

# Prevention Strategy consultation paper

December 2003



**YUKON WORKERS'  
COMPENSATION  
HEALTH AND  
SAFETY BOARD**

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## INTRODUCTION

This paper is the most comprehensive look at the YWCHSB's prevention strategies in over a decade.

The goal of this paper is to provide the board and its stakeholders with sound data and direction for future prevention activities, based on the best currently available information. The intention is to promote discussion in order that recommendations can be made. To reach its goal, this discussion paper draws upon the findings of experts, the experience of other jurisdictions, and research and survey data—including surveys done in the Yukon.

The last decade has been an interesting one. Compelling research has been done on the effectiveness of various prevention strategies. In addition, our ability to evaluate these strategies has become much more refined and accurate. Great strides have been made in understanding what processes and procedures are effective in managing prevention. Yet at the same time, nearly every jurisdiction in Canada has experienced a plateau in injury rates in the last 10 years. Many are also experiencing an increase in duration of time off work related to an injury; in spite of the information we have on the value and effectiveness of return to work programs for injured workers.

This phenomenon has led to a number of interesting responses. Workers' compensation boards across Canada are "renewing" their commitment to prevention. As the costs of compensation rise, there is a serious need to break through the plateau and make real progress in reducing injury rates and controlling duration. Boards are also recognizing that there is a need to base their prevention strategies on sound research and evaluation. In other words: they need to adopt strategies that work and they need to be able to show that they work.

The Institute For Work and Health recently published a paper titled *Preventing Injury, Illness and Disability at Work: What Works and How Do We Know?*

The paper puts forward four key themes for discussion.

1. There are multiple causes for current workplace injury, illness and disability. Therefore it makes sense that preventing these problems will require multiple solutions, operating in synergy.
2. An optimal effort to reduce workplace injury, illness and disability must build on the strengths of traditional primary and secondary prevention approaches, merging these to create a more effective strategy.

3. Before we agree on which prevention strategies work and which do not, we need a shared understanding of how effectiveness in OH&S interventions should be evaluated.
4. We must work towards building relationships between those who do research and those who use this knowledge, so we produce relevant research that is readily taken up and applied to improve occupational health and safety.

In Part 1, we look at some of the factors influencing the prevention environment. Research indicates that strategies that merge primary and secondary prevention will be more effective than those that work in solitude. For example: workplaces with effective return to work programs (secondary prevention) will also experience fewer injuries (primary prevention).

A summary of research is provided in Part 2. The principal findings reveal what may broadly influence industry groups and employers to change to a culture of prevention. It is a premise of this paper that strategies that are supported by relevant research should be preferred over strategies that are simply currently-accepted practices.

In Part 3 we review potential strategy areas. These are organised according to both the traditional and modern approaches of influencing behaviour of workplace parties and the culture in which they work. A premise of this paper is that sound evaluation is a necessary component of any working strategy. Evaluation is not a “nice to have” adjunct to a strategy; it is a strategy unto itself. Evaluation must be rigorous and relevant, actually measuring the effect we want a strategy to have.

In Part 4 we present some discussion topics. It is our challenge to find strategies that will work in concert to combat the many causes of workplace injury, illness and disability. A variety of tactics must be used for us to effectively change Yukon safety culture.

The board is not (nor should it be) responsible for all the strategies and the tactics in the prevention of workplace injuries. The internal responsibility system in each workplace is the key to day-to-day prevention. However, an external prevention system is gelling in the Yukon that includes partners. This approach is similar to what is happening in other jurisdictions in Canada.

The use of strategies is not homogeneous across client groups. For example, the achievement and maintenance of minimum standards of behaviour and the encouragement of ideal behaviours may use different strategies. The challenge will be to ensure that the right mix is used, that the workplace stakeholders are clear on the intent and that there are sufficient resources to implement and evaluate strategies and tactics properly.

### **Defining “Prevention”**

*Most occupational health and safety practitioners describe two fundamental approaches to prevention: before or after the onset of injury, illness or disability.*

- 1. Primary prevention aims to reduce the risk of injury or illness before the event occurs. This is generally accomplished by modifying factors known to increase risk by directly controlling a specific hazard or set of hazards. For example: strengthening the person’s resistance (against injury or illness) by increasing his/her skills and/or modifying the work environment.*
- 2. Secondary prevention occurs after injury or illness has already occurred and aims to reduce long-term disability as well as its personal, social and economic costs. Such interventions would include improving the quality of care that workers receive or introducing appropriate disability management strategies. The later includes the provision, at the workplace of suitably modified work to accommodate the worker until the disability improves, or vocational retraining if the disability is permanent and incompatible with the worker’s original job.*

**Preventing Injury, Illness and Disability at Work:  
What Works and How Do We Know?  
Institute for Work and Health**

## **The Case for Prevention**

Every Canadian workers' compensation board and ministry of labour has a workplace injury prevention program. In fact, each of these strategic plans state that prevention is the single most important function of the organization. Why is prevention valued so highly?

The case for workplace injury prevention is both moral and economic. As human beings, we are motivated to reduce human suffering, increase well-being and maximize human potential. As members of a free enterprise society, our businesses must be efficient, innovative and competitive. Prevention delivers in all these areas.

The case for prevention is so powerful because the moral and economic arguments do not compete with each other. They both underscore the value of preventing workplace injuries. In short: prevention is the right thing to do, and it makes business sense to do it.

As strong as the case for prevention might be, in a society full of competing messages, it is difficult to keep prevention on the top of every government, business and personal list of priorities. Many people do not yet fully comprehend that a safe worksite is also an efficient and economic one. Workers' compensation boards and ministries of labour have taken on the substantial task of convincing, supporting and compelling society to make prevention a top concern.

Because boards and ministries play a leadership role, the measure of their success is when each workplace—including every worker, supervisor and employer—makes prevention the number one priority. In order to accomplish this, boards and ministries must use a myriad of activities and programs that work in concert towards the ultimate goal of workplace injury prevention.

## **The Moral Case**

As human beings with moral character, we can agree that preventing injuries is good. Pain, suffering, loss of enjoyment of life, impacts on families and friends are all outcomes of workplace injuries and illnesses.

As a society we have come to value injury prevention more and more. A century ago, society accepted workplace injuries and illnesses as a necessary evil. This is no longer the case. In the modern world, the sympathies of government, courts and the public quickly go to the injured or ill especially if every precaution was not taken to protect the worker.

In the Yukon, 1000 workers are injured every year (2000-2002 annual reports). This amounts to about one in 13 Yukon workers being injured every year. These numbers are disconcerting since nearly every workplace injury is preventable.

It is possible for Yukon workplaces to have no injuries. A zero-injury strategy at a work place is not just a noble dream or unrealizable goal. There are workplaces that made achieving a zero-injury record a priority—and they reached their goal. They achieved this admirable end by using practical, proven strategies that any business can implement. Examples of Canadian companies that pursued and achieved zero-injury status are Syncrude Canada, Ontario Power Generation and Dupont. If large firms such as these can achieve zero-status, so can small companies who typically have more control over their workplace environment.

In the modern world, preventing workplace injuries is attainable and practical.

## **The Business Case**

Within industry groups there are organizations that operate more safely than their competitors. These organizations have learned that health and safety can be managed and that workplace injuries and illness can be prevented. Many of these businesses also have superior business results. They are more profitable, more innovative, lead the competition, and are more agile and more responsive to changes in their business.

A business that successfully manages health and safety has:

- Lower costs
- Improved employee relations and employee trust
- Improved reliability and productivity
- Improved protection from business interruption
- Increased public trust and improved public image
- Increased organizational capability.

Recent research in Ontario has allowed that province to attach a fairly accurate dollar figure on the average lost-time injury claim. This research shows that businesses pay by far the largest share of the costs associated with lost-time injury claims—much more than workers' compensation boards pay. These costs of a workplace injury come straight out of a business's profit margin.

Businesses improve their bottom line by becoming leaders in prevention.



## Prevention Must Become the First Priority

The importance of culture, leadership, risk evaluation and viable safety programs are not just theoretical constructs. The recently released investigation report of the Columbia Space Shuttle disaster pointed out that failure in these elements led to the deaths of seven astronauts and, if these systemic flaws are not resolved, it will lead to another accident.

What can happen in NASA with extensive experience and expertise in their area can happen to any employer. Leadership and culture matter. Risk assessment and safety programs all matter if there are to be zero defects, zero incidents and zero injuries or fatalities.

Even though NASA was under financial strain, the ultimate contract that every employer has with its employees is that no one needs to be injured or killed as a result of doing their job.

*"The destruction of space shuttle Columbia and the death of seven astronauts were caused by a NASA culture driven by schedule, starved for funds and burdened with an eroded, insufficient safety program. In events leading up to the loss of Columbia NASA mission managers fell into the habit of accepting as normal some flaws in the shuttle system and tended to ignore or not recognize that these problems could foreshadow catastrophe.*

*This was an "echo" of some root causes of the Challenger accident. These repeating patterns mean that flawed practices embedded in NASA's organizational system continued for 20 years and made substantial contributions to both accidents. During Columbia's last mission, NASA managers missed opportunities to evaluate possible damage to the craft's heat shield from a strike on the left wing by flying foam insulation. Such insulation strikes had occurred on previous missions and the report said NASA managers had come to view them as an acceptable abnormality that posed no safety risk. This attitude also contributed to the lack of interest in getting spy satellite photos of Columbia, images that might have identified the extent of damage on the shuttle, and led to incorrect conclusions.*

*But most of all, there was ineffective leadership that failed to fulfil the implicit contract to do whatever is possible to ensure the safety of the crew. Management techniques in NASA discouraged dissenting views on safety issues and ultimately created "blind spots" about the risk to the space shuttle of the foam insulation impact. Throughout its history, the report found, "NASA has consistently struggled to achieve viable safety programs" but the agency effort "has fallen short of its mark."*

## A Short History of Prevention in the Yukon

The last major strategic review in injury prevention took place in 1990. A consultant was contracted by the Yukon Workers' Compensation Board and the Department of Justice to research and write a report that included discussion and ideas from a series of public consultations in Whitehorse and in the communities. The final report was called *Reducing Risk in the Workplace* (see Appendix). In it, 36 recommendations were made and almost all were implemented in the following five years. The four main areas of recommendations were health and safety program development, health and safety education, increased health and safety awareness, and a balance of regulatory enforcement and employer incentives.

Additional funding was given to occupational health and safety to implement the strategies in the report. The primary prevention activities of consultation, inspection, enforcement, training, education, and motivation were modified by the recommendations.

In 1992, administrative and legislative changes were made to combine occupational health and safety, and workers' compensation. Occupational Health and Safety moved over from the Department of Justice into the renamed Yukon Workers' Compensation Health and Safety Board.

Quite naturally, this integration of safety and worksite injury prevention into the board's mandate created a move towards a broader view of prevention. The definition of "prevention" began to expand to include primary prevention (preventing workplace injuries and illnesses) and secondary prevention (reducing further damage through disability management).

In 1995, there was a review of the incentive program called the "prevention merit rebate program". Subsequently the refunds in assessment premiums paid by employers, based partly on claims-cost experience and partly on the existence of a safety program, were discontinued.

In the 90s the concept of workplace wellness gained in recognition and general understanding. The board and its prevention activities were affected by society's increasing perception that health, diet, exercise, stress and quality of life all have an influence on a person's well being—whether at work, home or play. This holistic approach, where home and work and leisure are seen as overlapping spheres, also affected views of how to change safety attitudes and culture. Working in isolation on people's workplace habits is not as effective as working on a person's overall perception of risk and activity.

In 1998, the strategic plan *Ideal Workplaces* formulated the YWCHSB's vision of helping to create workplaces free of disabling conditions. This plan also put in place

the service team concept: which fully integrated the board's prevention services into a service team that every employer and worker could access. The service teams deliver primary and secondary prevention services directly to the worksite.

Young workers were, and still are, a growing focus of prevention activities. They offer the opportunity to substantially change the workplace culture of the future. Both the 1998 and 2003 strategic plans had deliverables in prevention, directly targeted at this group.

More recently, the strategic plan of 2003 delineated a core strategy of completing the prevention strategy within the 2003 calendar year. It also outlined a need to reconsider a merit rebate or incentive program for employers.

## Renewed Emphasis on Prevention

Injury statistics across Canada point to decreases in lost-time incidence rate over the past decade (1990-2000) with most of the reductions occurring prior to 1995. At present many Canadian jurisdictions are experiencing a plateau in injury rates.

Canadian workers' compensation boards, ministries of labour, employers, workers and employer safety associations are tackling the plateau phenomena. In the last two years, there has been a renewed focus on prevention activities all across Canada in an attempt to turn the plateau into a downhill slope. Mitigation of rising compensation costs is one key motivator of this renewed emphasis.

Similar to the rest of Canada, Yukon injury rates have remained static over the last decade. The Yukon's small size makes it unwise to rely heavily on statistics. However, other evidence supports this injury plateau's existence. Corroborating the statistical evidence is anecdotal evidence from the YWCHSB's safety officers who are finding the same poor safety behaviours, often from the same companies, repeatedly from workers, supervisors and employers.

In the Yukon, an average lost-time injury claim is significantly more costly than in other jurisdictions. The average time loss injury claim costs the YWCHSB \$34,000, as compared to Ontario where it is \$12,000.

These figures, substantial as they already are, only represent the direct costs to the workers' compensation board. Time loss injuries take a further financial toll on the worker, employer and society.

According to research done by the Ontario workers compensation board, the costs for a time loss injury—including the cost burden to the employer, employee, and society—greatly exceeds the cost the compensation board pays. In Ontario, a multiplier of 4.05 approximates the total costs of a claim. This means that while the Ontario board directly pays out \$12,000, another \$48,600 ( $\$12,000 \times 4.05$ ) in costs is borne by the employer, worker and society.

The Yukon has not researched what multiplier may be accurately used in the territory. However, it is safe to say that additional costs, over and above the \$35,000 already paid by the compensation board, are paid by the employer, worker and society each time there is a workplace injury.

There are powerful financial and moral reasons for wanting to examine and select strategies that will move the Yukon towards workplaces that are safe and where everyone thinks and acts safely all the time.

## PART 1. THE WORKPLACE INJURY PREVENTION ENVIRONMENT

### The Prevention System

Prevention activities, and the reactions and outcomes they produce, can be viewed as a system composed of internal and external parts.

#### External system

The external system is composed of the health care system, workers' compensation boards, ministries of labour, safety associations, and in some cases provincial research institutes. These organisations may:

- Set standards
- Communicate safety and prevention information
- Conduct social marketing
- Perform research and communicate findings
- Enforce regulations or legislation
- Conduct training and education
- Offer consultation services
- Provide financial incentives
- Offer safety system support
- Provide health care and disability management, and
- Facilitate return to work.

In the Yukon, the YWCHSB, the newly formed Construction Safety Association and the employer consultant hired through the Yukon Chamber of Commerce are the only external system organizations involved in primary prevention. Yukon Health and Social Services are also involved in secondary prevention. Essentially the YWCHSB provides all of the above activities except research and health care. The safety association and employer consultant are involved in training, education and consultation.

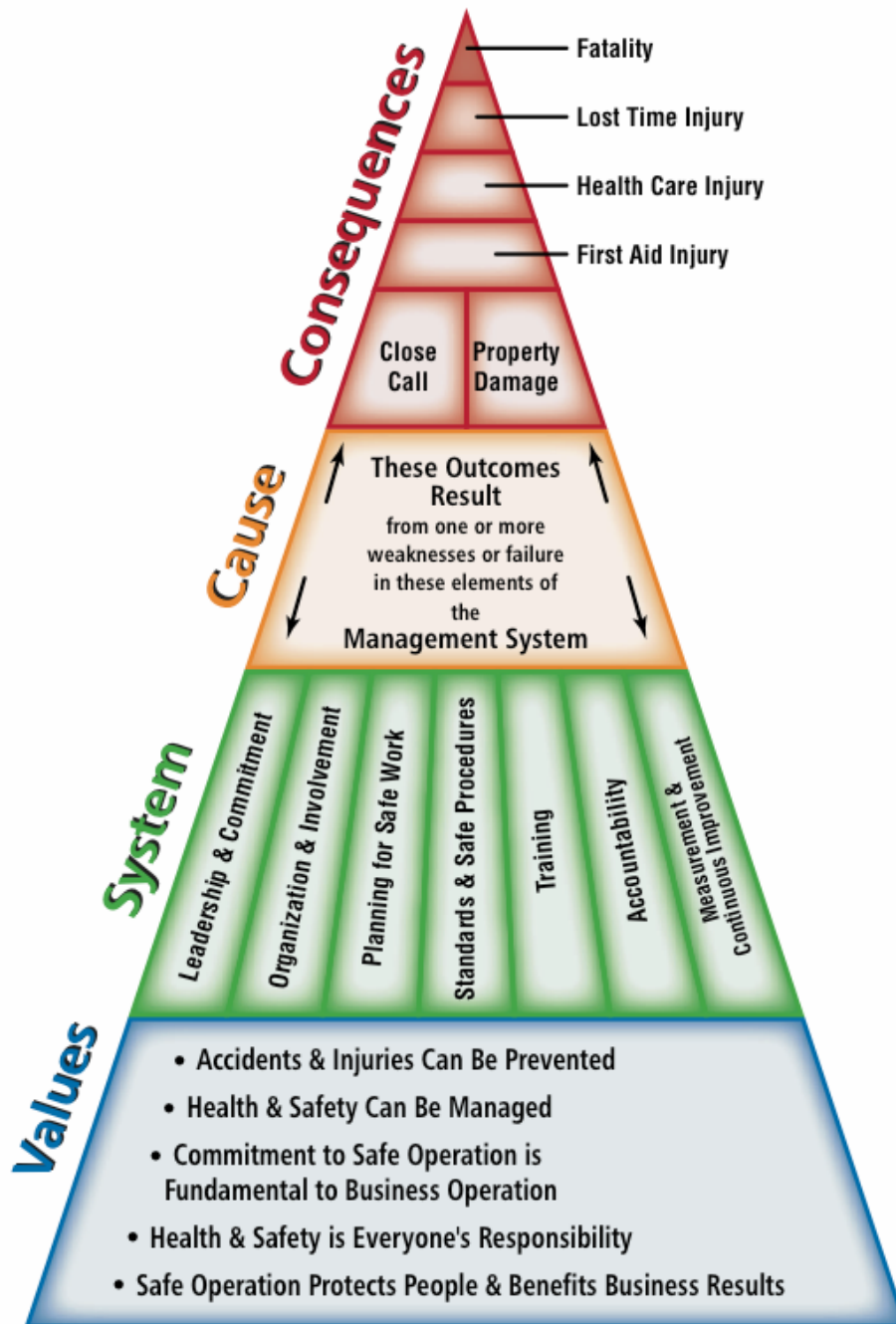
## **Internal system**

The “internal responsibility system” is established by a particular business, for that business, using internal resources. This system is set up by an employer to manage workplace safety and the behaviour of the business’ supervisors and workers. It includes observing occupational health and safety legislation and regulations, as well as the policies and procedures specific to that business.

Effective organizations also recognize the value of having secondary prevention activities such as an effective return-to-work program. In a healthy workplace with an effective internal system, primary and secondary prevention work in tandem to reduce workplace disability.

Occupational health and safety law has reflected the value of the internal responsibility system (IRS) for nearly 30 years; The IRS requirements in the laws across the country apply to all employers and even include self-employed, but vary according to the size of employer and to some extent the type of hazards that exist.

Ultimately the goal of external system activities is fostering businesses’ internal responsibility systems. The internal system can comprehensively manage the workplace behaviour, attitudes, beliefs and knowledge of supervisors and workers. When the internal system is not working, the outcomes are injuries, illnesses, diseases and fatalities, as can be seen in the diagram on the next page.



Safety Values and Consequences Pyramid<sup>1</sup>

<sup>1</sup> Source: *Business Results Through Health and Safety*

## Global Trends and Influences

### Risk Management

Broadly speaking, risk management is a concept and process that more and more corporations are using to effectively manage their business. The concept includes planning for and managing all of the risks threatening the organization's ability to reach its objectives—including but not limited to workplace incidents and injuries.

The internal responsibility system can be seen as a critical part of an organization's risk management processes.

As part of the requirement to manage safety, the United Kingdom Health and Safety Commission has a code of practice called the *Management of Health and Safety at Work*. In the code there is a requirement for an employer to carry out occupational health and safety risk assessments. Their main purpose is to determine whether planned or existing controls are adequate. The following excerpt is from the information appended to the code:

*Risk assessment is a key for pro-active occupational health and safety management and the systematic procedures to ensure their success.*

*A risk assessment based on a participative approach provides an opportunity for management and the workforce to agree that an organisation's occupational health and safety procedures:*

- a) are based on shared perceptions of hazards and risks;*
- b) are necessary and workable;*
- c) will succeed in preventing accidents.*

The document *Business Results Through Health and Safety*, written by the Ontario Workplace Insurance Safety Board and various safety associations, also has risk assessment as the first item in the high level checklist of the management system.

In the future, there will likely be a growing appreciation of the value of risk management to a business's viability and profitability. In particular if the organization is aware of the actual cost of an average time-loss injury to the business.

### Wellness

Healthy workers make a business more profitable. That's why more and more employers are focussing time and money on helping their employees become or stay well. Issues of low fitness levels, poor eating habits, abuse of drugs and



alcohol, control of chronic conditions and lack of sleep don't get left at the factory door. Workplace wellness committees are being established in many businesses to address problems of workers that were once considered personal matters. Workplace wellness committees assess the needs of employees and plan programs to address those needs.

Workers who are unfit are more likely to get injured and take longer to recover. That means more short and long term disability, workers' compensation and absenteeism. A small investment in wellness can save a great deal in illness.

Many employers have concentrated wellness efforts on physical fitness. However, psychosocial concerns are having a substantial impact on work attendance and disability costs. It seems these are the 'injuries' of the future and worthy of attention now.

Wellness efforts can and do work for employers and workers. As public awareness of the value of wellness activities increases, we are likely to see more emphasis in the workplace.

Wellness is an area where evaluation and research play a critical role. In the US, the Department of Health and Human Services put the cost of overweight and obese Americans at \$117 billion US in 2000. According to their research, being overweight resulted in 300,000 deaths per year. Data such as this has inspired US companies such as Sprint to redesign their workplaces so employees are forced to walk between locations. While others, such as Union Pacific Railroad, offer employees the latest prescription weight-loss drugs.

### **Partnerships and Alliances**

Research conducted by the Canadian Centre for Occupational Health and Safety, indicated that safety initiatives are more successful if delivered by people close to the individual—such as members of the community, local organisations, management, and fellow workers.

A growing number of partnerships and alliances with business, NGOs and government-run organizations have the potential for expanding the scope and influence of prevention activities. Some of these organizations are directly involved in prevention, while others are involved in prevention activities as a part of a more expanded mandate.

Directly involved in prevention are industry safety associations. Experience in other jurisdictions indicates that businesses are more likely to respect safety initiatives and guidelines recommended by their peers.

Other organizations in the community are involved in the promotion of social marketing cases (such as wellness, healthy youth, and injury prevention), which have overlapping fields of interest with workplace injury prevention. These would include injury prevention and control coalitions and the Safe Communities Foundation.

The Safe Communities Foundation administers the Passport Program for youth. This program includes a prevention and control test on young worker safety as well as certification of other achievements such as first aid. The Safe Communities Foundation is independent from board activity and has a broader mandate than workplace injury prevention. It is based on internationally recognized criteria.

Injury prevention and control coalitions are small groups of various organizations (Red Cross, hospitals, RCMP, MADD, etc.) working outside of government trying to spark interest in the epidemiological rationale for placing resources in prevention activities. Their research and public awareness campaigns can only help but raise the influence and understanding of the value of workplace injury prevention.

In addition, boards across the country work with the education departments delivering the young worker safety course in high schools and colleges. In the Yukon, the YWCHSB collaborates with Yukon College, developing occupational health and safety courses for the public. These partnerships allow boards to have a wider impact than their own resources would normally allow, and also to deliver their message in an environment that is more conducive to its delivery.

Partnerships and alliances allow the board's prevention mandate to expand its sphere of influence and influence a larger audience more effectively and efficiently.

### **Influence of the Media**

Media and the Internet can strongly influence individuals' and stakeholder groups' perceptions of disease and disease process. The media and quack web sites broadcast stories that surmise that certain diseases are work-related, even when there is little or no solid medical evidence that this is the case.

These perceptions then affect workers' compensation boards and their determinations on whether health problems are work-related. Even when such a claim is accepted on other work-related merits, the psychological component may still be difficult for a worker to overcome—especially when it appears to the claimant that there is a large cohort of individuals suffering similar problems elsewhere.

A good example is the recent attention media in Canada and the United States have given to moulds. When any sort of mould is found and workers have a concern

about possible health problems, the term “toxic mould” is used by media. This leads to unnecessary concern and in some cases a severe stress response. Working through these hyped problems has become a significant drain on limited employer and government prevention resources.

On the positive side, the media has also promoted young worker safety, educated the public on the importance of serious workplace accident investigations, and broadcast news-worthy safety stories such as the one on NASA’s safety-culture evaluation after the space shuttle disaster. They are also responsible for some excellent investigative journalism, including uncovering a case of a large multinational iron-casting company that has a terrible safety record.

In the future, media will continue to strongly influence prevention strategies. The prevention systems must implement strategies to manage this influence so that it remains as positive and factual as possible.

### **Physicians’ Expectations for Recovery**

Physicians play a crucial role in the recovery and timely return to work of workers.

Physicians who are not familiar with the healing effects of work and activity may be encouraging and supporting workers to take more time off work. As a result, they are actually hindering their patient’s recovery and their ability to cope with pain. This is a real problem with back sprains and strains, but can also apply to trauma injuries such as fractures.

The Canadian Medical Association’s policy statement on “The Physician’s Role in Helping Patients Return to Work after an Illness or Injury” states that

*Prolonged absence from one’s normal roles, including absence from the workplace, is detrimental to a person’s mental, physical and social well-being. Physicians should therefore encourage their patient’s return to function and work as soon as possible after an illness or injury, providing that return to work does not endanger the patient, his or her co-workers or society. A safe and timely return to work benefits the patient and his or her family by enhancing recovery and reducing disability.*

According to medical opinion, the vast majority of soft tissue injuries heal completely within six weeks. Searching for specific causes of most musculoskeletal injuries may actually make them worse. MRI’s and CT scans are sometimes unnecessary and at worst may delay a patient’s return to activity and therefore prolong their recovery.

## **Return to Work**

There is a growing appreciation for the importance of return to work programs in returning workers to well-being, reducing the costs of compensation and even in preventing injury incidence.

In terms of returning injured workers to health and wellbeing, return to work plays a crucial role. Research shows that the sooner a worker returns to work and productivity, the more likely he or she is to fully recover from their disability. Work is actually a healing influence in an injured worker's recovery. Therefore workers are encouraged to return to employment when they reach approximately 70% recovery from their injury.

Effective return to work programs may also reduce injuries in the first place. A comprehensive, hospital-based return to work program for nursing personnel, that decreased time lost from work after injury on targeted wards, also resulted in an unexpected 33% reduction in injury incidence.<sup>2</sup>

However, there is still a lot of convincing that needs to be done to encourage employers to accommodate an injured worker. Many employers do not understand they are benefiting the worker by enabling their return to employment. They may also find it difficult to find productive and meaningful work for an injured employee, especially if they operate a small, physically-demanding business.

Timely return to work has the potential to significantly reduce the costs of compensation and the costs to the business where the worker was injured. For this reason, many compensation boards are focussing on promoting return to work programs. Strategies may include providing businesses with economic incentives for employing returning workers, supporting businesses with return-to-work programs and producing communications materials that inform employers, workers and physicians of the benefits of return-to-work. Some jurisdictions are also considering legislation requiring employers to have return to work programs.

## **Gender**

When looking at the gender differences from a Canadian and North American perspective, sprains and strains, tendonitis, and other musculoskeletal disorders account for more than 52% of the injuries and illnesses suffered by female workers, as compared to 45% for male workers.

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<sup>2</sup> Source: *Preventing Injury, Illness and Disability at Work: What Works and How Do We Know?*

Stress at work is a growing problem for all workers, including women. In one survey 60% of employed women cited stress as their number one problem at work. Furthermore, levels of stress-related illness are nearly twice as high for women as for men.

Many job conditions contribute to stress among women. These include heavy workload demands; little control over work; role ambiguity and conflict; job insecurity; poor relationships with co-workers and supervisors; and work that is narrow, repetitive and monotonous. Other factors, such as sexual harassment, and work and family balance issues, may also be stressors for women in the workplace.

Job stress has been linked with cardiovascular disease, musculoskeletal disorders, depression, and burnout. The American agency, National Institute of Occupational Safety and Health, is conducting studies to identify workplace factors that are particularly stressful to women, and the potential prevention measures that may be taken to mitigate them. The impact of the stress on any ergonomic strategy that might be considered is particularly important.

## The Yukon Injury Prevention Environment

When assessing the Yukon injury prevention environment it is prudent to look at some of the historical indicators and trends “trailing indicators”. But it is wise, and more important to the success of any prevention strategy, to look at the “leading indicators.” These would be the types of industries and workforce the Yukon will have the injuries and illnesses associated with them, and people’s perception of safety values and practices.

To a large extent, the YWCHSB has to rely on trailing and leading-indicator research done by other authorities. This section will cover a few highlights, and will reference the key statistics in Canada and the United States. This section will also identify the stakeholders, partners and agencies that are and will continue to be involved in workplace injury prevention.

### Demographic Changes

The population of Canada is aging and the Yukon’s population is aging at a faster rate than anywhere else in the country. Between 1981 and 2001, the Yukon’s population over 65 grew by 126%. During the same period, the over 65 population in Canada only grew by 64%.<sup>3</sup>

The aging workforce will have a significant impact on workers’ compensation systems in every jurisdiction. Research indicates that as the workforce ages, it is likely that older workers will be involved in fewer workplace accidents.<sup>4</sup> They tend to be more experienced in their jobs and be more aware of safety procedures.

At the same time, normal aging effects will generate underlying conditions that will increase older workers’ susceptibility to some types of injuries and accidents.

The life expectancy of Canadians is also increasing.<sup>5</sup> This increase in longevity will allow for the recognition of more occupational disease.<sup>6</sup> The longer workers live, the more likely it is that latent occupational disease will be diagnosed and attributed to work causes.

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<sup>3</sup> Yukon Bureau of Statistics

<sup>4</sup> Bogyo, Terry; 1999; *Demographic Effects: Gauging the Impact of Population Changes on Workers’ Compensation in Canada*; page 18

<sup>5</sup> Statistics Canada

<sup>6</sup> Bogyo, Terry; 1999; *Demographic Effects: Gauging the Impact of Population Changes on Workers’ Compensation in Canada*; page 33

When they are injured, older workers take longer to get better. Older workers tend to be less fit than younger workers. Older bones and muscles recover more slowly. Therefore claim duration is very likely to increase.

Demographics indicate that fewer men are working after the age of 55.<sup>7</sup> This means that women are likely to become an even more significant portion of our claimant population. The affect of this gender shift is uncertain though women tend to work in less hazardous industries.

### **1. Yukon Industry Changes**

There is little doubt that the nature of industry has changed in the Yukon over the last few years. Mineral production has been the historic cornerstone of the goods producing sector in the Yukon. It is no longer significant.<sup>8</sup>

The goods producing industries include mining, forestry, agriculture, other primary industries and manufacturing.<sup>9</sup> These industries are associated with high risk of injury activities. The service sector includes construction, transportation, communications / utilities, trade, finance, insurance, real estate and community, business and personal services.<sup>10</sup> Though these service producing industries are not risk free, they are considered far safer than the goods producing sector. This does not necessarily translate into an injury free industry or low claims costs, however.

A trend away from goods producing industries and into service producing industries has occurred in British Columbia. The number of claims in British Columbia has fallen as the goods producing industries have declined.<sup>11</sup>

Like B.C., the Yukon economy has shifted away from goods producing industries and toward service producing industries, particularly in the last 5 years. Based on this change, the YWCHSB would predict a decrease in claims. The board is currently examining the Yukon circumstances.

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<sup>7</sup> Bogyo, Terry; 1999; *Demographic Effects: Gauging the Impact of Population Changes on Workers' Compensation in Canada*; page 12

<sup>8</sup> Yukon Bureau of Statistics

<sup>9</sup> Statistics Canada

<sup>10</sup> Statistics Canada

<sup>11</sup> Statistics Canada and BC Workers' Compensation Board Annual Reports

## Canadian / US Trends Compared to Yukon

To look at trends a time loss injury incidence rate is calculated. This can be used to compare between jurisdictions. The rate is based on the number of time loss injuries per 100 workers employed for a year (approximately 200,000 hours). Most jurisdictions start to count time loss on the first full day absent from work related to the injury, though there are some exceptions.

In the years 1990 to 1994 the Canadian average time loss injury incidence rate fell from 5 to 3.6. The Yukon average during this period was 3.18. In the period 1995-2000 the Yukon rate rose slightly to 3.69 while the national average continued to move down. In 2001 and 2002 the lost-time injury rate in the Yukon has been 3.08.

Similarly, US data indicate a decrease from a lost-time injury rate of 4, to a lost time injury rate of 3 over the same period. While the Yukon is not significantly above the national averages, there has been no change in this plateau over the last decade.

In the 20 years between 1978 and 1999, the Canadian workplace fatality rate slowed slightly from 7.4 per 100,000 workers to 6.3. The Yukon fatality rate is not usually calculated because Yukon does not have 100,000 workers. However, the Yukon has proportionally more high-risk activities than many other jurisdictions including truck transport on long, remote roads, mineral and oil exploration work in remote areas, and helicopter and fixed-wing activity.

Total Canadian time-loss injury claims decreased between 1978 and 1997; however the percentage of time-loss claims actually increased from 45% to 50% of total claims.

Total workers' compensation payouts in Canada roughly doubled in the last 20 years, increasing from \$1.7 billion to \$3.3 billion in constant 1986 dollars.<sup>12</sup>

The aging workforce and particular occupations show patterns. In the US the median days away from work from lost-time data claims doubles from four or five days to 10 days between the age group 20-30 to the age group 55-65.

Some occupations have high numbers of median days away from work without even considering the ages of the workers; truck drivers, bus drivers, plumbers, and industrial machinery mechanics average 10-11 days off work.<sup>13</sup>

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<sup>12</sup> *Occupational Injuries and Their Cost in Canada, 1993-1997*, HRDC.

<sup>13</sup> US Department of Labour—Bureau of Labour Statistics, April 2003.



## **Perceptions about Safety in Yukon Workplaces**

Perception surveys may be the best overall indicator of a prevention culture in a business, industry or jurisdiction. A number of researchers have developed and tested perception surveys in various companies. They found that these surveys are a better indicator of how well safety is managed than the traditional safety audit. Surveys also reduce dependence on statistical measures of time-loss frequencies, which can be unreliable, especially for small companies. Statistical measures may have large fluctuations more reflective of chance than good or poor management.

In 2003, the YWCHSB commissioned a perception survey to examine a sample of Yukon workers', supervisors' and managers' views of their workplace's prevention culture. (The complete survey analysis is included in the Appendix.)

There appears to be a sense of modest optimism in values and beliefs about safety in the workplace that is not reflected in the perceptions of safety management practices. People think that prevention and safety are right to do—it's just that they do not see the relationship between their values and the average-to-poor practices in their workplace.

Respondents gave safety the same importance as other business objectives. However, as is so tragically demonstrated in the NASA shuttle disaster, safety must take precedence over all other objectives in order for it to be effectively managed. Also interesting is the large number of respondents who indicated that they had an injury in the last year (one in five). This figure is greater than the actual accepted claims ratio to the working population (which is one in 10). Quite possibly many workplace injuries are not being reported to the board and the real workplace time loss injury incidence rate is much higher than YWCHSB records indicate. This is likely similar to other jurisdictions.

There were indications of a "disconnect" between actual practices and expressed values. For instance only 24% of respondents indicated that they thought management was fully accountable for preventing injuries and illness in their area. This is surprising in light of the fact that approximately 52% thought that their workplace had written safety values that were up to date, well understood and had an important influence on safety. Safety value statements should come directly from the highest level of management and should indicate accountability in the policy statement or in the safety program section on accountability.

Another example of the poor connection between values and practices, where 35% of respondents did not know what disciplinary action is taken at their workplace for safety rule infractions. This response suggests that safety policies and procedures are not stated or are poorly communicated—which in turn may point to safety management problems.

Other responses indicate that safety practices are in use. For instance: some to considerable safety training 50%; safety meetings held 46%; good or excellent safety rules 72%; safety rules obeyed (generally to completely) 79%; most, if not all, accidents investigated and recommendations implemented 52%. However, these numbers are much too low; especially if medium to high-risk occupations are falling into the percentiles with little or no safety practices. These survey results show real opportunities for significantly reducing injury rates. For instance, investigating accidents thoroughly and implementing recommendations is one of the best ways to avoid future injuries.

Of even greater concern are the responses concerning the quality of the rules and the extent to which they are obeyed. Here a disturbingly large percentage of the respondents' perceptions indicate safety rules don't exist (19%) or if they do, they are rarely or never obeyed (6.3%). Even an office or retail store needs some basic written rules (unless it is an owner-operated business) and these are often posted as part of the safety policy and procedures.

These responses point to a likely continuation of the injury experience that Yukon has had during the last decade. There has to be a shift towards the perception of "excellence" in each question before we will see excellent results in the trailing indicators.

## PART 2. RESEARCH ON INFLUENCING BEHAVIOUR AND SAFETY CULTURE

A premise of modern safety management theory is that to achieve an ideal workplace, management, supervisors and workers must share basic values about safety and injury prevention. The workplace must also have an effective system for managing safety that is based on these values. Management commitment and worker conformity to this system is crucial.

Agencies outside the workplace cannot directly change a culture or sub culture of an industry or individual employer. Using effective strategies, however, they may be able to influence the people in the workplace and the safety culture in which they work. Agencies such as the YWCHSB may suggest to an industry group that it should use certain strategies or the board may partner with that group in implementing specific strategies to achieve an ideal workplace.

So what are the best strategies for the internal and external organisations to use in achieving ideal workplaces?

The following are principal findings divided into the strategy areas outlined in the introduction. There is also one set of findings that is general in nature. The points are from summary sources on this subject. A brief description of the authors is as follows:

Dan Peterson is an American authority and has written several books on the practical application of the psychology of safety; The Canadian Center for Occupational Health and Safety (CCOHS) does research for jurisdictions in Canada. The quotes are from a paper on influencing attitudes and culture done for New Brunswick but apply equally across the country; J.M. Stewart was with the Rottman School of Management at University of Toronto when he researched and wrote a book on perception surveys and excellence in safety; Scott Geller is an American psychologist specializing in safety and cultural change. He writes frequently in *Professional Safety* magazine and has published a book on helping people to actively care about safety. The book deals extensively with changing safety culture in the workplace; Gerald Wilde is an internationally known psychologist from Queen's University in Ontario who has studied motivation related to risk taking. He introduced the theory of risk homeostasis. He spoke at a seminar the board hosted 3 years ago; Richard Brown researched and wrote a paper related to enforcement issues with the WCB in B.C.

The authors selected looked extensively at primary research on attitudes towards safety, risk, and safe behaviour and performance in workplace settings and safety culture. Their summaries provide material that can be applied by workplaces, safety organisations and governmental organisations.

Also referenced in the text is the Institute for Work and Health. This is a research agency is an independent, not-for-profit research organization whose mission is to conduct and share research with workers, labour, employers, clinicians and policy makers to promote, protect and improve the health of workers. It is funded by the Workplace Insurance and Safety Board of Ontario.

## General

1. Safety performance can be improved by focussing on the cultural and management systems that influence safety behaviour. (Petersen)
2. Safe behaviour is most likely when personal and organisational ideology is aligned. To transform personal attitudes, people's emotional and rational faculties must be developed in tandem. (CCOHS)
3. Rational thought can be modified by providing information that imparts a realistic understanding of the probability of accidents, the severity of unsafe acts and conditions, and the ability of the worker to take control. (CCOHS)
4. When practical conditions conflict with attitudes, the practical conditions usually prevail. Organizations play an essential role in implementing a safe work environment; they must provide the conditions that translate positive attitudes into safe behaviour. (CCOHS)
5. Giving people opportunities for choice can increase commitment, ownership, and involvement. Personal choice also implies personal control—enhancing workers' empowerment and willingness to actively care for others. It's important to realise that eliminating the perception of choice—by imposing a top-down mandate that restricts or constrains work behaviour, for example— can sap feelings of ownership, commitment and empowerment, and inhibit involvement. (Geller)
6. The following beliefs or values are reflective of world-class safety cultures:
  - The health and safety of people has first priority and must take precedence over the attainment of business objectives.
  - All injuries and illnesses can be prevented. Safety can be managed and self-managed.
  - Excellence in safety is compatible with excellence in other business parameters such as quality, productivity and profitability; they are mutually supportive. Safe, healthy employees have a positive impact on all operations. They have a positive effect on customers and enhance credibility in the marketplace and in the community.
  - Like quality, safety must be made an integral part of every job. "Do it right the first time."
  - Good safety is "mainly in the head." Most injuries and incidents occur because of inattention, not because of a lack of knowledge or for physical reasons. People take risks because they believe that *they* will not be hurt. (Stewart )
7. Long-term behaviour change requires people to change "inside' (beliefs) as well as "outside" (actions). (Geller)

## Motivation

8. Safety is a continuous fight with human nature. Human nature or naturally motivating circumstances (such as a new employee's desire to impress a supervisor) typically encourages at-risk behaviour. The soon, certain, positive, and natural consequences of risky behaviour are hard to overcome. In other words: risky behaviour can appear to be speedier, easier, and more likely to be rewarded by a supervisor (e.g. the worker is faster and has a can-do attitude). (Geller)
9. Everyone has a personal target level of risk that is composed of the following:
  - a) Perceived benefits of risky behaviours
  - b) Perceived costs of cautious behaviours
  - c) Perceived benefits of cautious behaviours
  - d) Perceived costs of risky behavioursThe target level is always being adjusted with the above factors. For instance, a) and b) increase the target level of risk; c) and d) decrease the level. Incentives can be applied in c). Disincentives can be used to strengthen d). (Wilde)
10. Attitudes toward risk have an important social context. Family, peers, community leaders and others can influence attitudes and behaviour. (CCOHS)
11. The more that is known about risks, the more our sense of control develops. This sense of control may have negative consequences if it is unrealistic. People need to be persuaded that control comes from taking appropriate precautions that they believe in. (CCOHS)
12. Safety initiatives are more successful if delivered by people close to the individual: members of the community, local organisations, management, and fellow workers. (CCOHS)
13. Benchmarking and partnerships can play important roles in demonstrating what can be done and how easily it can be done. These can be a motivating factor for employers. (CCOHS)

## **Communication/Promotion**

14. Effective communication skills are needed to change a culture. (Petersen)
15. Community safety campaigns should be integrated and co-ordinated so that a consistent message is conveyed from various sources: media, community leaders, schools, management, etc. (CCOHS)
16. Media campaigns are more effective if conducted over a longer period of time and if co-ordinated with other efforts. (CCOHS)
17. Safety campaigns must provide information and persuasion in four stages:
  - information about the risk which is comprehensive, straightforward and honest
  - persuasion– an appeal to emotions
  - training– practical, realistic steps
  - feedback or enforcement (as positive as possible) (CCOHS)

## Evaluation

18. Numbers from program evaluations should be meaningful to all participants and should direct and motivate intervention improvement. (Geller)
19. Statistical analysis often adds confusion and misunderstanding to evaluation results, thereby reducing social validity. The culture needs to support reporting personal injuries, as well as discussing ways to prevent future incidents. The most influential evaluation tool to use is actually anecdotal, not statistical. (Geller)
20. All perception is biased and reflects personal history, prejudices, motives, and expectations. The current popularity of safety perception surveys in industry reflects an increased awareness of how perceptions impact safety performance. These surveys can help pinpoint issues that need attention, and activities in need of an intervention. (Geller)



## Empowerment

21. Empowerment of employees at all levels is required for making safety improvements. Everyone must feel a sense of personal responsibility for safety. (CCOHS)
22. Personal responsibility should go beyond compliance, and extend to active initiatives for safety improvement. (CCOHS)
23. The benefits of empowerment are many:
  - Workers sense that the organisation's efforts are properly prioritised; actions are occurring in areas that matter.
  - A sense of satisfaction leads to higher motivation in all areas.
  - Safety and production are both considered together. (CCOHS)
24. Ownership, commitment, and proactive behaviours are more likely when people work toward their own goals, not the government's. (Geller)
25. People feel more personal control when working to achieve success than when working to avoid failure. The value of increasing people's sense of personal control over safety is obvious. (Geller)
26. Empowerment is facilitated with increases in self-efficacy, personal control, and optimism. (Geller)
27. When people feel empowered their safe behaviour spreads to other situations and behaviours. (Geller)

## Education

28. Education and training are both required for long-term culture change. (Geller)
29. Teaching and demonstrating the characteristics of effective leaders can develop leadership. (Geller)
30. Focus recognition, education, and training on people who are reluctant but willing. (Geller)
31. Training and education should not be used alone. General awareness education should be avoided. Use specific, relevant content directed toward specific actions. (CCOHS)
32. Training and education should be tailored to the employee's level. Production workers, supervisors and managers will respond to different emotional and rational messages. (CCOHS)
33. Generally, occupational health and safety training is more effective when it is integrated with practical training, preferably at the earliest time, so that safe attitudes are more natural. (CCOHS)
34. Safety education in the school system can have major influences on the attitudes and behaviour of children immediately and in later life. In addition, safety education can also have a significant impact on parents, encouraging them to adopt safe behaviour. (CCOHS)

## Enforcement

35. Safety interventions in the workplace that strictly focus on controlling behaviour tend to be short-lived. (CCOHS)
36. People are socialised to expect negative consequences for making mistakes rather than rewards for doing things right. (Petersen)
37. Safety programs based on punishment (negative reinforcement) are generally unsuccessful. They can lead to avoidance behaviour and resistance, which not only do not result in safety improvements but also may negatively affect the whole workplace culture. (CCOHS)
38. Positive reinforcement is preferable to negative reinforcement, but again has only temporary impact if it is applied in isolation. (CCOHS)
39. Zero tolerance is a concept from criminal law that should not be applied to workplace safety. Zero tolerance is an extreme form of negative reinforcement that treats unsafe behaviour as a crime. It requires very strict application, which is usually impractical and seen as unfair. It also requires application to unsafe conditions, which is practically impossible. More gradual approaches such as zero permitted occasions embody the effective advantages of the concept in a more practical system. (CCOHS)
40. Although enforcement of punitive law is one of society's traditional attempts at motivating people towards safety, the evidence for its effectiveness has not been forthcoming. Punishment brings negative side effects; one of these is a dysfunctional social climate, a climate of resentment, uncooperativeness, antagonism, and sabotage. As a result, the very behaviour that was to be prevented may in fact be stimulated. Punishment may increase the inclination to beat the system. A modest amount of enforcement may be necessary, but the vast number of encounters with employers should be resolved by convincing and supporting activities. (Wilde)
41. Regulators need make little use of punishment because a primary persuasive strategy generates widespread compliance... If the probability of an offence being detected were one in a hundred, and only one in a hundred known violations prompts a penalty (reasonable estimates for many types of infractions), then the probability of an infraction resulting in punishment is one in ten thousand. In this setting, unless the putative offender grossly overestimates the probability of punishment or is very risk averse, a penalty three or four order of magnitude larger than the cost of compliance is required to deter a would-be offender who considers only the impact of formal sanctions. Penalties of this magnitude are extremely rare. (Brown)
42. The existing deterrence structure makes field officers the gatekeepers of the penalty process. The officer who detects an offence is the one who decides whether to initiate a penalty proceeding against the offender. Like any task, the

context of this decision influences the way it is performed. One aspect of the task environment that probably militates against officers recommending penalties is their ongoing relationship with regulated firms. The social bonds generated by ongoing relations may lead enforcement officials to shrink from punishment when education and persuasion fail. Sociological theory suggests that legal actors who have regular contacts with those subject to the law are more inclined than other officials to choose persuasion over punishment. Given the Canadian practice of having safety officers assigned to a regular geographical and/or operational setting, this may be an important barrier to truly effective enforcement. (Brown)

## Economic Incentives

43. Economic incentives, applied at the workplace through a company's internal responsibility system are a very effective method of lowering injury incidence.

They include:

- a) Vigorous management support. Active, visible and consistent support from all senior executives, from initial planning through implementation and maintenance is imperative.
- b) Rewarding the bottom line. Incentive programs should reward the outcome variable (not having an accident), not a procedural variable like wearing PPE, etc
- c) Attractiveness of the reward. Rewards may be in the form of tangibles, like cash, stocks or holidays, or intangible, like public commendation, access to the CEO, etc. Awards do not have to be large to be effective. In fact, they may be more effective if they are not excessive, because the resulting behavioural changes will be due people wanting to do "the right thing," rather than for mercenary cash reasons.
- d) Progressive safety credits. The amount of the incentive should continue to grow progressively as the individual operator/employee accumulates a larger number of accident-free periods. One colleague from the construction industry reported a safety incentive budget of \$600,000 for a \$200 million project a few years back. In that setting, a "safety dinner" was held every quarter, and those without an accident in the previous period were rewarded at the event. Rewards at each dinner were progressively larger, starting with a ball cap, moving to a leather jacket, and at the final dinner, each respondent without an injury claim received a colour television and VCR. That developer completed the project ahead of schedule, under budget and with a project injury rate 10% below industry norms.
- e) Simplicity. Operational rules for the incentive program must be simple and clearly understandable by all stakeholders.
- f) Perceived equity and attainability. All participants must perceive equal opportunity to achieve rewards offered through the same behaviours.
- g) Short incubation period. Required accident-free period should be relatively short so as to maintain interest in achieving target goals.
- h) Reward group as well as individuals. The program should be designed so that teams and groups incur peer pressure to achieve accident-free status.
- i) Stakeholder participation in program design. Collaboration and consultation with affected worker and supervisor groups is an essential component of buy-in.

- j) Prevention of under-reporting. This issue was frequently flagged by occupational health and safety professionals as the single most important factor in establishing credible incentive programs. Many traditional incentive programs lack adequate controls for under-reporting. Some programs actually encourage under-reporting by failing enforcing the requirement for full disclosure of incidents and claims.
- k) Reward all levels of the organization. Include supervisors and mid-managers in the award loop.
- l) Include initial training. An important indicator of an incentive programs success is the ability of all stakeholders to accurately and reliably identify which specific behaviours and outcomes are to be rewarded. This typically requires active 'training', rather than simply an organisational communication, such as a newsletter article, bulletin board notice or payroll stuffer.
- m) Maximize net savings versus maximizing return on investment. The variables in calculating return on investment on incentive programs means that important opportunities for reducing losses may vanish if the focus is on the return. Better to focus on total incident reductions, rather than questionable return on investment data.
- n) Research component. Optimal effectiveness over the long haul can be achieved if careful attention is paid to historical loss data, industry loss norms, cultural and organisational factors, and so on. By considering all data, a much clearer set of program metrics can be developed, and a defensible picture of program successes and challenges can be maintained over the life of the program. Also, important options for improvement of the program can only be identified when sufficient program data is available.  
(Wilde)

## PART 3. STRATEGY AREAS

The prevention activities undertaken by workers' compensation boards or ministries of labour can be separated into three main categories based on how they motivate change in the workplace. These activity categories are convincing, supporting and compelling. All three activities have been proven to reduce the amount and impact of workplace injuries.

“Convincing” activities promote prevention and eliminate hazards in workplaces by advocating the empowerment of workers, supervisors and employers. “Supporting” activities help companies assume their prevention responsibilities, eliminate hazards at the workplace and set up joint employer-employee safety plans. “Compelling” activities order the correction of hazardous situations and ensure compliance with the law and regulations.

A recent trend in prevention has been to build more convincing programs that focus on changing safety attitudes and behaviour. Convincing programs can be costly and require a long-term investment; but when they take effect they make widespread changes beneficial to business and society. Yet each activity has its place, with compelling activities most directly targeting primary prevention of workplace injuries in specific hazardous situations.

Similar techniques are used for other social behaviour issues, such as drunk driving. An effective advertising campaign may convince some people that driving while impaired is wrong and dangerous. A high-school course on the effects of alcohol on driving skills may make a young driver consider more carefully the consequences of drinking and driving. But a police officer stopping a drunk driver could be immediately responsible for saving a life—a very direct and quantifiable benefit. In order to make a change in society, all three techniques must be used effectively. And of course, they should work in concert.

In *Preventing Injury, Illness and Disability at Work* the Institute for Work and Health puts forward the premise that ‘Because there is no single cause for workplace injury, illness and disability and no single solution, stakeholders should look more broadly towards other disciplines when designing interventions and expect to take a partnership based “multi-pronged” approach.’ This multi-pronged approach recognizes the fact that primary and secondary prevention work in tandem not in isolation.

*An optimal effort to reduce workplace injury, illness and disability must build on the strengths of traditional primary and secondary prevention approaches, merging these to create a more effective strategy.*

*Many OH&S experts are embracing the concept that a more holistic approach to primary and secondary prevention strategies makes sense. How can this change in perspective be explained?*

- *The commonest occupational injuries—soft tissue sprains and strains, including low-back pain of “mechanical origin” and repetitive strain injuries of the upper limb—tend to recur over many years after their first onset. Such injuries are already so common in some workforces that most workers cannot benefit from a truly primary prevention, because they have already had the symptoms. The goal now must be to control those symptoms, reduce disability and optimize function.*
- *It has been shown in a number of settings that integrated, multi-pronged programs work best. These include ergonomic improvements in job design; toxic exposure control programs; modern disability management via workplace committees and multidisciplinary care teams; and finally, an OH&S “cultural change” in the workplace as a whole. When used together, these approaches contribute powerfully to both primary and secondary intervention in a synergistic way. These integrated OH&S interventions programs can thus be said to contribute to overall disability prevention or “control,” acting as multiple stages before the disability becomes chronic or severe.*

**Preventing Injury, Illness and Disability at Work**

In this section we will look at 7 prevention strategy areas, some of the trends and activities that are being pursued in these areas in the Yukon and elsewhere.



## Strategy Area 1: Evaluation

Generally, evaluation includes activities such as audits, outcome measurement, perception surveys, and statistical analysis.

In order for a prevention strategy to be successful, we need reliable ways to measure and determine effectiveness. Effectiveness can be defined as the extent to which a specific intervention, procedure, regimen, or service, when deployed in the field, does what it is intended to do for a defined population.<sup>14</sup>

Strategies need to be evaluated before and after implementation. Before deciding on a new intervention, decision makers should seek out the best possible information on the effectiveness of the intervention. After implementation, a certain amount of time must pass before it is possible to determine if the intervention has been effective.

In *Preventing Workplace Injury, Illness and Disability*, the following points are made:

1. Evaluating effectiveness takes time. A considerable amount of time must often pass before it is possible to determine with certainty whether an intervention has had any impact and whether that impact was positive or negative.
2. Commonly accepted wisdom is not necessarily evidence. When it comes to prevention interventions, often no rigorous evaluations are carried out to determine effectiveness. This can result in widespread adoption of ineffective interventions.
3. Evidence evaluators must possess a diverse skill set. Some evaluations of new programs or policies are not well done because the evaluating team is too narrowly based.
4. Real world interventions cannot be properly evaluated in a laboratory. Many extraneous factors can influence OH&S outcomes requiring complex evaluation approaches and study designs.
5. Findings should be replicable. In many circumstances we only have one high-quality study looking at a particular intervention, and we must rely on it as the best information available. But single studies may have flaws that are not obvious.
6. Individual stakeholder agendas must not be allowed to influence evaluation results. There is a natural tendency in prevention evaluations—as in other aspects of OH&S—for various “vested interests” to desire particular evaluation outcomes.

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<sup>14</sup> Preventing Injury, Illness and Disability at Work

7. Researchers and evaluators must do more than simply share results. They must also share an understanding of what does and does not constitute dependable, strong, reliable results.
8. Look at existing evidence for ethical and economic impacts. Before a prevention intervention is implemented, the stakeholders need to look at existing evidence for both ethical and economic impacts.

For a small organization such as the YWCHSB, evaluation is crucial. When resources are limited, only the most effective interventions should be considered. However, it is also difficult for a small organization to be able to perform rigorous evaluations on every activity. There are many traditional prevention activities that have been adopted by Canadian workers' compensation boards that have not been properly evaluated.

In order to find sound evaluations of interventions, workers' compensation boards may need to look outside of the OH&S field at other social interventions that have worked and then draw parallels from these examples. Relevant evaluations may also be found in other countries and continents.

Given the fact that most of Canada has experienced a plateau in the reduction of injury rates over the last decade, evaluation of new and existing interventions is even more relevant.

Evaluation is essential to the proper functioning of the internal responsibility system. A recent example: NASA's report on the shuttle disaster indicates that they failed to re-assess their safety culture, management systems and safety programs regularly after the Challenger disaster. If they had continuously evaluated (and then improved) their safety culture, they may have averted the recent Columbia disaster.

## **Trends**

A recent trend in evaluations has been a move from using safety audits as a measure of an organizations' safety culture, to using perception surveys.

Safety audits have been the favoured evaluation tool for years; but they tend to focus on conditions and procedures rather than individual behaviours or perceptions that might predict the behaviour. The Nova Scotia Construction Safety Association has criteria for certification that include an audit as well as mandatory training.

Dan Petersen has pointed out for years that classical safety audits do not predict performance because they describe what is said to happen at a workplace not what actually happens and how levels of supervisors, management and workers feel about the essence of the company values and how they manage risk.

Behaviour observation tools are also available and are used by some large employers in other jurisdictions. They are especially useful where there are fixed workstations and a repetition of activities during the time observed. A seminar was held a number of years ago in the Yukon on behaviour-based safety and at least one company employed the commercial program.

Recently, perception surveys have been proven to be better predictors of how well organisations manage safety than audits. These surveys relate responses by managers, supervisors and workers to a group of values and practices questions (very similar to the Yukon perception survey). If management, supervisor staff and workers do not concur on a number of key questions, there are problems in the organization—no matter how good they may have scored on a physical audit, or how well they have complied with the codes and regulations. The problems are predictive of poor safety performance.

## **YWCHSB Evaluation Activities**

### **YWCHSB Perception Survey**

The recent perception survey of Yukon workers, employers and supervisors will be repeated in three years. The data from a subsequent survey will allow the board to measure the effectiveness of its prevention strategies and assess improvements in the territory's safety culture. The board will share the results of its survey's with partners such as the Construction Safety Association so it can also benefit from the data and provide more focussed help to its client group.

### **Safety Program Audits**

Many Yukon employers have some of the key elements of health and safety programs in their workplace, for example, emergency response, training and some written procedures for high risk work. However, they do not have an operating safety program or system unless it has an evaluation loop to provide feedback for management to make changes.

At present, the YWCHSB does not perform extensive audits of safety programs for employers. Nor does the board specifically make recommendations to employers on how they could set up evaluation loops as part of their risk management and internal responsibility systems.

### **Technical Evaluations**

The YWCHSB does technical evaluations of the confined space entry program and root cause analysis of incidents and recurring problems.

## **Strategy Area 2: Behavioural/Educational**

Behavioural and educational strategies include communication campaigns, educational courses, advertising, forums and consultations.

Communication and education are a necessary and powerful part of all prevention activities. Because they target beliefs, which are the root of people's motivations, they are effective at making sweeping changes in safety culture.

Behaviour and educational strategies are naturally synergistic, enhancing the effectiveness of other strategies. An advertising campaign highlighting the risks of trenching can increase the effectiveness of safety officers targeting trenching infractions. Young worker safety courses in high schools will be more effective if they are reinforced by a communications strategy that raises employers' awareness that young workers are at a higher risk for injury at work. A return-to-work program at a worksite will be more effective if employees have already been educated on its value.

A key deliverable of behavioural and educational strategies is to ensure that people at each worksite understand and put into operation an internal responsibility system. The best internal responsibility systems do not just comply with regulations; they feature full participation by employees, supervisors and management in the identification of current or potential risks, and they plan for the control and management of risks. A progressive internal responsibility system incorporates both primary and secondary prevention activities.

### **Trends**

In the last decade, there has been a growing focus on educating young workers on worksite safety and injury prevention. Research indicates that there are limited changes that can be made on improving the safety behaviour of older workers. Through young workers there is the potential to make far-reaching changes in workplace culture. These young workers also have the ability to influence older workers, improving their safety behaviours.

For social marketing campaigns to make substantial changes, they require a substantial investment of time and finances. There are many competing messages (e.g. smoking, drunk driving, etc) and in order to keep a message in people's consciousness it requires constant reinforcement. Research indicates that these type of campaigns need to run over longer periods of time than previously thought—years rather than weeks.

These campaigns need to have simple, strong messages and ideally are coordinated with complementary activities such as educational courses in the schools.

In other jurisdictions, large awareness campaigns have recently been launched on back pain. Québec, B.C. and Australia are investing significant resources in this issue. Over a two-year period, an Australian multimedia back pain education ad campaign demonstrated the following results:

- There were more scientifically based beliefs about back pain in the general population.
- There was improved knowledge and attitudes in health care practitioners, which appeared to influence their management of pain.
- There was a reduction in compensation and disability costs related to back pain.

There is evidence that educational programs receive more take up when they are delivered by industry associations. More jurisdictions are therefore working with industry associations to design specific courses for their members.

Research indicates that the best method to promote best practices and management system improvements (especially to small and medium businesses) is via site visit or at the very least personal mailings (European Union Report).

A recent trend in other jurisdictions has been to use compelling activities as examples and therefore maximize their impact on public awareness. An example would be publicizing the result of a prosecution of a business with a serious safety infraction. This technique is being used in Alberta. Although this strategy is being used more recently in the occupational health and safety world, it has been used for many years in other social marketing campaigns—drunk driving is an obvious example.

## **YWCHSB Activities**

### **Social Marketing and Media Campaigns**

The YWCHSB uses its website, trade shows and the **WorkSafe™ Yukon** newsletter to regularly communicate health and safety information. Various media and advertising campaigns are used to highlight hazards and raise awareness of safety issues. The board also partners with other organizations to raise awareness of national events such as the Annual Day of Mourning for workers killed and injured on the job (a Canadian Labour Congress event) and North American Occupational Safety and Health Week (a Canadian Society of Safety Engineering event).

### **Public Awareness**

Twice a year, the YWCHSB hosts educational public forums, featuring the latest topics in occupational safety and health. The spring session focuses on safety and prevention, and the fall session focuses on health, rehabilitation and return-to-work. In addition there are specific presentations made to the Yukon Medical Association. These forums have been very popular in the community and have received good media coverage. They are particularly effective at providing accurate, current information to influential agencies such as the medical profession and the media.

The board also participates in various trade shows and other public events across the Yukon during the year. Recent displays have covered topics such as back pain and incident reporting.

### **Young Workers**

In 2003, the YWCHSB continued to enhance its programs on young worker safety. For the last few years the board has offered a young worker safety awareness session in Yukon schools. Recently it was expanded to include an after school program.

2003 was the third year the board conducted a high-profile summer campaign throughout the Yukon. The Young Worker Safety Contest has been very successful in engaging youth and raising their awareness of workplace safety. Participating youth fill out ballots that inform them of the increased risk they face on the job. Each year, for the past three years, the message has been expanded.

The board partners with Skills Canada Yukon to deliver a safety message to young workers considering a career in the trades. The YWCHSB offers safety instruction appropriate to each trade and supports an entrant in the category of Safety Professional.

Currently the Young Worker Passport Program for youth is evolving. This is a program that YWCHSB will assist in promoting but is being driven by the Safe Communities Foundation of Canada. Youth will take a test over the Internet and, when successful, will receive a passport certificate that they can show to an employer indicating they have the basic health and safety knowledge to protect themselves. The employer still must provide the specific safety training at the work site.

### **Web Site**

The YWCHSB maintains a comprehensive web site featuring all of its information materials including newsletters, the regulations and safety manuals. In addition, the board recently completed a comprehensive safety information site that provides employers with a central resource for all safety information. The site is called *Pursuing Excellence in Prevention* and is a cost-effective and easy-to-access resource for the territory's employers and workers.

### **Courses**

The core courses that the YWCHSB provides are safety committee, safety representative and, recently, due diligence/internal responsibility system.

Substantial work has been made to ensure employers manage the orientation and training of their young and new workers. Over the last seven years, board staff has provided booklets, site visits, press releases and ongoing training in high schools.

Technical courses are offered for specific types of hazardous work such as confined space entry, lockout and trenching, as well as courses for safety committees and employers such as accident investigation and ergonomics. While these might be offered by a private training company or a safety association elsewhere, the YWCHSB fills this role in the Yukon.

### **Course Development**

Course development has been a necessary tactic in the Yukon because there are no private safety course providers. The need for courses such as supervisor safety skills, ergonomics, scaffolding, trenching and rigging have been established and the course development was contracted through Yukon College or done in-house. Courses that have been developed on contract have been given to the college to promote and run.

Unfortunately, many of the courses offered by Yukon College are poorly attended—given the actual need in the workplace. Comments from employers are that the college charges too much (approximately \$100 per day per person) or they cannot afford the time to send people after they have hired them.



## **Seminars**

Specific seminars have been offered on topics that the YWCHSB felt would provide education and awareness for client groups, provider groups and staff. Examples here are zero injuries, managing chronic pain, neck and back pain, and behaviour-based safety.

Shorter awareness sessions on noise control, hearing conservation, indoor air quality and others are done on an as-needed basis. Hearing conservation awareness programs have been run by summer students for a number of years.

The board also participates in trade shows, youth and health fairs. Our educational themes in the past few years have been "Work Like You Play", "Close Calls" and "Finding your Stress/Satisfaction Zone."

## **Consultations**

The primary function of the YWCHSB's inspections and compliance unit is consultations with employers and workers. As part of a safety officer's inspection routine, he or she will ensure that supervisors and workers at a worksite understand the Occupational Health and Safety Act and regulations. This is primarily an educational activity, but employers may not always perceive it this way. If an employer is unwilling to change after an inspection, safety officers may take steps so that an employer is compelled to make the necessary changes.

The education and development unit staff also provide extensive consultations to employers, supervisors, safety committee members and individual workers. The subjects are usually broader than specific regulation questions.

## **Consultation Materials**

It is extremely important that the board maintain up-to-date materials for consultations and for clients who request specific information.

Unfortunately, the cost of updating YWCHSB booklets and pamphlets was becoming prohibitive. The solution was to create a web site that would link board resources with other sites so that board staff and clients could see the best models for managing safety and build their capacity as needed. The site is called *Pursuing Excellence in Prevention*.

Certain employers are targeted for direct mailing campaigns concerning specific hazards or issues. For instance, those that employ young workers have been sent booklets on orienting and training young and new workers.

### **Strategy Area 3: Empowerment**

Empowerment includes one of the most valuable prevention activities: the internal responsibility system. It also includes industry groups, such as the Construction Safety Association, which works to improve the safety performance of its entire industry.

The internal responsibility system empowers the parties at the workplace to discuss the programs and systems they will use to protect them against hazards. Safety committees may make recommendations to management concerning the functioning of the safety program. In addition, employees may be involved in risk assessments.

Another empowerment tactic has been to partner with industry groups to improve the safety performance of their members. Industry safety associations exist in all jurisdictions except NWT and Nunavut. They appear to work very successfully in getting industry commitment to standard training, introducing best practices, providing awareness materials, reporting incidents involving serious injury and managing safety programs.

At the workplace level, involving employees is essential for an effective safety system to work. All modern safety management theories ascribe to this. This allows employees to be personally involved in safety for *their* purposes—not the government's or the employer's.

#### **Trends**

The internal responsibility system has been recognized as a critical component in prevention for over 30 years. However, recent research provides even more evidence of the value of this system. The concept of “zero injuries” is laid on the foundation of the internal responsibility system. It is impossible for companies to gain zero status without an effective internal system.

Zero injuries are a concept that is growing in uptake and understanding in Canada's largest corporations. Dupont, Syncrude and Ontario Power Generation have had tremendous success putting the program into practice. Ontario leads the country in the promotion and implementation of the zero injuries concept. However, it is such a valuable program that it is only a matter of time until it receives more widespread use.

There has also been a national trend in establishing industry associations. The evidence from Nova Scotia and Ontario shows that these organizations can play a powerful role in changing workplace culture. The trend in the future is towards more empowerment of industries through industry associations.

## **YWCHSB Activities**

### **Forums**

The YWCHSB has offered one educational forum on the zero injuries program. Yukon businesses participated in the one-day course delivered by HATSCAN (Hazard Alert Training Society of Canada).

### **Education**

The YWCHSB's Due Diligence and Internal Responsibility System courses teach the proper and legal working relationship of all workplace parties—workers, supervisors and employers. The courses emphasize the importance of empowerment in achieving safe workplaces.

### **Yukon Construction Safety Association & Employer Consultant**

The board recently has made a formal arrangement with the Yukon Contractors' Association to deliver safety program advice and services to Yukon employers through the Yukon Construction Safety Association. In addition, the board has partnered with employers through the Yukon Chamber of Commerce to hire an employer consultant. The consultant provides advice to employers including lowering the costs of claims, assessments and prevention through managing health and safety.

## **Strategy Area 4: Ergonomics & Engineering**

Ergonomics deals with people's physical limitations and capabilities and how they are affected by the conditions of their workplace. These conditions include the arrangement of tools and equipment, work processes, physical and mental effort, noise, lighting, temperature and air quality. Prevention activities would include designing ergonomic computer workstations and designing production line processes so they do not make workers perform repetitive, unnatural motions.

Ergonomics is primarily a supporting prevention activity. However, there may be instances where conditions are so unsuitable and damaging to workers health an employer may need to be compelled to make adjustments. An investment in proper equipment may seem extravagant—but compared to the costs of treating repetitive strain injuries, ergonomically correct equipment is a good investment.

The majority of workers' compensation benefits paid to workers in Canada are attributable to soft tissue injuries. Many of these injuries result from the interaction of people and equipment. These may be overuse under tension, lack of physical conditioning for the task required, static postures, and overexertion.

Safety engineers are responsible for providing technical information in the fields of occupational hygiene, mining, ventilation, chemical, or structural engineering. Safety engineering is usually performed by professionals employed by large corporations, however it may also be a service offered by government. They are also often involved in risk management activities.

### **Trends**

Some Canadian prevention agencies have hired ergonomists to deal with the burgeoning costs of musculoskeletal problems in the workplace. The use of ergonomic assessments and interventions can be especially effective when psychosocial factors are also taken into account; these factors include work demands and rewards, support of co-workers and supervisors in the control of work pace, and work stress or satisfaction.

The following definition of health from the World Health Organization is apt: "a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity." When looking at workplace health it is important to consider that the physical environment is not the only aspect to observe and adjust. Ergonomics applied strictly to the physical arrangement will not solve complex problems involving the overall health of workers. Ergonomics is a prevention activity that naturally ties in with other workplace initiatives in wellness.

A recent study by scientists from the Institute for Work and Health offers an example of how multiple causes contribute to workplace health problems. The researchers looked at possible “leading indicators” for new complaints of work-related low-back pain among workers at a Canadian General Motors plant in Ontario. They found that both psychosocial factors (such as perceptions that the workplace was not socially supportive) and measured ergonomic exposures on the job played a significant role in workers’ risk for a new episode of low-back pain. The study demonstrates that tackling only ergonomic physical factors or only psychosocial workplace factors would almost certainly be insufficient for prevention efforts to succeed.<sup>15</sup>

Until the mid-90s, safety professionals and engineers were often employed by government health and safety departments. Most governments now only retain a few professionals in their regulatory sections for internal advice only. The two reasons for not offering services are the following: 1) the employer is responsible for retaining their own professional advice to meet reasonable standards of health and safety and 2) advice given by a government engineer or a safety officer that lead to an incident could result in officially-induced error litigation.

Despite the reduction in professional engineers in government, the number of registered safety professionals and certified occupational hygienists in Canada has expanded. More of these professionals are being employed and contracted by larger corporations for inspection and consultation services.

Risk management is a trend in proactive occupational health and safety management. The concept is in regular practice in the United Kingdom, and is beginning to be implemented more in Canada. Ontario’s *Business Results through Health and Safety* program includes a risk assessment component for businesses to complete. Risk assessment and management is a vital component of the internal responsibility system.

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<sup>15</sup> Preventing Injury, Illness and Disability at Work

## **YWCHSB Activities**

### **Ergonomic Assessments**

Currently the YWCHSB does not have an ergonomist on staff, nor is there anyone in the territory with this qualification. However, several staff has been trained in basic assessment of workstations and the use of the NIOSH (National Institute for Safety and Health) equations for lifting, pushing and pulling. YWCHSB has spent considerable time on public awareness campaigns in presenting the stress /satisfaction model related to managing back pain. This could be also applied to some other ergonomically related issues.

### **Ergonomic Research**

YWCHSB staff and consultants have kept pace with developments in ergonomics through web research, papers produced by other workers' compensation boards, and other institutes in Canada and the world. This knowledge must be transferred to the client groups in an effective manner. The *Pursuing Excellence in Prevention* web site contains excellent information on ergonomics, easily accessible to Yukon worksites.

### **Education and Workplace Wellness**

Several one-day introductions to ergonomics courses have been offered to safety committee members and supervisors. A brief segment on ergonomics is covered in the Supervisor Safety Skills – Level 2, offered by Yukon College.

The YWCHSB can promote ergonomics by encouraging employers to establish wellness programs. Any workplace with a wellness program most likely includes ergonomics in its program. In an optimal workplace culture, employers recognize that they are responsible for ensuring a stable workload for their workers. This stable workload helps to manage the psychological factors at the workplace. As a result, workers are more likely to have a healthy work/home balance. And this balance, in turn, will yield workplace wellness.

### **Risk Assessment**

The YWCHSB has had some experience with detailed risk assessment. Staff has promoted its use for several employers who are facing new risks in the workplace. Certain risks, such as threats of violence, can be well managed by risk assessment. Health care centres are an example of a workplace that is experiencing increased risk from violence.

## **Strategy Area 5: Economic Incentives**

Economic incentives include prevention activities such as assessment premium rebates and surcharges (applied by the workers' compensation board) and workplace programs that reward employees for safe behaviour (applied by the employer and the internal responsibility system).

Historically, incentives have been targeted towards employers, motivating them to make changes in their workplace, and rewarding them for making those changes. However, they can also be targeted at workers at a worksite and be a dynamic part of an organization's internal responsibility system.

Experience rating is a method for adjusting employers' compensation premiums to reflect claims costs. In most experience rating programs, employers whose claims cost are below their industry average get a discount, while employers whose claims costs are higher than their industry, average pay a surcharge.

Generally, the goal of workers' compensation incentive programs is to increase the fairness of assessment premiums, and to reduce the financial and social costs of workplace injuries. Incentive programs also usually increase the administrative cost of compensation. Some of these costs are the ongoing explanations of the plan, dealing with complaints, and dealing with employers who may challenge claims being charged to their experience account.

The Occupational Health and Safety Act and regulations set out the standards for the workplace conditions. But the regulations do not set out how an employer must assess, plan and manage known risks, including the risk of workers' unsafe behaviours. Behaviour is critical in workplace safety because the personal actions of workers account for 80-90% of the incidents leading to injury. How workers are protected from noise, chemicals, or radiation is often a matter of personal behaviour. Engineering controls go a long way towards reducing risks but there may be a need to apply certain procedures and personal protective equipment to reduce the risks further. Motivating employees to use their training and safety equipment may be achieved by incentives.

### **Trends**

Several researchers point to positive motivation as possibly the only strategy to further reduce the risks individuals take. The question is: where and how should incentives be applied? By the employer at the work site or through a program of rebates on assessment premiums run by a workers' compensation board or some other plan?

There is significant evidence that incentives applied at the workplace by employers do work. (Wilde) However, they must meet certain criteria in order to be successful.

The European Agency for Safety and Health at Work has researched 'recognition schemes', and concluded that certain criteria are fundamental to success. Specifically, they include:

- Senior management commitment and involvement in the process
- Involvement of staff and trade union representatives in the process
- Procedures, guidelines and criteria for the scheme that are transparent, fair and user-friendly
- Identification of areas for improvement
- Re-evaluation of participants in the scheme
- Incorporation of the scheme into other quality initiatives in the organization
- Tangible benefits for participants in the scheme, and
- Periodic open and transparent evaluation of the scheme, with systematic updates as required.

Finally, the Construction Industry Institute in the United States points out that the use of incentive programs in their industry is considered one of ten best practices. The incentive programs have to be carefully constructed and communicated and are only useful when all other elements of a safety program are fully developed. Information on incentive programs operated by contractors or owners is easily obtained.

Workers' compensation administered incentive programs use experience rating, best practices, or a combination of experience and best practices to adjust employers' compensation premiums. Of the three, experience rating by itself is more prevalent in Canadian jurisdictions. However, there has been a recent trend towards establishing more best-practices programs.

Best practice programs encourage employers to establish workplace best practices by providing a system of premium discounts or surcharges based on participation. These best practices may include appropriate return to work, reporting claims promptly, and audited elements of a certified safety program.

There are legitimate concerns that workers' compensation incentive schemes can lead to under reporting of injuries by employers. As under reporting appears to be occurring already, there will need to be the checks and balances to ensure that there are auditing and investigative resources available.

Outside of the financial incentive programs that workers' compensation boards offer, some governments such as Nova Scotia have chosen to only hire contractors who



meet certain criteria such as have a certified safety program including trained workers, supervisors and managers. When the NS government started this, the power company and several of the major municipalities including Halifax also agreed only to hire certified contractors. It therefore became an incentive to become certified—without any change in legislation. The Nova Scotia Construction Safety Association who co-certifies with the department of Labour in Nova Scotia indicates that 80% of all construction employees are now covered by this initiative.

Private industry has been doing this for years, especially in the oil-refining business. Contractors are selected into the bid process only after they have proven that their safety programs are exemplary and their injury record matches or exceeds that of the refinery. In most cases they are looking at lost time injury frequency rates of less than one per 100 persons employed for a year.

Some jurisdictions publish and reward the best practices through their safety newsletters and during annual conferences. Most do not publish safety statistics unless there is a significant exposure time, for example a million person days without a lost time injury.

## YWCHSB Activities

### **Merit Rebate Program**

The Yukon does not have a merit rebate or best practices program currently. The last merit program was discontinued in 1996. It was a combination of a percentage discount on premiums for having a safety program and a percentage discount based on the experience rating of the employer. A review of the program in 1995 indicated it did not change the behaviour of employers and it did not lead to lower claims costs. It was also administratively expensive to operate given the size of Yukon employers.

As part of the 2003 Strategic Plan, the YWCHSB will review the value of establishing a new incentive program.

### **Public Recognition**

Several employers who have demonstrated best practices have been featured in the **WorkSafe Yukon** quarterly publication. While there is no financial reward, the employer does get public recognition for taking steps towards pursuing excellence.

## **Strategy Area 6: Legislative/ Legal**

Legislative and legal includes all activities that necessarily include regulations or legislation in their implementation. These would include enforcement, prosecutions, and regulation development.

Regulations are a collection of written or referenced standards developed from the accumulated knowledge of risks and the controls to eliminate or reduce these risks. Where there may be allowance for other alternatives, often a professional engineer is required to approve the design. For the most part, occupational health and safety regulations in Canadian jurisdictions are the minimum standard for the operating conditions of equipment and the safe procedures for certain work activities.

Enforcement includes prevention activities such as worksite inspections by safety officers, and prosecutions of employers, supervisors and workers with serious safety infractions.

Enforcement is by its nature a compelling activity. However, safety officers in the performance of their duty will also employ convincing and supporting techniques. One of their primary functions is to ensure that employers and workers know their responsibilities according to the occupational health and safety act and the regulations.

The discussion of enforcement can be controversial. Does enforcement and particularly, does punishment, work? There is evidence that this question may be answered both positively and negatively. Perhaps punishment is not the ideal tactic for turning around the behaviour of the individual being punished. There are financial consequences to the employer, supervisor or worker that provide specific deterrence for avoiding a particular set of behaviours. But often these are not generalized to taking action on other behaviours necessary to have a completely safe worksite. However, fines or other penalties may have a very beneficial deterring effect on the general public, if it is made aware of the consequences of the lack of diligence with respect to safety.

### **Trends**

Workplaces, equipment and our understanding of risks and hazards are constantly changing; for this reason, regulations must be constantly updated in order to remain relevant. Modern regulations must now take into account repetitive strain injuries and the increasing use of computers at the worksite. Even traditional occupations such as construction have had significant changes in equipment over the last decade. Regulations must be adapted to these changes in order to provide worksites with the safest recommendations.

It is important to remember that a minimum level of compliance is only an adequate prevention outcome—the goal of progressive external system partners and business owners is for workplaces to exceed compliance. Research indicates that achieving compliance with the regulations does not necessarily yield zero or near zero injuries and near zero costs. If prevention programs are focussed solely on compliance, the ideal workplace will never be attained. Yet compliance has been the main goal for a great deal of prevention activities throughout Canada and the United States even though it appears that Canada certainly is not gaining much ground in reducing injuries.

## **YWCHSB Activities**

### **Regulation Review**

Regulation review work has been continuous since 1996. In the last seven years, the board has reviewed industry standards and other jurisdictions' regulations for practical application in the Yukon. Extensive public consultations allowed Yukon workers and employers to make comments and amendments to the proposed regulations. The result is a completely revised draft of occupational health and safety regulations that conform to a modern standard of safety in the workplace.

These draft regulations have been submitted by the board to the government and Minister Responsible for the YWCHSB. Ultimately the Cabinet will decide whether the draft regulations should be approved for implementation.

The Occupational Health and Safety regulations currently in force in the Yukon are almost 30 years old and have not provided modern safety procedures for many years. They are also very difficult for employers and workers to use and understand.

### **Inspections**

The YWCHSB performs over 400 safety inspections per year. Most of these inspections involve consultations with employers and workers to see if they understand and have carried out their responsibilities under the Occupational Health and Safety Act and regulations.

### **Orders**

When issuing orders, the YWCHSB focuses activities in a wide range of risk. Many inspections focus on high risk, for example, orders related to lockout procedures (used to ensure machinery is shut down when under repair or maintenance), confined space entry and protection from falls. Continued non-compliance with first aid regulations and the lack of safety committees may also result in a sanction such as a warning letter or a penalty levy. In addition to closing part or the entire work site, the safety officer may recommend a sanction.

### **Target Risk**

The board targets certain high-risk activities every year during the cycle of construction in the spring and summer. This focused approach is called "Target Risk." Target Risk ensures that officers' time is spent where there is the most opportunity for reducing injuries and fatalities. In recent years, trenching, fall protection and scaffolding work have been targets for improvement. A media campaign works in conjunction with the Target Risk enforcement activity, raising

employers and workers awareness of the program and its consequences. Infractions in target risk areas usually lead to the application of sanction.

### **Sanctions and Prosecutions**

Safety officers use a stepped approach when applying sanctions. The first sanction often used is a warning letter. If an employer does not make the changes outlined in the warning letter, a penalty levy may be applied. When applying sanctions, safety officers adhere to the board's procedures manual, which clearly outlines when to apply a certain sanction.

The maximum fines prescribed by the Yukon Occupational Health and Safety Act are comparable to those of other Canadian jurisdictions. For a first time offence, the maximum fine is \$150,000 and for a second, \$300,000. In reality, these maximum fines are never applied. The average fine over the last 12 years is \$8,410. Penalty levies are an alternative to prosecution and are therefore used more frequently. The average levy over the last seven years is \$2,037.

### **Focus Firm**

The Focus Firm pilot project is an attempt to deal with some of the Yukon's larger high risk and high injury frequency companies. This project is based extensively on B.C.'s model. The project will hopefully lead to participating employers achieving a higher standard than compliance. Ideally they will start doing prevention activities for their own, not the government's, purposes.

The *Focus Firm Pilot Project* targets large employers in the construction industry. Participation is voluntary and limited to 10 firms at this point. These 10 participants will work with a safety officer at the YWCHSB for the next two years to develop functioning safety programs specific to their needs. Construction continues to be a high-risk occupation with many lost-time injury claims and repeat safety violations. By working collaboratively with these 10 firms, the YWCHSB hopes to bring the injury rates down for the mutual benefit of the participating firms, their workers and all Yukon businesses. An integral part of this project is evaluation; if the program is successful it will be extended to five years.

### **Root Cause Inspection**

Root Cause Inspection is a technique that will be used by the YWCHSB to help find the source of repetitive incidents. Each safety officer at the board will target 10 employers with repeat injuries and safety violations. Working cooperatively with these businesses, the officer will help the employer, supervisors and workers identify the root cause of these incidents and develop measures for eliminating them.

## Strategy Area 7: Health Care

The YWCHSB does not provide direct health care to its clients. However it has an important role to play in partnering with health care professionals, ensuring the most up to date information on disability management is shared, and partnering with health care workers to ensure that a patient's return to work is properly managed.

When engaged in these activities it would seem that the board is engaged in purely secondary prevention activities. However recent studies have shown that an effective return to work program will also prevent injuries from occurring. Also: given the fact that there is an aging population in the Yukon, and many workers have existing health conditions, secondary prevention may be a more relevant intervention than we have previously acknowledged.

### Trends

There is a movement towards more integration between primary and secondary prevention interventions. This process has been described as breaking down the solitudes.<sup>16</sup> The rationale is that synergistic injury prevention and disability management initiatives appear to make more efficient use of available resources (both personal and financial), and should lead to more sustained improvements in workplace injury, illness and disability outcomes.

A people oriented culture in the workplace is crucial to the success of integrated prevention and return to work programs. In Quebec, a study found that when management demonstrated a strong commitment to effective health and safety initiatives through their actions, workers believed their employers were genuinely concerned with their health and well-being, rather than simply being preoccupied with cost control. This commitment from management fosters an environment in which there is open communication and trust between workers and their supervisors when designing return to work plans. Workers were more likely to attempt early return to work in such cases.<sup>17</sup>

Because combining primary and secondary interventions can yield a greater impact than the sum of impacts from separately implemented interventions, jurisdictions such as Ontario are looking at ways they can deliver primary and secondary intervention programs in a more integrated fashion.

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<sup>16</sup> *Injury Prevention and Return to Work: Breaking Down the Solitudes*. A. Yassi, A. Ostry, J. Spiegel.

<sup>17</sup> *Preventing Injury, Illness and Disability at Work*.

## **YWCHSB Activities**

### **Service Teams**

The YWCHSB's service teams have offered a holistic approach—combining primary and secondary prevention—in service delivery to Yukon employers. Service teams have been composed of a safety consultant, safety officer, adjudicator, rehabilitation counsellor and financial services officer. Every Yukon employer can access their service team for information regarding injury prevention and return to work.

### **Medical Consultant**

The board's medical consultant performs a valuable role in liaising with local health care providers and providing them with the most up to date information on primary and secondary prevention. The medical consultant meets regularly with the Yukon Medical Association providing consultative services. The consultant also recommends topics for the YWCHSB's yearly forum on topics in disability management. These forums have been very popular with both the public and with health care professionals.

### **Return to Work**

The YWCHSB's service teams and rehabilitation counsellors in particular facilitate return to work for injured workers. In 2003, the board reviewed its indicators regarding the effectiveness of return to work programs. Following is an excerpt from the review.

Of the 128 claim files that were reviewed in detail, it was noted in 22 files that the employers were unable or unwilling to provide a modified return to work. It is assumed that these statements indicate that these 22 workers would have benefited from some type of modified return to work but that this option was not available to them. This number should be considered as an estimate as there was no system in place to formally track employers who were unable or unwilling to provide the necessary accommodations.

However, it is worth highlighting that it appears as if there were 57 workers overall who may have benefited from a modified RTW. While 35 workers experienced a successful modified RTW in 2002, approximately 22 workers who may have benefited from the same experience were not provided with an opportunity. Of these 22 "unable or unwilling" situations, 10 were with small employer organizations, five with medium and seven with large employers.

The report illustrates the challenge facing the board in making Yukon workplaces more accommodating to injured workers returning to work.



## PART 4. DISCUSSION AREAS

### **What factors should the board use when selecting prevention strategies?**

Restricted resources, a small jurisdiction and a compelling requirement to adopt effective interventions make it necessary for the YWCHSB to carefully review all prevention interventions before adopting them.

Our preferred strategies should be:

- Based on sound prevention strategies—either supported by research or have a record of success in other jurisdictions.
- Possible and easy to evaluate so that the board can be assured they have been effective.
- Synergistic, so that they enhance other interventions and therefore widen their impact and effect.
- Applicable to Yukon conditions and the state of the safety culture as revealed by the recent perception survey.
- An efficient and effective use of the financial resources at the YWCHSB.
- Possible to implement with the human resources at the YWCHSB.
- Endorsed or recommended by the board's stakeholders and clients.
- Endorsed or recommended by the board's staff and safety professionals.
- Inclusive of partners in the community (i.e. the Injury Awareness Coalition, the school system) so that a wider audience is reached and engaged.

### **Notes & Comments:**

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**What do we value?**

A discussion point for the board and its stakeholders is whether there are certain strategies that are preferred purely on the basis that the approach reflects our values. Do we value education more than enforcement, even though both are effective? And would we value enforcement more than communications, if the public is demanding more workplace inspections and less advertising?

Are there certain strategies that the board would like to focus on since they define the organization, its stakeholders and the environment we live in, in the North? There may be certain approaches that are more suited to our northern environment, where a more personable, less confrontation style is better received.

**Notes & Comments:**

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**Who are the leaders?**

Is it possible to make significant changes in safety culture without leaders? Is the YWCHSB a leader? Is government a leader? Is the Board of Directors a leader? Who will champion prevention activities, giving them a face and a public show of commitment?

To shift a culture there must be leaders. In 2002, Alberta launched *Work Safe Alberta*, an aggressive and ambitious program to reduce workplace injuries and illnesses. The program was envisioned and is championed by Clint Dunford, Minister of Alberta Human Resources and Employment, the Workers' Compensation Board, and the Appeals Commission for Alberta Workers' Compensation. The target of *Work Safe Alberta* is to reduce workplace injuries 40 per cent by 2004.

Alberta uses the lag measure of the time loss injury incidence rate as in the as its key measurement tool. Throughout most of the 1990s, Alberta's injury rate was 3.2 to 3.5 injuries per 100 person years. This was an improvement over the rate of 1991 (4.1) and 1992 (3.7). However, Alberta seemed to be unable to continue a downward trend in injury rates in the 1990s. The rate was at a plateau of 3.2 to 3.4 for seven years.

When Mr. Dunford became minister, he made preventing workplace injuries a priority. He launched *Work Safe Alberta*, announced that the goal of the program was to lower the rate to 2.0 injuries per 100 person years by 2004, and then set up a steering committee made up of industry, labour, and safety associations to determine the actions Alberta will take to achieve this goal. Just one year after launching *Work Safe Alberta* the injury rate has dropped to 3.0. Although there may be problems noted above by only using such statistical measures, it seems the test will be the sustainability of the rate and ultimately the reduction in costs

The strategies employed by Alberta are almost secondary to the fervour and commitment the minister has injected into the campaign. Dunford picked a goal and spent every opportunity influencing employers, labour leaders and others to try to achieve that goal.

Other leaders in other jurisdictions have come from safety associations, presidents of WCB's and non-government people and organizations such as Paul Kells in the Safe Communities Foundation.

In a territory the size of the Yukon a high-profile leader could play a powerful role in turning around safety culture and increasing public awareness.

**Notes & Comments:**

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## **How will the strategies be evaluated?**

Once we select strategies, how will we determine their effectiveness?

Should specific goals be established as waypoints towards the ideal work environment? Should these be leading or trailing indicators, or both? Currently the board's three-year business plan indicates that we will be looking for an increase in the number of workplaces that are covered by an effective safety program.

Excellence in primary prevention at a place of employment should be relatively easy to measure. An audit and a perception survey benchmarked against an excellent industry standard by a qualified auditor is all that is necessary. This would be easy to accomplish in some jurisdictions. However, there are no legislative tools, or non-legislated incentives in Yukon to require or encourage employers to do this. There are also no Yukon established qualifications by an industry association for safety auditors or surveyors. This could change if the safety association established a goal of successfully convincing the government to require a certified and audited safety program in a business before it could bid on a government project. Nova Scotia has had a fairly positive experience with this.

The best available tool for measuring a general cultural trend is the safety perception survey. As can be seen from the 2003 Yukon survey there is significant room for improvement in the territory. We cannot expect a complete and sudden turnaround in culture. Many of the changes occur in small steps. Employers and workers first have to talk the talk then learn how to walk the talk; the third stage is selling the talk to others. Culture shift theory predicts that a third of the people will change fairly quickly, one third will occupy the middle ground and need more convincing and supporting and about a third will be resistive.

Goals could be set that include making significant cultural influence in the first third of the people in a certain period of time and moderate influence in the middle group. In the next period of measurement, a certain percent change in the first group, a lesser percent change of the middle, perhaps some movement in the bottom third should be accomplished. The third period of measurement would see a large majority of employers and employees shifted. Again, broadly speaking, the shift could be observed by the safety perception survey.

## **Notes & Comments:**

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## APPENDIX

***Accommodating Workplaces 2002:  
Measurement of Selected Strategic Plan Indicators***  
YWCHSB internal paper (2003)

Annex D – from ***United Kingdom Guide to OH&S Systems***

***Conclusions and Final Recommendations*** excerpt from: ***Influencing Attitudes  
Towards Workplace Illness and Injuries***  
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What Works and How Do We Know?***  
A Discussion Paper for Ontario's Health and Safety Community  
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