US military, and increasing implementation in another 'high-consequence' sector – health care.

Should we not bother with training?

The literature on worker training doesn't separate out the difference between training workers to manage crisis situations, such as when a hazard presents itself, and training workers to identify potential hazards.

It can be suggested that any training that encourages active, positive and informed participation in the workplace by workers will assist in the identification of potential hazards.

A System and Culture of Employee Involvement in Identifying Hazards and Solutions for Hazard Control

Employees have extensive experience with the hazards in their workplace and can help determine which hazards are of greatest concern as well as suggest ideas for addressing these hazards.

Employees are more likely to act safely when they have contributed to identifying and addressing the hazards in their workplace.

To the extent that those hazards are then eliminated or controlled through more effective and reliable means than worker behavior, programs which train workers, supervisors and others to recognize and reduce barriers to worker participation should be encouraged.

Barriers to worker willingness to participate

There is a difference between having policies in place and having an effective program.

A 'roadmap' of policy and flow diagrams illustrating how the hazard assessment process should take place and a set of forms indicating who was there, the hazards that they identified and the measures for eliminating or controlling those

hazards is not the same as the affected workers understanding the hazards and addressing them.

The First Step: Do the hazard assessment
Second Step: Remove or reduce the barriers to worker participation

Our research identified several barriers to worker participation in the processes of hazard identification, elimination and control (Barnetson). These are related to:

- Fear-based silence
- Employer created silence
- Pace of work and compensation schemes
- Precarious work and worker vulnerability
- Discrimination and harassment (particularly gender)

The previous module covered some of these barriers. Here we will focus on turning fear-based and employer-created silence into constructive and positive participation.

Visible Management Commitment to Health and Safety

Effective health and safety programs are active, living programs with an ongoing involvement by both management and employees. Research shows that effective programs include the following components:
- Ensuring that all levels of management lead by example.
- Actively encouraging employees to report health and safety problems or concerns.
- Actively soliciting employee input on how to address hazards.
- Following up on concerns that are reported.
- Following up when employees do not follow safety rules and procedures to find out why and to provide additional training.
- Providing a fair system to ensure safety rules are followed.

From California Guide References/Resources: Labor Occupational Health Program, University of California, Berkeley

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Fear-based silence and employer – created silence

 According to our research, silence is a component of three of the four main strategies workers use when faced with unsafe work. These strategies are:

- leaving the workplace
- expressing their concern (voice)
- waiting for something to change (patience)
- ignoring the hazard (neglect)

> "Although some empirical studies show positive outcome after team training, there is little to suggest that these programs and processes actually improve patient safety and outcome."
>
> Eswar Sundar, MD, Sugantha Sundar, MD, John Pawlowski, MD, PhD, Richard Blum, MD, David Feinstein, MD, Stephen Pratt, MD

Of these four, only the action of expressing concern is a useful strategy for a worker facing unsafe work. This is what we want to encourage, and we want to encourage this voice to be constructive and positive.

We want the strategies of waiting, ignoring or leaving to be turned into a strategy of constructive and positive participation.

Best Practices

In training

Train supervisors and workers to recognize interpersonal barriers to worker participation and engagement. You don't have to do extensive team building exercises. You just need to teach and model behavior that encourages respectful listening, questioning and problem solving.

At the workplace, as part of hazard assessment process

Best Practice Example: Hazard assessments should not be used for disciplinary purposes or deflect liability: hazard assessments are the responsibility of the employer, not the worker.

Best Practice Example: Actions speak louder than words.

- If you are in a position of authority, acting on concerns raised is the best way to encourage more discussion and engagement in the hazard assessment process.

- Encourage discussion and divergence of opinion. New workers have fresh eyes on a workplace. They may identify hazards and solutions that had not been previously considered.

- Expect some disagreement from co-workers but encourage an inclusive, supportive, non-aggressive approach to problem solving.

- The term 'bullying' is one that we hear too frequently when we talk with workers about their workplaces. The term can be a 'shorthand' for a perceived lack of respect in the workplace.

- The features of bullying may be present in our workplaces, even if we don't want to label it as such.

> "So what can be said about the findings from the medical community? Overall, it appears that there is only partial support for training's effectiveness. Whereas reactions to training were positive, *transfer of the learned behaviors to the job were somewhat less concrete.*" (emphasis added)

Best Practice to combat employer created silence: When hazards are identified, employers must both take action and communicate the results of that action. These behaviors are required to prevent worker cynicism and withdrawal.

Seek new Solutions

- We often get stuck in ways that are no longer the best option. A previously identified hazard may have led to the best or most 'reasonably practical' solution at that moment in time. Technological or organizational change may have made other, better, solutions now more practical than before.

- Solutions which address a hazard in one area or work process may help you to find solutions for other, larger problems or problems in other areas or work processes.

> "Culturally, we struggle. If I were your co-worker and I saw you doing something stupid – it is sort of like an old boys club – if I was you doing something stupid I'd say 'What are you doing?' I think that if a new worker said that, the crew would be saying 'What are you doing? Shut up.' A lot of pressure falls on people who raise issues."
>
> **(interview 13) p 16 Barnetson**

Several themes emerged that were supported in the report-back session:

1. There is a strong connection between worker safety and patient safety. The participants of the focus groups expressed a deep commitment to providing safe patient care, and recognized that elements of the environment that jeopardize their safety also put patients at risk.

2. Communication across and within departments and disciplines often leaves much to be desired. Specifically, the participants mentioned the need for respectful two-way communication that includes a feedback loop. They acknowledged that the vast majority of hospital personnel need to develop better communication skills, and that care would be enhanced if better communication systems were in place.

3. Training is a critical element to improve worker and patient safety. Participants cited the need for "skills training," particularly for new hires and for managers, as well as the need for opportunities to learn to work more effectively in groups and teams.

4. Feeling valued and respected was another common theme. The participants requested that their contributions be acknowledged, and that they have the opportunity to do the work for which they have been trained. They wish to be seen as "more than just an FTE."

When asked to identify low-cost suggestions, workers provided the following:

1. Be respectful: Respect each other; common courtesy includes greeting people; respect belongings (theft in hospital); do what you are supposed to do (maintain privacy, wash hands, etc.).

2. Get everybody to the table: Workers have information, and also need information; problem solving requires everyone to participate—all involved departments, workers, administration, supervisors, doctors, and nurses.

Exploring Front-Line Hospital Workers' Contributions To Patient And Worker Safety
Rosemary Kelly Sokas, Patricia Cloonan, Barbara I. Braun

Best Practice Tips and Tools for Engaging and Learning

We have adapted some best practices from the world of adult education in health and safety and community social justice to the workplace.

They should be seen as tips to follow for making the best of a situation where you want workers to be as engaged and as interested as they can be.

Best Practices in Learning (adapted from a variety of public domain sources)

Learn by Doing
People retain knowledge and skills if they have immediate and repeated opportunities to practice what is learned.

Informal Atmosphere
Learning increases in an atmosphere that is the least reminiscent of any formal schooling.

Variety of Methods
Research has demonstrated that learning proceeds most quickly when information reaches the learner through more than one sensory channel. We use methods directed at the visual, auditory and kinesthetic channels.

Guidance Not Grades
Provide honest individualized feedback, not grades.

No Tricks, Traps or Red Herrings
'Cleverly' tricking participants to highlight their lack of knowledge hinders and may prevent learning. Participants come to resent the instructor and become suspicious of participating in the learning process.

Learning by Layering
Layer the information – basic information first, followed by exercises and experiences to use and practice applying the information. Set cognitive hooks in the mind so that you can identify issues, recognize critical information in life-like situations. Memorization and regurgitation are not effective for retention of key information and practices in real-life situations.

Learning How to Learn
A key skill is learning how to improve your ability to learn. There are a variety of learning styles. Teach people to become aware of their own learning style. Use that knowledge to improve learning ability.

The Principles of Adult Education: A Checklist

(Material adapted from Teaching About Job Hazards, Nina Wallerstein and Harriet Rubenstein, American Public Health Association, 1993.)

General Principles

NOTE: For all of the following principles please consider the barriers to participation faced by vulnerable workers as examined in all aspects of these Guidelines. Addressing those barriers should be your first consideration. Keeping those barriers in mind, there may be ways of increasing the effectiveness of your training.

The best training programs take advantage of the following characteristics of adult learners:

- Adults are self-motivated.
- Adults expect to gain information that has immediate application to their lives.
- Adults learn best when they are actively engaged.
- Adult learning activities are most effective when they are designed to allow students to develop both technical knowledge and general skills.
- Adults learn best when they have time to interact, not only with the instructor but also with each other.
- Adults learn best when asked to share each other's personal experiences at work and elsewhere.

Assess the Learning Environment and Needs

1. Does the learning environment encourage active participation?
   - How are the chairs, tables, and other learning stations arranged in the classroom?
   - How does this arrangement encourage or inhibit participation and interaction?
   - Can the arrangement be changed easily to allow different kinds of interaction?
   - Is the climate of the classroom sufficiently comfortable to allow learning?
   - Is the environment accessible to a diversity of learners?

2. Does the social environment or atmosphere in the learning environment encourage people to participate?
   - Are warm-up activities or "ice breakers" needed to put people at ease?
   - Do trainers allow participants to say things in their own words, or do they translate what is said into other words or jargon?
   - Are participants encouraged to listen carefully to each other?
   - Are they encouraged to respect different points of view?
   - Are they encouraged to use humor and is the humor appropriate?

3. People learn in different ways. Do the learning activities in the training program provide participants with an opportunity to do each of the following?

- Listen
- Look at visuals
- Ask questions
- Read
- Write
- Practice with equipment (if applicable)
- Discuss critical issues
- Identify problems
- Plan actions
- Try out strategies in participatory ways

4. Does the program effectively promote participatory learning activities?

- Is enough time allotted for participant interaction?
- Have the instructors developed workable and effective interactive activities?
- Does the physical environment encourage interaction?
- Does the atmosphere in the classroom encourage interaction?
- Are the learning activities sensitive to cultural differences among the participants?
- Does the training engage participants in critical thinking and analysis about the subject being covered?

5. How effectively do the lectures in the program encourage participation?

- Are they combined with a participatory exercise?
- Are they brief?
- Are they well organized?
- Are audio-visual aids incorporated in the lecture?
- Does the lecturer rely too heavily on his or her notes?
- Was there enough time for questions and comments from others?
- Does the lecturer promote challenging questions about the content being delivered?

6. How effective are the participatory activities used in the program?

- Are the purposes of the activities clearly specified?
- Are the tasks that people are expected to complete clearly described?
- Are participants given enough information to complete the expected tasks?
- Is the information accompanying the activity clearly presented and easily understood?
- Is the information presented relevant to the task?
- Are participants given enough time to perform the expected tasks?
- Are participants given enough time to share what they have learned from the tasks with each other?

- Are the participants given a clear summary of the main points they were expected to learn in the activity?

7. How effectively do the case studies and role-playing activities in the program encourage participation?

- Is the situation being discussed familiar to the participants?
- Does the situation evoke strong feelings in the participants?
- Does the situation lead to an in-depth analysis of the problem?
- Does the situation encourage people to consider a range of possible strategies for dealing with the problem?
- Are people provided with enough information to participate in the activity in a meaningful way?

8. Are people provided with too much information?

9. How effectively does the organization of the program encourage participation?

- Are discussion groups small enough to ensure participation? (No more than 4 to 6 people.)
- Is the ratio of discussion groups to instructors small enough? (A single instructor cannot effectively supervise more than three or four groups).
- Is there enough room to enable each group to talk amongst itself with out disruption?
- Does each group have its own moderator and notetaker?
- Does the responsibility for leading and recording the discussion rotate among those willing to do the job?
- Are the groups supplied with guidelines about how to lead and report their discussions?
- Do the activities make allowances for anyone in the group who may have problems reading and writing?

10. Is the program sensitive to literacy differences?

- Do the trainers check privately with anyone having reading and writing difficulties?
- Is reading aloud or writing in front of the group only voluntary and never mandatory?
- Are all instructions and other required material read aloud?
- Do the materials incorporate enough visual aids and props?
- Do the trainers repeat out loud anything they write on a board or flip chart?
- Are evaluations conducted to assure that the trainees comprehend the training material?

11. Do audio-visual aids used by the training program encourage participation?

- Do the instructors write an on-going record of what is being discussed on the board or flip charts?
- Are participants encouraged to challenge the record if they consider it inaccurate?
- Are approaches utilizing integrated instructional technologies effective in eliciting participation?

Consider who you are talking with - Specific populations to consider

For all of the following groups of workers, consider the barriers to participation faced by vulnerable workers as examined in all aspects of these Guidelines. Keeping those in mind there may be ways of increasing the effectiveness of your training. Training provides an opportunity for feedback to inform future training and improve participation from a diversity of workers.

1. Non-English speaking. A person's verbal ability often tends to exceed his or her literacy levels. For best results, trainers should communicate in the native language of the participants and should provide materials in the participants' primary language. If the trainer does not speak the trainees' primary language, interpreters may be used. However, be sure to use a translator with trusted credentials. It is not advisable to use one worker as a translator for the others. Employ approaches similar to those used for low-literacy audiences.

2. Limited English proficiency. Materials used with those who have limited English proficiency should be easy to understand or written in languages other than English. Favor those materials or curricula that encourage interaction, student input, and critical thinking. (Szudy and Gonzalez Arroyo). Consider using pictograms, visuals, and demonstrations or other methods that are non-verbal to convey information. Employ approaches similar to those used for low-literacy audiences.

3. Contingent workers, day laborers and temporary workers. Employ approaches similar to those used for low-literacy or non-English speaking audiences. This will ensure maximum communication of the training content with minimum language interference. Favor visual and verbal methods over written text.

4. Young workers. Workers who are high school or college age and recent additions to the workforce require additional guidance. They may be fully able to intellectually comprehend training information, but they lack the experience that time in the workforce provides. Additional emphasis should be placed on safety and health precautions, experiential exercises and demonstrations that exhibit the inherent danger that lurks in the workplace.

5.0 Index of Resources

Best Practice Guidelines:
Effective Worker Participation in Hazard Assessments
Alberta Workers' Health Centre, December 2015

About the Alberta Workers' Health Centre:
The Alberta Workers' Health Centre is a registered charitable, non-profit organization that supports all workers, unionized and non-unionized, who need assistance to help make their workplaces healthier and safer. Since 1983 it has done this through programs of education and training; research and information; assessment and support for workers across Alberta.

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The following links lead you to two types of documents: Resource Documents and Research Documents. It is our intention to add to these lists in the coming years.

If you are reading this as a hard copy, you can access these resources through our website at: www.workershealthcentre.ca

Resource Documents give you additional hands-on tools for use in making your workplaces safer and healthier by increasing worker participation.

Research Documents are documents that may not be cited in the Best Practice Guidelines but were used by us in the research that led to the Guidelines. Our primary research documents are contained in Module 1.0

Resource Documents

Resource Documents give you additional hands-on tools for use in making your workplaces safer and healthier by increasing worker participation.

New Eyes

This is a comprehensive set of tools intended for all new or established workplace safety and health committees and worker safety and health representatives in Manitoba. Specific tools are included as separate pdfs.

New Eyes A Using this manual.pdf
New Eyes F How do you find symptoms and hazards.pdf
New Eyes G What fixes hazards.pdf
New Eyes - Prevention triangle.pdf
New Eyes SH Tool 1 Five steps to healthy & safe workplace.pdf
New Eyes SH Tool 2 Hazards - categories.pdf
New Eyes SH Tool 3 Inspections - doing them.pdf

New Eyes SH Tool 4 Inspecting all hazards with SOBANE screening.pdf
New Eyes SH Tool 5 Inspections - What the HEC.pdf
New Eyes SH Tool 6 Ergonomic hazards - categories.pdf
New Eyes SH Tool 8A Ergonomic hazard myths - computer workstations.pdf
New Eyes SH Tool 8B Ergonomic hazard myths - women.pdf
New Eyes SH Tool 9 Ergonomic hazards - Looking for symptoms.pdf
New Eyes SH Tool 10 Ergonomic hazards - Specifics checklist, SOBANE approach.pdf
New Eyes SH Tool 11 Incident investigation report form.pdf

Worker Representation and Participation Guide

A comprehensive guide from Australia which provides information on the representation and participation of workers in health and safety matters at the workplace, as well as guidance on resolving health and safety issues.

Hazards Related to Inequity

A Hazard Assessment Worksheet that helps you to identify possible hazards that are related to workplace inequality.

Multilingual-Guide-6th-edition

A Multilingual Guide to Worker Training Materials on the Web prepared by the Labor Occupational Health Program Center for Occupational and Environmental Health University of California at Berkeley.

Selected Resources: Preventing and reducing the use of toxic chemicals at work

A great resource, with links. Prepared for the National Worker Safety and Health Summit by Dorothy Wigmore with help from Eileen Senn, Mike Wilson, Trying ChemHAT on, and others; Version 3: November, 2012.

Safety and Health Management Systems eTool | Module 4/ Creating Change - Safety and Health Program Management/ Fact Sheets/ Worksite Analysis

This short bulletin/tool provides an insightful cautionary tale and reminds us that change analysis should be performed whenever a significant modification or addition is made to a process.

The inputs for prep work

A chart outlining the way of preparing for hazard assessments

Mental Injury Prevention Tools.

A guide and resource kit providing a BASIC understanding of workplace stress and how to deal with it.

Additional Research Documents

We have included a few documents that may not be cited in the Best Practice Guidelines but were used by us in the research that led to the Best Practice Guidelines.

O'Connor et al (2012) Navy CRM

This is an evaluation of the effectiveness of the crew resource management program in naval aviation.

Front-line worker engagement in HCAP health care programme 2013

This article illustrates and discusses the need to identify gaps and opportunities for integrating front-line hospital workers into safety efforts.

Front line health care workers improve patient worker OHS 2013

A follow-up to the above article, outlining health care workers' views of themselves as having an important role in health and safety.

OHSMs – When are they good for your health?

A 2011 report from the European Trade Union Institute that looks at Occupational Health and Safety Management Systems and their effectiveness in practice.

Jensen - Risk Assessment - A Regulatory Strategy for Stimulating Working Environment Activities 2001

This article analyzes the Danish approach to workplace assessment (WPA) following European requirements to establish legislation on occupational health and safety.

Do you have more resources for these Guidelines? Contact us at: participation@workershealthcentre.ca