WHO Healthy Workplace Framework and Model:

Background and Supporting Literature and Practice

by Joan Burton

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NOTE ABOUT THE INSERTED QUOTATIONS:

Throughout this document there are numerous quotations inserted in text boxes on the pages. Each has a designation at the bottom as "*Interview #xx [Country], [Profession]"* These are quotations taken from the transcription of 44 interviews with global professionals from various disciplines, carried out for WHO by Stephanie Mia McDonald, Institute of Work, Health and Organisations, University of Nottingham, during July and August, 2009.

Tables and Figures

Acknowledgements

Paul Schulte, National Institute of Occupational Safety & Health, USA

Tom Shakespeare, World Health Organization, Headquarters, Disability Task Force, Switzerland

Cathy Walker, Canadian Auto Workers (retired),Canada

Matti Ylikoski, Finnish Institute of Occupational Health, Finland

WHO Healthy Workplace Framework:
Background and Supporting Literature and Practices

"The wealth of business is best founded on the health of its workers."

Dr Maria Neira, Director, Department of Public Health and Environment

Executive Summary

Currently, an estimated two million men and women die each die each year as a result of occupational accidents and work-related illnesses or injuries[1]. There also are some 268 million non fatal workplace accidents resulting in an average of three lost workdays per casualty, as well as 160 million new cases of work-related illness[2]. Additionally, 8% of the global burden of disease from depression is currently attributed to occupational risks.[3] This data, collected by the International Labour Organization and the World Health Organization, only reflect the injuries and illnesses that occur in formal, registered workplaces. In many countries, a majority of workers are employed informally in factories and Businesses, where there is no record of their work-related injuries or illnesses, let alone any programmes in place to prevent injuries or illnesses. Addressing this huge burden of disease, economic cost, and long-term loss of human resources from unhealthy workplaces is thus a formidable challenge for countries, economic sectors, and health policymakers and practitioners.

In 2007 the World Health Assembly of the World Health Organization endorsed the *Global Plan of Action on Workers Health* (GPA), 2008-2017, with the aim to provide new impetus for action by Member States. This is based upon the 1996 World Health Assembly *Global Strategy on Occupational Health for All.* The Stresa Declaration on Workers' Health (2006), the ILO Promotional Framework for Occupational Health and Safety Convention (ILO Convention 187) (2006), and the Bangkok Charter for Health Promotion in a Globalized World (2005) also provide important points of orientation. The Global Plan of Action sets out five objectives:

1: To devise and implement policy instruments on workers' health
2: To protect and promote health at the workplace
3: To promote the performance of and access to occupational health services
4: To provide and communicate evidence for action and practice
5: To incorporate workers' health into other policies.

In this context, this WHO model provides a flexible framework adaptable to diverse countries, workplaces and cultures. WHO will develop practical guidance specific to sectors, enterprises, countries and cultures, together with WHO collaborators, experts and stakeholders.

The principles outlined here are based on a systematic review of definitions of healthy workplaces in the global literature as well as policies and practices for improving workplace health. The documentation was

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[1] ILO, Facts on Safety at Work. April 2005
[2] Joint Press Release ILO/WHO Number of Work related Accidents and Illnesses Continues to Increase. ILO and WHO Join in Call for Prevention Strategies. 28 April 2005
[3] WHO, 2006a. Preventing disease through health environments. Towards an estimate of the environmental burden of disease. Authored by A. Prüss-Ustün and C. Corvalan.

reviewed at a global workshop in WHO in Geneva from 22nd to 23rd October 2009 involving 56 experts from 22 countries, WHO regional offices, related WHO programme representatives, an ILO representative, 2 international NGO representatives, as well as worker and employer representatives.

This complete review of evidence, together with references, is set forth in a background document, *WHO healthy workplace, framework and model, background and supporting literature and practices*, (WHO, 2010). It is available online at: http://www.who.int/occupational_health/healthy_workplaces/en/index.html.
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This background document is written primarily for occupational health and/or safety professionals, scientists, and medical practitioners, to provide the scientific basis for a healthy workplace framework. It is intended to examine the literature related to healthy workplaces in some depth, and in the end, to suggest flexible, evidence-based working models for healthy workplaces that can be applied by employers and workers in collaboration, regardless of the sector or size of the enterprise, the degree of development of the country, or the regulatory or cultural background in the country. The phrase healthy workplace "model" is used to mean the abstract representation of the structure, content, processes and system of the healthy workplace concept. The models include both the *content* of the issues that should be addressed in a healthy workplace, grouped into four large "avenues of influence", and also the *process* – one of continual improvement – that will ensure success and sustainability of healthy workplace initiatives. While the models can be demonstrated graphically, as is done on page 3, the review includes descriptions and explanations of what the models represent and how they work.

WHO intends that this document will be followed by practical Guidance documents tailored to specific sectors and cultures, which will summarize the review and provide practical assistance to employers and workers and their representatives for implementing healthy workplace policies in an enterprise.

The background document is organized into nine chapters, as follows:

Chapter 1 examines the question, "Why develop a framework for healthy workplaces? Indeed, why be concerned about healthy workplaces at all?" Some answers are provided from ethical, business, and legal standpoints. A very brief outline of recent WHO global directives is provided.

Chapter 2 expands on the global picture and describes key declarations and documents agreed to by the world community through the WHO and ILO over the past 60 years, looking at both occupational health and safety, and health promotion efforts and initiatives.

Chapter 3 looks at the question, "What is a healthy workplace?" Some general definitions are provided from the literature, as well as the WHO definition developed for this document. Then perspectives and the work being done in this area in each of the six WHO Regions are summarized.

The WHO definition of a healthy workplace is as follows:

A healthy workplace is one in which workers and managers collaborate to use a continual improvement process to protect and promote the health, safety and well-being of workers and the sustainability of the workplace by considering the following, based on identified needs:
- *health and safety concerns in the physical work environment;*
- *health, safety and well-being concerns in the psychosocial work environment including organization of work and workplace culture;*
- *personal health resources in the workplace; and*
- *ways of participating in the community to improve the health of workers, their families and other members of the community.*

Chapter 4 examines the complex interrelationships between and among work, the physical and mental health of workers, the community, and the health of the enterprise and society. This is a key chapter that supports with hard scientific evidence both the ethical case for a healthy workplace and the business case. It begins to flesh out the details of which factors under the control of employers and workers affect the health, safety and well-being of

workers and the success of an enterprise. These factors provide the primary basis for the framework.

Chapter 5 discusses the issue of evaluation. While there are many things employers and workers can do, how do they know which ones will be the most effective and cost-effective? This chapter looks at some of the issues related to the quality of published studies and evidence.

Chapter 6 then examines the scientific evidence for interventions that work and those that do not. Given the discussion about evaluation literature in the previous chapter, this section provides primarily evidence from systematic reviews of the literature.

Chapter 7 discusses the "how to" of creating a healthy workplace, and introduces the concept of continual improvement or OSH management systems. It also includes a discussion of some of the key features of the many continual improvement models; and examines the importance of integration.

Chapter 8 takes a step back from the framework and looks at healthy workplace issues in the "big picture" – the global legal and policy context. Clearly, while this document is focusing on things employers and workers can do, the success of their efforts cannot help but be influenced, for better or for worse, by the external regulatory and cultural context of the country and society in which they operate. This chapter discusses legislation and some of the standards setting bodies and their work as they relate to workplace health, safety and well-being.

Chapter 9 is the chapter that presents the model and framework for a healthy workplace that WHO has developed. It is intended as a natural outcome and conclusion to the synthesis of information and evidence presented in earlier chapters. Both the *content* of a healthy workplace programme in the form of four avenues of influence, and the suggested continual improvement *process* are discussed. The four avenues are represented by the four bullets in the proposed WHO definition of a healthy workplace, above. The eight steps in the continual improvement process are summarized as Mobilize, Assemble, Assess, Prioritize, Plan, Do, Evaluate, Improve. Both the content and the process, as well as core principles, are represented graphically in the model illustrated below.

In addition to the nine chapters, there are two annexes that include a list of acronyms and a glossary of terms.

Figure ES1
WHO Healthy Workplace Model: Avenues of Influence, Process, and Core Principles
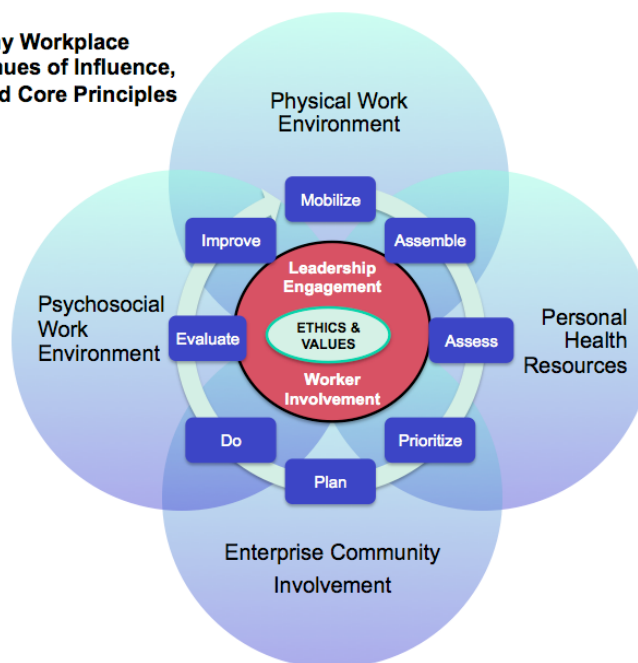
Chapter 1:
Why Develop a Healthy Workplace Framework?

To answer this question, perhaps another question should be answered first: why bother with healthy workplaces at all? While it may be obvious self-interest for workers and their representatives to want a healthy workplace, why should employers care? There are several answers to that.

A. It is the Right Thing to Do: Business Ethics

Every major religion and philosophy since the beginning of time has stressed the importance of a personal moral code to define interactions with others. The most basic of ethical principles deals with avoiding doing harm to others. Beyond that, in different cultures or different times, there have been, and continue to be, many differences in what is considered moral behaviour. One clear example is the attitudes towards and treatment of women in different times and cultures. Nevertheless, within any one culture there are underlying beliefs about what kind of behaviour is considered good and right, and what is considered wrong. It has been an unfortunate but common occurrence however, for these moral codes to be kept in the realm of "personal" codes, and not always applied to business dealings.

In recent years, more attention has been paid to business ethics, in the wake of Enron, WorldCom, Parmalat, and other accounting scandals. These highly publicized events highlighted the harmful impact on people and their families, and have caused a general outcry for a higher ethical standard of conduct for businesses. Trade unions have done their best for decades to point out the weaknesses in the moral codes of many employers, by linking business behaviours to the real-life suffering and pain of workers and their families.

The United Nations Global Compact is an international leadership platform for businesses that recognizes the existence of universal principles related to human rights, labour standards, the environment, and anti-corruption. At present there are over 7700 businesses from over 130 countries that have participated, to advance their commitment to sustainability and corporate citizenship.[1]

At the XVIII World Congress on Safety and Health at Work held in Seoul, Korea in 2008, participants signed the *Seoul Declaration on Safety and Health at Work,* which specifically asserts that entitlement to a safe and healthy work environment is a fundamental human right.[2]

Clearly, creating a healthy workplace that does no harm to the mental or physical health, safety or well-being of workers is a moral imperative. From an ethical perspective, if it is considered wrong to expose workers to asbestos in an industrialized nation, then it should be wrong to do so in a developing nation. If it is considered wrong to expose men to toxic chemicals and other risk factors, then it should be considered wrong to expose women and children. Yet many multinationals manage to compartmentalize their ethical codes to allow export of the most dangerous conditions or processes to developing countries where attitudes towards human rights, discrimination or gender issues may put workers at increased risk.[3,4,5] In this way they are able to take advantage of lax or non-existent health, safety and environmental laws or lax enforcement of the laws, to save money in the short term, in what has been dubbed "the race to the bottom."[6]

On the other hand, many employers have recognized the moral imperative and have gone above and beyond legislated minimum standards, in what is sometimes called Corporate Social Responsibility. Many case studies exist that provide excellent examples of enterprises that have exceeded legal requirements, to ensure that workers have not

only a safe and healthy work environment, but a sustainable community as well.

B. It is the Smart Thing To Do: The Business Case

The second reason that creating healthy workplaces is important is the business argument. It looks at the hard, cold facts of economics and money. Most private sector enterprises are in business to make money. Non-profit organizations and institutions are in business to be successful at achieving their missions. All these workplaces require workers in order to achieve their goals, and there is a strong business case to be made for ensuring that workers are mentally and physically healthy through health protection and promotion. Figure 1.1 summarizes the evidence for the business case.[7] This is expanded upon at length in

Chapter 4, Section B, How Worker Health Affects the Enterprise, and Section C, How

> *"Employers are recognizing the competitive advantage that a healthy workplace can provide to them, in contrast to their competition, who would feel that a healthy and safe workplace is just a necessary cost of doing business."*
> *Interview #3 Canada, OSH*

Worker Health and the Community are interrelated. There is a wealth of data demonstrating that in the long term, the most successful and competitive companies are those

Figure 1.1 The Business Case in a Nutshell
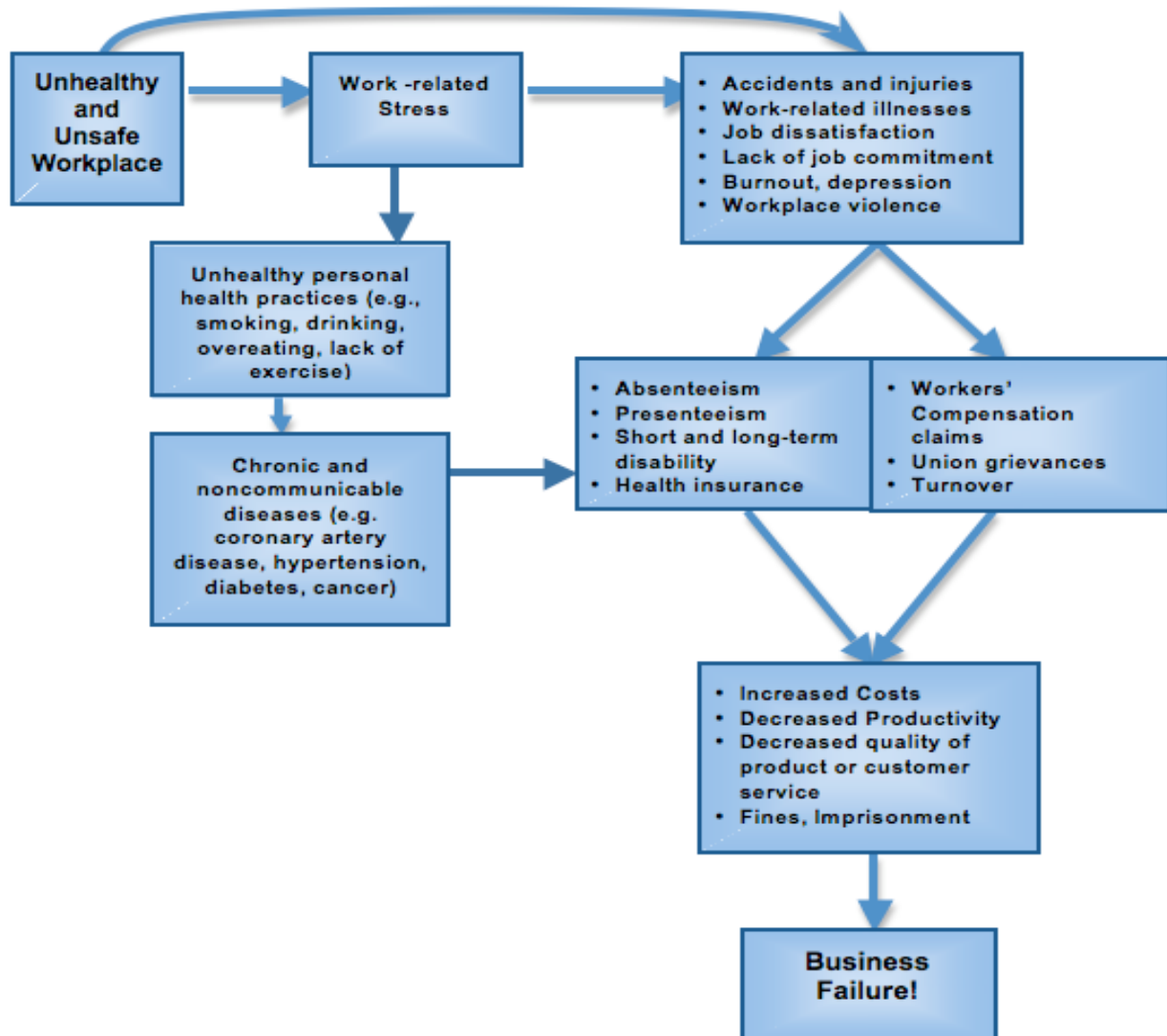
that have the best health and safety records, and the most physically and mentally healthy and satisfied workers.[8]

C. It is the Legal Thing to Do: The Law

If sections A and B above represent the "carrot" for creating a healthy workplace, this is the "stick." Most countries have some legislation requiring, at a minimum, that employers protect workers from hazards in the workplace that could cause injury or illness. Many have much more extensive and sophisticated regulations. So complying with the law, and thus avoiding fines or imprisonment for employers, directors and sometimes even workers, is another reason for paying attention to the health, safety and well-being of workers. The legislative framework varies tremendously from country to country, however. This aspect will be discussed at some length in Chapter 8.

D. Why a Global Framework?

Given the ethical, business and legal reasons for creating healthy workplaces, why then is a global framework and guidance required? A look at the global situation reveals that many, possibly most, enterprises/organizations and governments have not understood the advantages of healthy workplaces, or do not have the knowledge, skills or tools to improve things.

There is widespread agreement among global agencies, including the World Health Organization (WHO) and the International Labour Organization (ILO) that the health, safety and well-being of workers, who make up nearly half the global population, is of paramount importance. It is important not only to individual workers and their families, but also to the productivity, competitiveness and sustainability of enterprises/ organizations, and thus to the national economy of countries and ultimately to the global economy.[9] The European Union stresses that the lack of effective health and safety at work not only has a considerable human dimension but also has a major negative impact on the economy. The enormous economic cost of problems associated with health and safety at work inhibits economic growth and affects the competitiveness of businesses.[10]

The ILO estimates that two million women and men die each year as a result of occupational accidents and work-related illnesses.[11] WHO estimates that 160 million new cases of work-related illnesses occur every year, and stipulates that workplace conditions account for over a third of back pain, 16% of hearing loss, nearly 10% of lung cancer; and that 8% of the burden of depression can be attributed to workplace risk.[12] Every three-and-a-half minutes, somebody in the European Union (EU) dies from work-related causes. This means almost 167,000 deaths a year in Europe alone, as a result of either work-related accidents (7,500) or occupational diseases (159,500). Every four-and-a-half seconds, a worker in the EU is involved in an accident that forces him/her to stay at home for at least three working days. The number of accidents at work causing three or more days of absence is huge, with over 7 million every year.[13]

Furthermore, these are only aggregate figures, with no breakdown by sex, age, ethnicity, immigrant status or other demographics. However, studies conducted at other scales indicate that work-related risks and health problems are not evenly distributed among all groups.[14,15,16] WHO recognizes this, stating in the *Global Plan of Action on Workers Health* (to be discussed later), "Measures need to be taken to minimize the gaps between different groups of workers in terms of levels of risk.… Particular attention needs to be paid to…the vulnerable working populations, such as younger and older workers, persons with disabilities and migrant workers, taking account of gender aspects."[17]

The ILO notes that, "Women's safety and health problems are frequently ignored or not accurately reflected in research and data collection. OSH inquiries seem to pay more attention to problems relating to male-dominated work, and the data collected by OSH institutions and research often fail to reflect adequately the

illnesses and injuries that women experience. In addition, precarious work is often excluded from data collection. Since much of women's work is unpaid, or in self-employment or in the informal economy, many accidents are simply not recorded."[18] The ILO states on its website that at present, only about 40% of countries report data on occupational injuries by sex.[19]

In recent years, globalization has played a major role in workplace conditions. While international expansion provides an opportunity for multinational corporations to export their good practices from the developed world into developing nations, all too often the reverse is true. As mentioned above, short term financial gains often motivate multinationals to export the worst of their working conditions, putting countless numbers of children, women and men at risk in developing nations.[20]

While these data are distressing enough, they only reflect the injuries and illnesses that occur in formal, registered workplaces. In many countries, a majority of workers are in the informal sector, and there is no record of their work-related injuries or illnesses.[21]

In 1995, the World Health Assembly of the World Health Organization endorsed the *Global Strategy on Occupational Health for All.* The strategy emphasized the importance of primary prevention and encouraged countries with guidance and support from WHO and ILO to establish national policies and programmes with the required infrastructures and resources for occupational health. Ten years later, a country survey revealed that improvements in healthy workplace approaches were minimal and further improvement was required. In May 2007, the World Health Assembly endorsed the *Global Plan of Action on Workers Health* (GPA) for the period 2008-2017 with the aim to move from strategy to action and to provide new impetus for action by Member States. This watershed document was the culmination of numerous other meetings on occupational health that are outlined in Chapter 2.

The GPA takes a public health perspective in addressing the different aspects of workers' health, including primary prevention of occupational risks, protection and promotion of health at work, work-related social determinants of health, and improving the performance of health systems. In particular, it set out five objectives: [22]

  Objective 1: To devise and implement policy
        instruments on workers' health
  Objective 2: To protect and promote health at
        the workplace
  Objective 3: To promote the performance of
        and access to occupational health
        services
  Objective 4: To provide and communicate evidence
        for action and practice
  Objective 5: To incorporate workers' health into
        other policies.

It is clear that all of these objectives are linked and overlap, as they should. For example, in order to "protect and promote health at work" (Objective 2) it is necessary to have policy instruments on workers' health at the national and enterprise level (Objective 1) and for workers to have access to occupational health services (Objective 3), and for all this to be backed up by the best scientific evidence (Objective 4). In addition, workers' health must be integrated into educational, trade, employment, economic development and other policies (Objective 5) in order to truly protect and promote workers' health (Objective 2).

The GPA provides a political framework for the development of policies, infrastructure, technologies and partnerships for linking occupational health with public health to achieve a basic level of health for all workers.[23] It calls on all countries to develop national plans and strategies for its implementation. As such, nations and enterprises look to WHO for some guidance in wading through the overabundance of information and recommendations referred to above. Therefore, under Objective 2, WHO has developed this framework and associated guidance for a healthy workplace.

By raising this as a global issue, WHO also hopes to get a 'critical mass' in the movement towards healthy workplaces to create a tipping point. If enough countries 'sign up' for healthy workplaces, then:

- Countries can get encouragement and practical help from one another, learn from one another's good practices;
- Poor practices in some countries will not be an excuse for poor practices in others, in the name of 'fair competition'; and
- There will be national 'peer pressure' between nations and enterprises, as it becomes more and more the *norm* to have healthy workplaces that go far beyond legal minimums.

One word of caution is warranted, however. This framework is not intended as a "one size fits all" template, but rather a statement of principles and guidelines. Naina Lal Kidwai, Chairperson of India's National Committee on Population and Health notes:

"… there can be no template of healthy workplace practices that can be followed. While there are a few basic guidelines that every organization needs to follow, the concept of an ideal workplace will differ from industry to industry and company to company. A healthy workplace strategy must be designed to fit the unique history, culture, market conditions and employee characteristics of individual organizations."[24]

It is intended that this framework will provide that flexible guidance, which can then be adapted to any workplace setting.[*]

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[*] WHO intends to publish additional materials in the future that will provide enterprises with practical guidance specific to sector, enterprise size, country and culture.

Chapter 2:
History of Global Efforts
To Improve Worker Health

The origin and evolution of efforts to improve worker health, safety and well-being are complex, as ideas about how best to achieve the WHO's and ILO's goals for workers have evolved over time. WHO and ILO joined forces very soon after WHO's formation, in the Joint ILO/WHO Committee on Occupational Health, recognizing the importance of these issues. It is relatively recently, however, that health promotion has specifically been linked to the workplace. For several decades, health promotion activities and occupational health activities operated in two somewhat separate streams. In recent years the streams have converged, and the linkages have become stronger, both within WHO and between WHO and ILO.

A brief chronology and description of key events and declarations is as follows:

1950 – Joint ILO/WHO Committee on Occupational Health. Soon after the formation of the World Health Organization, this joint committee initiated collaboration between the two organizations, which has continued to the present day.

1978 – Declaration of Alma-Ata.[25] After the International Conference on Primary Health Care held in Alma Ata in the former Soviet Union, this Declaration was signed by all participants. It "heralded a shift in power from the providers of health services to the consumers of those services and the wider community"[26] and in noting that primary health care brought national health care "as close as possible to where people live and work"[27] rather than only in hospitals, provided the right environment for the concepts of health promotion and occupational health and safety to develop and grow.

1981 – ILO Convention 155.[28] Passed at the 67th ILO session in 1981, this Occupational Health and Safety convention requires Member States to establish national policies on occupational health

and safety, dealing primarily with the physical work environment, and to establish legislative and infrastructure support to enforce health and safety in workplaces. The aim of the suggested policy is to prevent accidents and injury to health arising out of work, by minimizing the causes of hazards inherent in the working environment. To date 56 nations have ratified it.

1985 – ILO Convention 161.[29] Four years later at the 71st session of the ILO, this Occupational Health Services Convention was approved. This resolution calls on employers in Member States to establish occupational health services for all workers in the private and public sectors. These services would include surveillance of hazardous situations in the environment, surveillance of worker health, advice and promotion related to worker health including occupational hygiene and ergonomics, first aid and emergency health services, and vocational rehabilitation. This Convention has been ratified by 28 countries to date.

1986 – Ottawa Charter.[30] This key document, generated at WHO's First International Conference on Health Promotion, in Ottawa, Canada, is generally credited with introducing the concept of health promotion as it is used today: "the process of enabling people to increase control over, and to improve, their health." It further legitimized the need for intersectoral collaboration, and introduced the "settings approach." This included the workplace as one of the key settings for health promotion, as well as suggesting the workplace as one area where a supportive environment for health must be created.

1994 – Global Declaration of Occupational Health for All.[31] Over the years, a network of over 60 WHO Collaborating Centres in Occupational Health has developed. These

Centres hold an international meeting approximately every two years to ensure coordinated planning and activities. At the Second Meeting of WHO Collaborating Centres in Occupational Health, held in Beijing in 1994, a Declaration on Occupational Health for All was signed by the participants. One notable aspect of this Declaration was the clear statement that the term, "occupational health" includes accident prevention (health & safety), and factors such as psychosocial stress. It urged Member States to increase their occupational health activities.

1996 – Global Strategy on Occupational Health for All.[32] The Global Strategy drafted at the 1994 Beijing meeting of Occupational Health Collaborating Centres was approved by WHA in 1996. It presented a brief situation analysis, and recommended 10 priority areas for action. Priority Area 3 pointed out the importance of using the workplace to influence workers' lifestyle factors (health promotion) that may impact their health.

1997 – Jakarta Declaration on Health Promotion.[33] Signed after the Fourth International Conference on Health Promotion, this declaration reinforced the Ottawa Charter, but emphasized the importance of social responsibility for health, expanding partnerships for health, increasing community capacity and empowering individuals, and securing the infrastructure for health.

1997 – Luxembourg Declaration on Workplace Health Promotion in the European Union.[34] While each WHO Region has been active in some ways (see Chapter 3) in relation to workers' health, the European Member States' political activities in coming together in the European Union has accelerated their ability to work together on certain themes. The European Network for Workplace Health Promotion was formed in 1996, and at a meeting in Luxembourg the following year, passed this Declaration, which reported the group's consensus on the definition of Workplace Health Promotion (WHP). They defined WHP as *"the combined efforts of employees, employers and society to improve the health and well-being of people at work. This can*

be achieved through a combination of: improving the work organization and the working environment; promoting active participation; encouraging personal development." The subsequent text went on to make it clear that WHP included improvement of the physical and psychosocial work environment, and also the personal development of workers with respect to their own health, or traditional health promotion.

1998 – Cardiff Memorandum on WHP in Small and Medium-Sized Enterprises.[35] The European Network for WHP followed up on the Luxembourg Declaration by adopting this Memorandum that emphasized the importance of SMEs to the economy, and outlined the differences and difficulties in implementing WHP in SMEs. The Memorandum outlined priorities for the European nations to apply WHP in SMEs.

1998 – World Health Assembly Resolution 51.12.[36] The Fifty-first World Health Assembly passed a resolution (51.12) on health promotion endorsing the Jakarta Declaration, and called on the Director General of WHO to "enhance the Organization's capacity and that of Member States to foster the development of health-promoting cities, islands, local communities, markets, schools, ***workplaces*** [emphasis added] and health services."

2002 – Barcelona Declaration on Developing Good Workplace Health Practice in Europe.[37] This Declaration, following the 3rd European Conference on WHP, stressed, "there is no public health without good workplace health." It went so far as to suggest that the world of work might be the single strongest social determinant of health. It also noted the strong business case that exists for WHP. A clear message was the importance of having the occupational health & safety and public health sectors to work together on WHP.

2003 – Global Strategy on Occupational Safety and Health.[38] At its 91st annual

conference, the International Labour Organization endorsed this global strategy dealing with the prevention of occupational injuries and illnesses. The importance of using an OSH management system approach of continual improvement was stressed, as was the need, and a commitment, to take account of gender specific factors in the context of OSH standards.

2005 – Bangkok Charter for Health Promotion in a Globalized World.[39] This second charter was signed after WHO's Sixth Global Conference on Health Promotion. While noteworthy for several reasons, a significant one was a key commitment to make health promotion "a requirement for good corporate practice." For the first time, this explicitly recognized that employers/corporations should practice health promotion in the workplace. It also noted that women and men are affected differently, and these differences present challenges for creating workplaces that are healthy for all workers.

2006 – Stresa Declaration on Workers Health.[40] Participants at the Seventh Meeting of the WHO Collaborating Centres in Occupational Health at Stresa, Italy, in 2006 agreed on this statement, which expressed support for the draft Global Plan of Action on Workers Health. It specifically noted that "*There is increasing evidence that workers' health is determined not only by the traditional and newly emerging occupational health risks, but also by social inequalities such as employment status, income, gender and race, as well as by health-related behaviour and access to health services. Therefore, further improvement of the health of workers requires a holistic approach, combining occupational health and safety with disease prevention, health promotion and tackling social determinants of health and reaching out to workers families and communities.*"

2006 – ILO Convention 187.[41] This Promotional Framework for Occupational Health and Safety Convention was approved at the 95th session of the ILO in 2006. Designed to strengthen previous Conventions, this expressly urges Member States

to promote an OSH management systems approach with continuous improvement of occupational health and safety, to implement a national policy and to promote a national preventive safety and health culture.

2007 – Global Plan of Action on Workers Health. As noted in the first Chapter, this milestone document operationalized the 1995 Global Strategy on Occupational Health for All, providing clear objectives and priority areas for action.

Figure 2.1 shows the two parallel timelines for health promotion and occupational health. As noted above, the overlap between the two domains has become greater with the passage of time. Now "occupational health" activities are understood to include not only health protection, but also health promotion in the workplace; and "health promotion" is understood to be an activity that should include workplace settings for implementation.

Figure 2.1 Timeline Of Global Workplace Health Evolution.

Health Promotion		Occupational Health
	1950	Joint ILO/WHO Committee on Occ. Health
	:	
	:	
Declaration of Alma-Ata	**1978**	
	1979	
	1980	
	1981	ILO Convention C155 OH&S
	1982	
	1983	
	1984	
	1985	ILO Convention C161 OH Services
Ottawa Charter	**1986**	
	1987	
	1988	
	1989	
	1990	
	1991	
	1992	
	1993	
	1994	Global Declaration of OH for All
	1995	
	1996	Global Strategy of OH for All
Jakarta Declaration	**1997**	Luxembourg Declaration
WHA Resolution 51.12	**1998**	Cardiff Memorandum
	1999	
	2000	
	2001	
	2002	Barcelona Declaration
	2003	ILO Global Strategy on OSH
	2004	
Bangkok Charter	**2005**	
	2006	Stresa Declaration; ILO Convention C187 Promotion
	2007	Global Plan of Action
	2008	
	2009	

Chapter 3:
What is a Healthy Workplace?

A. General Definitions

Any definition of a healthy workplace should encompass WHO's definition of health: *"A state of complete physical, mental and social well-being, and not merely the absence of disease."*[42] Definitions of a healthy workplace have evolved greatly over the past several decades. From an almost exclusive focus on the physical work environment (the realm of traditional occupational health and safety, dealing with physical, chemical, biological and ergonomic hazards), the definition has broadened to include health practice factors (lifestyle); psychosocial factors (work organization and workplace culture); and a link to the community; all of which can have a profound effect on employee health.

The WHO Regional Office for the Western Pacific defines a healthy workplace as follows:

> *"A healthy workplace is a place where everyone works together to achieve an agreed vision for the health and well-being of workers and the surrounding community. It provides all members of the workforce with physical, psychological, social and organizational conditions that protect and promote health and safety. It enables managers and workers to increase control over their own health and to improve it, and to become more energetic, positive and contented."*[43]

The American National Institute for Occupational Safety & Health (NIOSH) has a WorkLife Initiative that "*envisions workplaces that are free of recognized hazards, with health-promoting and sustaining policies, programs, and practices; and employees with ready access to effective programs and services that protect their health, safety, and well-being."*[44]

Writing for Health Canada, GS Lowe differentiates between the concepts of a "healthy workplace" and a "healthy organization." He sees the term healthy workplace as emphasizing more the physical and mental well-being of employees, whereas a healthy organization has "…embedded employee health and well-being into how the organization operates and goes about achieving its strategic goals."[45]

Grawitch et al. have noted that the definition of a healthy workplace depends on the messenger. They state that the Families and Work Institute believes that the key to a healthy workplace depends on the introduction of effective work-life balance interventions; the Institute for Health and Productivity Management emphasizes the role of health and wellness programmes targeted at specific physical health risks of employees; and Fortune Magazine, with its 100 Best Places to Work list emphasizes the role of organizational culture, and uses company growth and stock performance as secondary indicators of effectiveness.[46]

A theme running through many articles and publications on healthy workplaces is the concept of inclusiveness or diversity. The discussion may have different foci – ethnicity,[47] gender,[48] disability[49] – but the concept is the same: a healthy workplace should provide an open, accessible and accepting environment for people with differing backgrounds, demographics, skills and abilities. It should also ensure that disparities between groups of workers or difficulties affecting specific groups of workers are minimized or eliminated

Benach, Muntaner and Santana, writing for the Employment Conditions Knowledge Network, introduced the concept of "fair employment" to complement the ILO's concept of decent work.[50] They define fair employment as one with a just relation between employers and employees that requires certain features be present:

- freedom from coercion
- job security in terms of contracts and safety
- fair income
- job protection and social benefits
- respect and dignity at work; and
- workplace participation

The ILO decent work concept and this fair employment definition tie into the principles promoted by the Global Compact. These principles link business ethics with human rights, labour standards, environmental protection and protection against corruption.[51]

B. The WHO Definition of a Healthy Workplace

Three things are clear from this small sampling of definitions of a healthy workplace, as well as others in the published literature:

1. Employee health is now generally assumed to incorporate the WHO definition of health (physical, mental and social) and to be far more than merely the absence of physical disease;
2. A healthy workplace in the broadest sense is also a healthy organization from the point of view of how it functions and achieves its goals. Employee health and corporate health are inextricably intertwined.
3. A healthy workplace must include health *protection* and health *promotion*.[*]

Discussions with healthy workplace professionals globally also indicate there is an important linkage and opportunity for interaction between the workplace and the community. As a result of extensive consultation with experts in the field, as well as reference to the Jakarta Declaration, the Stresa Declaration, The Global Compact and the Global Plan of Action for Workers Health, interactions with the community are therefore also considered in this document to be an essential component to be borne in mind when efforts are being made to create healthy workers and healthy workplaces. This is especially important in developing countries and with small and medium-sized enterprises (SMEs), where community resources (or lack of them) may have a significant impact on the health of workers.

Based on these considerations, the following is proposed as the WHO definition of a healthy workplace:

A healthy workplace is one in which workers and managers collaborate to use a continual improvement process to protect and promote the health, safety and well-being of all workers and the sustainability of the workplace by considering the following, based on identified needs:

- *health and safety concerns in the physical work environment;*
- *health, safety and well-being concerns in the psychosocial work environment including organization of work and workplace culture;*
- *personal health resources in the workplace; and*
- *ways of participating in the community to improve the health of workers, their families and other members of the community.*

This definition is intended chiefly to address primary prevention, that is, to prevent injuries or illnesses from happening in the first place. However, secondary and tertiary prevention may also be included by employer-provided occupational health services under "personal health resources" when this is not

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[*]See Annex 2, Glossary, for definitions of these terms. Or, for a thorough discussion of the differences between these terms and their areas of overlap, see Madi HH and Hussain SJ. Health protection and promotion: evolution of health promotion: a stand-alone concept or building on primary health care? *Eastern Mediterranean Health Journal* 2008,14(Supplement):S15-S22. http://www.emro.who.int/publications/emhj/14_S1/Index.htm accessed 17 July 2009.

available in the community. In addition, it is intended to create a workplace environment that does not cause re-injury or reoccurrence of an illness when someone returns to work after being away with an injury or illness, whether work-related or not. And finally, it is intended to mean a workplace that is supportive and accommodating of older workers, or those with chronic diseases or disabilities.

Subsequent chapters will provide evidence and context for this definition, and conclude in Chapter 9 by suggesting a model, and expanding on the content and process for implementing it in enterprises.

C. Regional Approaches To Healthy Workplaces
WHO's six regions have interpreted the concept of healthy workplaces in differing ways, as set out below.

1. Regional Office for Africa (AFRO) A WHO/ILO Joint Effort on Occupational Health & Safety in Africa began in 2000 with many partners (WHO, ILO, EU, USA, ICOH) for the purposes of information sharing, capacity building, and policy and legislation in the area of workers' health and safety. Early initiatives involved training on pesticides, the informal economy and setting up a website. An important success factor was the signing of a letter of support from the WHO Regional Directors of AFRO, EMRO and ILO Regional Directors for Africa.[52]

> *"A healthy workplace is a workplace that enhances health, broadly speaking, and looking at the determinants of health broadly rather than looking narrowly at the traditional occupational health and safety issues. And all this extends to the community as well, looking at the families and the communities that provide the workers and in our country we have important issues such as HIV."*
> *Interview #15, South Africa, Physician, OH*

In 2005, an international meeting was held in Benin to review the status of occupational health and safety in Africa.[53] In response to stimulus from the Joint WHO/ILO effort, many African nations are in the process of policy formulation and planning for national strategies. Inadequate human resources, insufficient level of collaboration between ministries of health and labour, weak policies, lack of essential preventive and curative services, and insufficient budget were determined to be barriers to developing and implementing consistent and satisfactory policies and services. Some countries were looking at the ILO's WISE (Work Improvement in Small Enterprises)[54] and WIND (Work Improvement in Neighbourhood Development)[55] programmes that have been successfully implemented in the Western Pacific and South-East Asia regions (discussed in more detail in the Western Pacific section, below).

Participants in the meeting from eight African countries agreed that a Regional action plan on occupational health and safety was required.

There is a separate Regional health promotion programme and strategy.[56] While health-promoting schools is one area of focus, at this time there are no workplace-related foci related to health promotion. In general, workplace efforts to date in the African Region are focused on the physical work environment, addressing traditional occupational health and safety issues.

A 2009 global survey of large employers by Buck Consultants found that among African respondents to the survey (primarily South Africa), 32% provided some form of "wellness" or health promotion programmes for their employees, which is lower than other parts of the world surveyed. The most common programme offered was biometric health screenings (by 82% of respondents) and the least common was caregiver support (26%). On-site medical facilities were provided by 56% of respondents.[57]

2. Regional Office for the Americas (AMRO)

The Pan American Health Organization (PAHO) serves as the WHO Regional Office for the Americas. In 2001, AMRO developed and published a Regional Plan on Workers' Health.[58] This outlined the framework for improving workers' health specifically in the Americas. Similar to the Global Plan of Action on Workers' Health, the objective of the Regional Plan is to encourage member states to take action on physical, biological, chemical and psychosocial factors, as well as organizational factors and dangerous production processes that adversely affect workers' health in both the formal and informal sectors. The values of equity, excellence, solidarity, respect, and integrity are underscored in the Regional Plan, as well as the "3 Ps" of prevention, promotion, and protection of all workers.

The priorities of the Regional Plan include:
- strengthening the countries' capabilities to anticipate, identify, evaluate and control or eliminate risks and dangers in the workplace;
- promoting the update of workers' health legislation and regulations, and the establishment of programmes designed to improve the quality of the work environment;
- fostering programmes for health promotion and disease prevention in occupational health and encouraging better health services for the working population.

AMRO supports and facilitates many region-wide initiatives related to improving workers' health, currently including projects that focus on:[59]
- health of health-care workers (focusing on transmission of blood-borne pathogens and other communicable diseases, including pandemic H1N1/09 influenza
- elimination of silicosis
- elimination of asbestosis
- preventing and controlling occupational and environmental cancers

Details about AMRO activities in this area are posted on a PAHO website specifically dedicated to Workers' Health. Its goal is "to disseminate accurate and thorough information to anyone interested in Workers' Health in the Americas."[60]

AMRO has a strong relationship with the Cochrane Collaboration, and in particular the occupational health section. (More will be discussed relating to the Cochrane Collaboration in Chapter 5.)

In addition to what AMRO is doing region-wide, individual countries are addressing the issues in various ways. The United States and Canada vary considerably in their approach to workplace health, probably in part due to their very different primary health care systems.

United States: In the USA, where there is some inequity in access to primary health care, employers have taken on a significant role in providing or paying for health care or health care insurance for their employees. Adding in the litigious nature of American medicine, many doctors fearing lawsuits practice "defensive medicine," which drives up the cost of that health care dramatically.[61] Employers have therefore recognized the high cost of poor health and chronic diseases among their employees.

The recent Buck Survey mentioned above found that for American companies, "reducing health care or insurance costs" was the number one reason for providing wellness programmes for employees. All other parts of the world cite improvements in worker health or morale, and decreases in absenteeism and presenteeism as their number one reasons.[62]

Possibly for this reason, American efforts towards healthy workplaces have focused on two areas:

- traditional occupational health and safety, dealing with the physical work environment. This is in response to strong labour legislation and enforcement through the Occupational Safety and Health Administration (OSHA).
- workplace health promotion, in the restricted* sense of encouraging employees to adopt healthy lifestyle practices on an individual basis, and thereby reduce health care costs that employers must bear.

The well-recognized Corporate Health Achievement Awards programme, sponsored by the American College of Occupational and Environmental Medicine, gives prestigious awards to organizations that meet its criteria for a healthy workplace. These criteria are based primarily on these two areas, physical health and safety, and health promotion.[63]

In 2009, the American College of Sports Medicine established the International Association for Worksite Health Promotion as an affiliate.[64] This organization advances concepts related to individual health improvement within enterprises.

The recent global survey referred to above found that among American respondents to the survey, most provided some form of "wellness" or health promotion programmes for their employees. The most common programme offered was immunizations/flu shots (by 89% of respondents) and the least common was a cycle-to-work programme (13%). On-site medical facilities were provided by 25% of respondents.[65]

An exception to this overall national approach has been taken by the health care sector in America. In recent years they have realized the importance of psychosocial factors, organizational culture and work organization, and have come out with criteria that include these areas to ensure a healthy workplace for nurses and other health care professionals.[66] And as far back as the 1980s a group of American hospitals became known as "Magnet Hospitals" that were successful in recruiting and retaining nurses during a national nurses' shortage. The characteristics of these hospitals were later formalized by the American Nurses Credentialing Centre to form a Magnet recognition programme for hospitals. These characteristics include many items related to the organization of work and the psychosocial work environment.[67]

NIOSH has for some time emphasized a comprehensive approach to workplace health. In general, American business has moved in recent years to a more holistic approach.

> *"I believe healthy workplace represents a workplace where physical harm and physical injury as well as mental harm and mental injury are being managed and reduced. I think it also incorporates a third component and that is the wellness component of workplace parties so what are we doing to help employees achieve the lifestyle which would be most beneficial to their health."*
> *Interview #3, Canada, OSH Specialist*

Canada: Canada has taken a different approach. In the 1970s Health Canada developed a comprehensive model called the Workplace Health System, which proposed a three-pronged approach to healthy workplaces.[68] This involved three "avenues of Influence" by which the employer could influence a

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* The term "restricted" is used to avoid confusion with the more comprehensive definition of workplace health promotion used by ENWHP, described in the section below on the European Region.

worker's health and well-being: the physical and psychosocial work environments, personal health resources, and personal health practices. The model was subsequently modified and adopted by the National Quality Institute, to form the basis for the Canada Awards for Excellence, Healthy Workplace.[69] The IAPA (Industrial Accident Prevention Association), a Canadian WHO Collaborating Centre in Occupational Health, played a leadership role by facilitating meetings of three Ontario Ministries (Health, Labour, and Health Promotion), as well as other Canadian stakeholders, in which they all agreed to promote a similar model to all their members and clients.[70,71] This model has been expanded upon in a number of IAPA publications.[72,73] The three avenues are now generally agreed to comprise occupational health & safety, organizational culture, and personal health resources.

In both Canada and the USA, the American Psychological Association has in recent years developed and implemented the Psychologically Healthy Workplace Awards, which are mostly based on the psychosocial work environment (including organizational culture, and organization of work.) Their main criteria for a healthy workplace are in five key areas: employee involvement, work-life balance, employee growth and development, health and safety, and employee recognition.[74]

The Buck Survey survey of large employers found that among Canadian respondents to the survey most provided some form of "wellness" or health promotion programmes for their employees. The most common programme offered was immunization's/flu shots (by 81% of respondents) and the least common was personal health coaching (4%). On-site medical facilities were provided by 17% of respondents.[75]

Brazil: One of the most comprehensive approaches to worker health in AMRO is being taken in Brazil. SESI (Serviço Social da Indústria), a WHO Collaborating Centre in Occupational Health works with Brazilian industry in 27 states to help reduce occupational injuries and illnesses, and to improve worker lifestyles through leisure activities. They do this through training, consulting and providing direct medical services for workers. In addition, SESI collaborates with other Latin American countries to address mental health issues, in particular drug and alcohol abuse among workers.[76] In addition to SESI, Brazil has ABQV (Associação Brasileira de Qualidade de Vida), the Brazilian Quality of Life Association. It is a national non-profit organization that facilitates the networking of private and public enterprises, communities, and health professionals all over the country, with the purpose of encouraging and helping organizations to implement wellness and quality of life interventions for their employees.[77]

A recent global survey of large employers found that among Latin American respondents to the survey (primarily Brazil), 44% provided some form of "wellness" or health promotion programmes for their employees. The most common programme offered was immunizations/flu shots (by 73% of respondents) and the least common was a cycle-to-work programme (5%). On-site medical facilities were provided by 59% of respondents.[78]

> *"So I see the healthy workplace as a broad concept which will improve the health of the workers, not only directly at the workplace, but using workplace as an excellent contact point with health - personal health - to approach them and to promote healthy lifestyles."*
> *Interview #1, Egypt, OHS Professional*

3. Regional Office for the Eastern Mediterranean (EMRO)
In 2005 a conference was attended by 16 countries in the WHO Eastern Mediterranean Region to discuss the status of occupational health services in the Region.[79] It had been agreed by Member States in the past that the primary health care systems were probably the best positioned to provide occupational

health services. It was noted that most countries were making progress towards the provision of basic occupational health services within the primary health care systems, but there were vast differences among countries. In addition, the focus of the services provided is mainly curative or tertiary prevention. Member States identified barriers to improving coverage of occupational health services as lack of enabling legislation, lack of standards and expertise, lack of coordination (and sometimes conflict) between the concerned authorities (notably the ministries of health and labour), lack of participation from employers' organizations and NGOs, insufficient financial and human resources and the lack of educational programmes to develop human expertise.

In responding to the GPA, a regional workshop on developing national strategies and plans of action on workers' health was organized by the Region in May 2008. The most important outcome of this workshop was the adoption of the suggested regional framework for implementing GPA for the period 2008-2012, which underlined the importance of adoption of the healthy workplaces initiative as one of the main strategic directions. Based on WHO efforts, the 3rd Arabian Conference on occupational safety and health, organized by the Arab Labour Organization in November 2008, adopted the healthy workplaces initiative officially in the Manama Declaration*.[80]*

In 2008 the Region published a health promotion strategy for the Eastern Mediterranean for the years 2006-2013. While it generally supports the settings approach for health promotion, it does not specifically link health promotion to the workplace.[81]

In 2009, the Ministers of Health of the Gulf Cooperation Council (GCC) endorsed the Gulf Strategy for Occupational Health and safety, which adopted the healthy workplaces initiative.

Individual countries have addressed workplace health in different ways. Since 2007, Oman has been a pioneer in EMRO, as shown by their facilitation of a partnership for healthy workplaces with the majority of companies working in the country.

Beginning in 1994, Pakistan was part of a pilot of an ILO-based programme with the acronym POSITVE (Participation Oriented Safety Improvements by Trade Union Initiative), which was quite successful in reducing workplace injuries and risk factors.[82]

As in the African Region, the workplace priorities at this time deal with the physical work environment, to eliminate or control physical health and safety hazards. The informal sector, gender issues, and small enterprises have been identified as of particular concern. A unique approach has been taken by the Region through the publication of a series of "*Health Education Through Religion"* booklets that discuss health promotion, primary health care, environmental protection and other health-related topics in the context of Islamic Law.[83]

4. Regional Office for Europe (EURO)
The European Region may have one of the most comprehensive, resource-rich and sophisticated, if not always unified, approaches to healthy workplaces. Many Member States are known globally for their strengths in this area, and provide the model for others. WHO Collaborating Centres in Occupational Health from this Region regularly provide assistance and support to other regions. The European Union (EU) has provided a unifying forum to facilitate the development of region-wide definitions, approaches, and standards. However, since countries in the Region are joining the EU over a period of years, differences among the early members and more recent members are emerging and will continue to challenge the consistency of approaches across the Region.

There are numerous groups and networks of European countries, enterprises and institutions that are addressing workplace health:

- Directorate General of Employment, Social Affairs and Equal Opportunities of the European Commission (EU)[84]
- Enterprise for Health.[85]
- European Agency for Safety and Health at Work, EU-OSHA (set up under the EU)[86]
- European Network Education and Training in Occupational Safety and Health (ENETOSH)[87]
- European Network for Workplace Health Promotion (ENWHP)[88]
- European Network of Safety and Health Professional Organisations (ENSHPO)[89]
- European Network of WHO Collaborating Centres for Occupational Health[90]
- European Network of WHO National Focal Points on Workers' Health[91]
- Eurosafe: European Association for Injury Prevention and Safety Promotion[92]
- Federation of European Ergonomics Societies (FEES)[93]
- Federation of Occupational Health Nurses within the European Union (FOHNEU)[94]

While each of these groups or networks has its own unique twist and emphasis, in total they provide a very comprehensive scope. Some deal with the more traditional aspects of occupational health and safety, addressing physical, chemical, biological, ergonomic and mechanical risks. Others focus more on the psychosocial environment and organizational culture. But all make a strong connection between the health of employees, the health of the enterprise, and the health of the community. For example, ENWHP has defined Workplace Health Promotion as*: "the combined efforts of employers, employees and society to improve the health and well-being of people at work. This is achieved through a combination of:*

- *improving the work organisation and the working environment*
- *promoting the active participation of employees in health activities*
- *encouraging personal development"*[95]

This interpretation goes on to say that activities for workplace health promotion include corporate social responsibility, lifestyles, mental health and stress, and corporate culture, including leadership and staff development.

The 2009 Buck Survey of large employers found that among European respondents, 42% provided some form of "wellness" or health promotion programmes for their employees. The most common programme offered was gym/fitness memberships (by 71% of respondents) and the least common was vending machines with healthy foods (15%). On-site medical facilities were provided by 54% of respondents.[96]

5. Regional Office for South-East Asia (SEARO)

A Regional Strategy for Occupational and Environmental Health has been established, after the WHO Regional Office for South-East Asia realized in 2002 that this region has the highest regional burden of disease attributable to occupational risk factors. These factors include workplace injuries, workplace exposure to carcinogens, dust, noise, and ergonomic factors.[97] The Regional Strategy is focused on developing national policy and plans of action, with special emphasis on the informal sector. The emphasis is on providing basic occupational health services through linkage with the primary health care system.

A separate Regional Strategy for Health Promotion was developed by SEARO in 2005 and reconfirmed in 2008. The strategy does not particularly emphasize links with the workplace, except as one of a number of "settings-based" approaches.[98]

"To ensure that the workers go home as healthy and safe as they arrived to work. Workers should not experience risks from chemical and physical to psychosocial and bullying and so on. The most important is the control of risks and hazards at work."
Interview #23, Germany, OH

> *"A healthy workplace is often seen as a very controlling environment and it is often seen as one where the risks are controlled and inspections take place and hazards are prevented. But there is also the other understanding which is the health promoting environment where workplaces are giving opportunities for promoting health and preventing ill health."*
> *Interview #13, India, Public Health*

There is inter-regional cooperation at times with respect to workplace health, as a number of SEARO countries (Bangladesh, Nepal, Thailand) have participated in an EMRO (Pakistan) POSITIVE programme[99] and in WISE/WIND programmes organized by the Western Pacific Region.[100]

Some individual countries have embarked on comprehensive healthy workplace initiatives. For example, in 2007 the WHO Country Office in India supported a study by the Confederation of Indian Industry to examine and make recommendations regarding healthy workplaces in that country.[101] One of the key messages in that report is that the case for healthy workplaces should be made in the context of business excellence, because of the strong interconnection of worker health and organizational health. Other messages were the importance of worker participation, the need for a continual improvement process with ongoing measurement and evaluation, the importance of including health promotion in the workplace, and the need for corporate social investments in the community.

6. Regional Office for the Western Pacific (WPRO)

As one of the most ethnically and economically diverse regions, and with one-third of the global population, the Western Pacific Region of WHO has the opportunity to make a significant impact on global health. In 1999 the Region played a leadership role by developing a comprehensive guide for workplace health: *Regional Guidelines for the Development of Healthy Workplaces*.[102] This guideline is based on the definition of a healthy workplace noted above (first page of this chapter). It expands this definition to say that:

A healthy workplace aims to:
- *create a healthy, supportive and safe work environment;*
- *ensure that health promotion and health protection become an integral part of management practices;*
- *foster work styles and lifestyles conducive to health;*
- *ensure total organizational participation;*
- *extend positive impacts to the local and surrounding community & environment.*

The Guideline promotes five principles that must be ingrained in any healthy workplace programme:
1. *Comprehensive*: incorporating a range of individual and organizational interventions, which create a healthy and safe environment as well as behaviour change.
2. *Participatory and empowering*: workers at all levels must be involved in determining needs as well as solutions.
3. *Multisectoral and multidisciplinary cooperation*: to address the multiple determinants of health, a wide range of sectors and professionals must be involved.
4. *Social justice*: all members of the workplace must be included in programmes, without regard for rank, gender, ethnic group or employment status.
5. *Sustainability:* changes must be incorporated into the workplace culture and management practices in order to be sustained over time.

The Guideline then goes on to outline a continual improvement process that should be followed to implement the programme and ensure its success and sustainability. Suggestions are provided for actions at the national, provincial and local levels. It outlines an 8-step process for the workplace as follows:

1. Ensure management support
2. Establish a coordinating body
3. Conduct a needs assessment
4. Prioritize needs
5. Develop an action plan
6. Implement the plan
7. Evaluate the process and outcome
8. Revise and update the programme.

The Guideline continues with more detail, and includes case studies and tools that enterprises can use.

> *Healthy workplaces can be classified in 3 key areas: safety from machines or equipment; second, there should be no hazards or danger arising from physical, chemical and biological agents; and the third one is human factors - the workers should be free from the psychosocial factors - stress - and also there should be health from their lifestyle."*
> *Interview #11, Republic of Korea, OH Physician and Epidemiologist*

The Western Pacific Region then piloted the model in four workplaces in Malaysia[103,104,105,106] and two cities in Viet Nam, where the model was introduced into several hundred SMEs, and then evaluated after one year.[107] Results of the evaluations showed that it is possible to successfully use this model to improve both worker health and organizational effectiveness.

In addition to these activities using the WHO Guidelines, ILO has promoted community-based workplace improvement initiatives, such as WISE[108,109], WIND[110], and WISH (Workplace Improvement for Safe Home)[111] for SMEs and the informal sector in Asian countries. These models are all based on the idea of participatory action-oriented training programmes. The six principles are:

1. Build on local practice
2. Use learning-by-doing
3. Encourage exchange of experience
4. Link working conditions with other management goals
5. Focus on achievements
6. Promote workers' involvement

The WISE process begins with a series of short training programmes with small groups of owners/managers of SMEs. The physical work environment, the social work environment, and some personal health factors are covered in the interactive training, in which participants are encouraged to share ideas and problem-solve together. This is followed by the use of a WISE action-checklist in the workplaces, setting priorities and implementing solutions, followed by review and improvement. A key to success is the network of WISE trainers in the communities. Results have shown this method can result in very low-cost interventions that make significant improvements to the health and safety of the workplace.[112]

As with other Regions, individual countries have shown leadership. In WPRO, Singapore has shown how the government can play an active and successful role in workplace health promotion. The government's Health Promotion Board has a comprehensive Workplace Health Promotion Programme that provides resources, tools, and incentives for businesses to promote health effectively in the workplace.[113]

The 2009 Buck Survey of large employers found that among Asian respondents to the survey (primarily China, Japan and Singapore), 43% provided some form of "wellness" or health promotion programmes for their employees. The most common programme offered was biometric screening (by 87% of respondents) and the least common was a cycle-to-work programme (5%). On-site medical facilities were provided by 30% of respondents.[114]

Chapter 8:
Global Legal and Policy Context
of Workplace Health

As mentioned in Chapter 6, governments have more power than individual enterprises or workers, or even groups of enterprises or groups of workers. Differences in the distribution of political and economic power have a profound influence on the work environment and health of workers. Benach et al note, "*In scientific papers, reports or other publications on public health, little attention is paid to the political issues that shape health policy. Policies and interventions on health cannot be thought of as a financial or a technical value-free process; rather, it is influenced by the political ideology, beliefs and values of governments, unions, employers, corporations or scientific agencies, among others.*"[115]

Governments create the broader context of employment that influences not only working conditions, but also health inequities. Underlying everything is the way that governments view the health of their populace. If governments see differences in health as the inevitable result of individual genetic determinants, individual behaviours, or market conditions, they will respond in one way. If they see inequalities in health as an avoidable outcome that needs to be remedied, they will respond much differently.[116]

A report to the WHO Commission on Social Determinants of Health provides an excellent summary and discussion of the extremely broad and complex network of forces that interact to create and influence the health of workers.[117] The authors illustrate both a macro model, which includes power relations in the market, government and civil society, as well as social policies according to the degree of social protection and general view; and a micro model focusing more on employment and working conditions, which result in health inequities through a variety of behavioural, psychosocial and physiopathological pathways.

The report discusses the global situation by placing countries in one of nine categories, based on two factors: economic level (core, semi-periphery and periphery) and labour market policies (leading to more or less economic equality.) Table 8.1 illustrates where a number of nations fall according to this characterization.[118]

The authors of the report note that there is a strong correlation between labour market inequalities and poor health in the population. For example, among peripheral countries, higher labour market inequality results in higher probability of dying for men and women, higher infant and maternal mortality rates, and more deaths from cancer and injury. The implications for workplace health are clear. Think of an enterprise in Sweden that is attempting to become a healthy

*"I actually think the most important aspect is probably the national culture on health. I think the appreciation by people at work of all the work-related impact on health and the impact of health on work is absolutely crucial, but it is sometimes not facilitated by the **national** systems."*
Interview #36, Australia, OSH

workplace, with the cooperation and collaboration of workers and managers. Now think of the same type of enterprise in

Ethiopia, with the same commitment from the employer to create a healthy workplace.

Table 8.1 Countries Classified By National Economic Level And Labour Market Policies

	More Equal	**LABOUR MARKET**	**Less Equal**
Core	**Social Democratic Labour Institution**	**Corporatist Labour Institution**	**Liberal Labour Institution**
	Sweden, Denmark, Norway	France, Germany, Austria, Spain	US, UK, Canada
Semi-periphery	**Informal Labour Institution**	**Informal Labour Market, More Successful**	**Informal Labour Market, Less Successful**
	Chile, Hungary, Poland, Malaysia	Turkey, Thailand, South Africa, The Bolivarian Republic of Venezuela	Botswana, Gabon, El Salvador
Periphery	**Informal Market, More successful**	**Insecurity**	**Maximum Insecurity**
	Indonesia, India, Armenia, Pakistan, Bulgaria, Tajikistan, The Sudan, Sri Lanka	Nigeria, Jordan, Algeria, Morocco, Egypt, The Islamic Republic of Iran	Ethiopia, Ghana, Kenya, Bhutan, China, Bangladesh, Angola

Clearly, the enterprise in Ethiopia will face challenges that could scarcely be imagined in Sweden, and the overall level of health among workers will be widely disparate between the two enterprises, despite the best efforts of the workplace parties.

Governments and their agencies are in a position to provide comprehensive standards and laws, and to enforce them. Governments and their agencies can and do create the systems and infrastructure of primary health care, which in turn may provide many basic occupational health services functions. In other words, governments provide the conditions to facilitate and support worker health, or to create barriers and impediments. Clearly, the efforts of employers and workers to create healthy, safe and health-promoting workplaces pale in comparison to the power of the political will of a nation.

A. Standards-setting Bodies
There are a number of standards-setting bodies that have attempted to create standards for workplaces, and to have them

voluntarily adopted by governments and/or individual enterprises.

ILO Conventions
Since 1919, the International Labour Organization has approved and published nearly 190 Conventions, which are statements of legally binding international treaties related to various issues regarding work and workers. They cover a wide range of working conditions such as hours of work, the right of association for workers, child labour, employment discrimination, labour inspections, maternity leave, health and safety, workers' compensation, medical examinations, minimum working age, holidays with pay, and contracts of employment for indigenous workers. Once ILO has passed them, Member States are asked to ratify them, which means they are making a formal commitment to implement them. Ratification is an expression of the political will to undertake comprehensive and coherent regulatory, enforcement and promotional action in the area covered by the Convention. Ratifying nations are then required to make regular reports to ILO providing evidence of their

progress towards implementation of the Conventions.

In theory, looking at the Conventions and the countries that have adopted them should provide a good picture of international workplace health, safety and well-being legislation and policy. However, that is far from the truth. For one thing, few Conventions have been ratified by a majority of countries. In addition, some of the most sophisticated developed nations have ratified very few, while some developing nations have ratified most. Unlike rulings of the World Trade Organization (WTO), ILO conventions and recommendations do not include punitive measures for countries that fail to meet these standards.

Table 8.2 shows the percent of countries in the six WHO Regions that have ratified seven very basic ILO Conventions. It is clear that there is no consistency among regions, or even among topics, as to what is ratified and what is not. In some cases, countries with extremely good reputations for workplace health have "denounced" their earlier ratification, presumably because their legislation now goes beyond the demands of the Convention or because some aspects of their law are now in contravention to the Convention. As well, the ILO finds that many Member States may ratify a Convention but then fail to report any progress in actually implementing it within their country.[119]

WHO Framework Convention on Tobacco Control

This is the first, and to date the only, global convention negotiated under the auspices of WHO. Passed in 2003, the treaty requires the signatory countries, numbering 168 to date, to control tobacco advertising, sales, promotion and many other factors. Key to workers is the requirement to eliminate smoke exposure in workplaces or public places. The treaty states, "Each Party shall adopt and implement in areas of existing national jurisdiction as determined by national law and actively promote at other jurisdictional levels the adoption and implementation of effective legislative, executive, administrative and/or other measures, providing for protection from exposure to tobacco smoke in indoor workplaces, public transport, indoor public places and, as appropriate, other public places."[120] As with ILO Conventions, countries sign or ratify the convention voluntarily, but once signed, the treaty has legal standing and must be implemented.

ISO Standards

The International Organization for Standardization (ISO) is the world's largest developer and publisher of international standards. It is a non-governmental network of the national standards institutes of 162 countries. It develops standards that are based on the best scientific evidence available, and which are agreed to by consensus among all participating nations.

Table 8.2 Percent Of Countries In WHO Regions That Have Ratified Selected ILO Conventions[121]

ILO Conventions Ratified	Year Passed	AFRO (46)	AMRO (36)	EMRO (21)	EURO (53)	SEARO (11)	WPRO (27)	Ave
C14 - 24 hr of weekly rest for industrial workers	1921	74%	67%	57%	74%	55%	15%	57%
C17 – Workmen's Compensation for accidents	1925	48%	36%	33%	47%	9%	11%	34%
C18 – Workmen's compensation for occ. diseases	1925	43%	11%	24%	47%	45%	7%	30%
C103 – Maternity Protection, Revised	1952	7%	19%	5%	32%	9%	7%	13%
C155 – Occupational Safety & Health	1981	24%	19%	5%	51%	0%	26%	21%
C111 – Discrimination (Employment and Occupation)	1958	100%	92%	90%	98%	55%	48%	81%
C161- Occupational Health Services	1985	11%	19%	0%	30%	0%	0%	10%

Average		44%	38%	31%	54%	25%	16%	35%

ISO has developed over 17,500 standards to date, and normally adds about 1100 new standards each year. [122]With respect to workplace health and safety, ISO has developed at least 18 standards, and has another 13 under development. Topics include issues related to welding fume, nanoparticles, personal protective equipment such as safety boots or respirators, and exposure to noise, heat or cold. While the standards are voluntary, they often find their way into law in adopting countries.

Exposure Limits

There are a number of standards setting organizations that make recommendations for exposure limits. These are the levels of exposure to a chemical or other type of agent to which a worker can be exposed without serious injury. The term 'exposure limit' is a general term that covers the various expressions employed in national lists, such as "maximum allowable concentration", "threshold limit value" (TLVs), "biological exposure indices" (BEIs), "occupational exposure limits" (OELs), etc. These limits are determined for the average worker, and do not generally provide different recommended levels for those who may have differences in susceptibility due to sex or other factors such as age, etc.[123] The ILO notes that "OSH research should capture any sex-based disparities; yet, at present, there is a dearth of information about the different risks for men and women of exposure to certain chemicals."[124]

A large number of international, national and other authorities have published lists of legal or recommended exposure limits of various sorts, but usually only for chemicals. The most wide-ranging is the American Conference of Government Industrial Hygienists (ACGIH) list of Threshold Limit Values, updated annually, which includes recommended exposure limits values for airborne chemicals; biological monitoring limits; ionizing, non-ionizing and

optical radiation; thermal stress; noise; and vibration. The International Programme on Chemical Safety (IPCS) produces International Chemical Safety Cards, which are peer-reviewed assessment documents. International organizations, such as ISO and the International Atomic Energy Agency produce technical standards on the measurement and control of several ambient factors with the objective of their being transferred to regional or national legislation.[125]

These bodies set standards that are voluntary until accepted by a national government. Countries adopt and implement them in various ways, with or without modification. They may be implemented into regulations that have the force of law, or may remain as recommendations, depending on the government concerned.

B. Global Status of Occupational Safety & Health

In 2009 the ILO published a very comprehensive report on the global status of implementation of Convention Number 155, the Occupational Safety and Health Convention passed in 1981.[126] In reviewing the status of implementation of this Convention globally, the ILO notes that at the date of publication, only 52 countries (out of 183) or 28% had ratified this Convention. However, they note optimistically, more countries are continuing to ratify the Convention on an accelerating schedule.

This Convention adopts a comprehensive approach based on a cyclical process of development, implementation and review of a policy, rather than a linear one of laying down prescriptive legal obligations. It emphasizes the continual improvement approach to eventual total prevention of illness and injury to workers. This policy approach is recommended first for Member States to adopt at the national level, but also for enterprises to

adopt in their own internal programmes. It says that the Member States should "formulate, implement and periodically review" a national policy, following in general the OSH management, Plan-Do-Check-Act process discussed in Chapter 7.

Given the dynamic and progressive nature of the subject, any discussion of the degree of implementation of the Convention must be done over time. For the Member States that have ratified the Convention, the ILO's Committee of Experts has been able to follow this process, since reports are required annually. The 2009 report concluded that only 31 of the 52 ratifying countries are currently in complete compliance with the Convention, while the others are making progress towards full implementation. In addition, among countries that have not ratified the Convention, there are 25 nations that have developed national policies on occupational safety and health, and another 20 are in the process of developing such a policy.[127]

The ILO report describes in detail the many provisions and variations of health and safety policy and legislation that have been implemented globally. In their conclusions and recommendations, however, they note the lack of policy relating to the informal sector in most countries, and they urge governments to revise and extend their policies and legal framework to cover these workers. Other opportunities for improvement that are noted are strengthening labour inspectorates; improving data collection regarding occupational injuries and illnesses; increasing efforts to assess chemical hazards; assessing the impact of work organizational changes on workers' health; addressing newer issues such as MSDs and stress at work; and the continuing occurrence of very basic life-threatening situations faced by untrained workers in many countries.

A unique situation exists in Europe, where all the countries of the European Union are subject to laws and directives passed by the Union. There are many Directives relating to workplace health and safety, ranging from issues related to the physical work environment (e.g. Directive 90/270/EC Display Screens) to the psychosocial environment (Directive 2003/72/EC Employee Involvement) to basic employment conditions (Directive 93/104/EC Working Time).[128]

C. Workers' Compensation
When prevention efforts fail and a worker is injured or made ill at work and is unable to continue to work, he or she has an immediate financial situation to deal with, as income from work ceases. Many countries have installed "workers' compensation" systems to financially compensate injured workers while they are recovering, until they are able to go back to work. In the absence of such a system, workers with the means and the capacity to do so have often pursued litigation against the employer to recover some financial compensation for their injury. In many countries, employers and workers have chosen to endorse state or private insurance schemes to provide guaranteed income to injured workers, sometimes giving up the right to sue.

There are five ILO Conventions related to workers' compensation, which are listed in Table 8.3. Again, a minority of countries in the six WHO Regions has ratified these Conventions. And as in the discussion above related to occupational health and safety, merely looking at the countries that have ratified these conventions does not provide a complete picture.

A review of workers' compensation laws in Canada, the United States and Australia was recently published.[129] In these three countries, workers' compensation law is a provincial/state responsibility, so there is no national consistency. In all cases, however, workers' compensation systems are entirely under the control of legislative bodies and administrative agencies. The reviewers noted that workers' compensation law is inherently extremely

complex and it is difficult to compare   coverage in one jurisdiction to that in

Table 8.3 ILO Workers' Compensation Conventions and Ratifications

ILO Conventions Ratified	Year Passed	AFRO (46)	AMRO (36)	EMRO (21)	EURO (53)	SEARO (11)	WPRO (27)	Ave.
C12 – Workmen's Compensation in agriculture	1921	37%	58%	10%	55%	0%	26%	31%
C17 Workmen's Compensation for accidents	1925	48%	36%	33%	47%	9%	11%	34%
C18 Workmen's compensation for occupational diseases	1925	43%	11%	24%	47%	45%	7%	30%
C42 Workmen's compensation for occupational illnesses, revised	1934	17%	42%	5%	42%	18%	19%	24%
C121 Employment injury benefits	1964	7%	14%	5%	26%	0%	4%	9%
Average		40%	31%	24%	50%	22%	12%	26%

another, due to differences in terminology, differences in meanings for the same terms, and differences in calculations. For instance, consider two examples of jurisdictions where after a 3-day waiting period, a worker is paid 67% of his regular wages for temporary total disability benefits. The actual benefit payable may be modified by exemptions and qualifications related to:

- when the first day of disability begins
- how intermittent periods of disability are treated
- what compensation is included in calculating the original "regular wages"
- time period over which the average wage is calculated
- caps on wages earned by the injured worker
- differences in the calculation of the compensation rate
- reductions due to safety violations
- additions due to the worker's age, or the fact that he was an apprentice.[130]

Even though these three countries have systems that seem similar on the surface, there are a number of major differences, as indicated in Table 8.4. If there are this many differences among workers' compensation systems that are state-run, it is easy to imagine the vast differences that must occur between these and systems that are privately run. For example, in Ireland*,* employers must have workers' compensation insurance coverage for their employees, but they are free to choose from among a number of

private carriers and determine the levels of coverage. In addition, rather than wage replacement until the injury has healed and the worker can go back to work, in Ireland the compensation insurance schemes generally pay a lump sum based on the injury – X Euros for a broken leg, Y Euros for a broken finger, for example. As a result, there is no incentive for a worker to go back to work earlier if the injury heals quickly. Also, there is no limit on the right to sue, so if a worker does not like the amount of the settlement, he or she is free to sue the employer, and a significant percentage of workers' compensation claims go to litigation.[131]

It is clear that there are significant differences among workers' compensation systems even within English-speaking industrialized countries, so differences between systems in developing nations will probably be even greater, even when related ILO conventions have been ratified and implemented. The differences will have a large impact on:

- quality of medical care the injured/ill worker receives
- likelihood of the worker returning to work
- speed with which the worker returns
- direct and indirect costs to the employer
- likelihood of the injured worker being given meaningful work upon return to work

- financial security of the injured worker and his/her family while away from work

- financial security of the worker's family after a fatal injury.

Table 8.4 Comparison of Selected Workers' Compensation Features in USA, Canada, Australia[132]

Feature	USA (% of states)	Canada (% of responding provinces)	Australia (Victoria)
Options for employer to insure through	Private carriers	Exclusive state fund	Exclusive state fund
Self-insurance allowed?	Yes	No	Yes
Exclusion for small employers?	Yes, 36%	Yes, 28%	Yes
Exclusion for agriculture?	Yes, 72%	Yes, 57%	No
Exclusion for domestic workers?	Yes, 86%	Yes, 86%	No
Limitations on medical treatment?	Limits on chiropractic and physical therapy in about 18% of states	Limits on chiropractic and physical therapy in 14%	No number limits
Initial choice of treating physician	Employer chooses or provides a list of acceptable physicians in 42% of states	Worker chooses	Worker chooses
Length of time benefits paid for permanent disability	80% of states may pay for life	Till age 65	Till age 65
Coverage of mental stress claims when no physical injury	64% may pay under limited circumstances	86% of provinces cover under very limited circumstances	Yes
Maximum burial coverage after a workplace fatality	$800 - $15,000	$4000- no limit	$9,300

Quite apart from the actual legal provisions for workers' compensation that may exist in countries, the application of the laws is not always equitable.   Swedish research indicates that compensation claims for women are more likely to be turned down than they are for men, even when the type of injury is the same.[133,134]

D. Trade Union Legislation

In any enterprise, the owner or operator of the organization has greater power than any one worker. This makes it difficult for workers to make changes in health or safety conditions, if the employer is not interested. There are several ILO Conventions that aim to even out this power imbalance by giving workers a collective voice that is more powerful than the voice of a single worker. These conventions are related to the right of association of workers, and the rights to collective bargaining. Many of them have been ratified by a significant majority of countries:

- Convention 11, Right of Association (Agriculture), passed in 1921, ratified by 122 countries;
- Convention 87, Freedom of Association and Protection of the Right to Organize, passed in 1948, ratified by 150 countries;
- Convention 98, Right to Organize and Collective Bargaining, passed in 1949 and ratified by 160 countries.

The legislation covering formation of trade unions and collective bargaining varies tremendously from country to country, as does the percentage of the workforce that is unionized. For example, in Sweden, 75% of the workforce is represented by a union, while in Chile only 16% of non-agricultural workers are unionized.[135] Within the United States, an overall average of 12% of the workforce is unionized, with only 8% of the private sector represented by unions.[136]

In addition to trade unions, many countries, especially those in the European Union, have legislation related to the formation of Works Councils. These are "shop floor" organizations representing workers, which function as local/firm-level complements to national labour negotiations.

In most countries, it is primarily workers in larger enterprises that are represented by unions or works councils, while those in SMEs are much less likely to have formed associations. For example, a recent review of trade unions in various countries noted that in Japan, "trade unions are rarely formed in smaller companies, and the interests of such workers are often not sufficiently protected, thereby resulting in a great disparity of working conditions between those in large companies and those in other companies."[137] It would be fair to say this statement is typical of most countries.

As a result, legislators in some countries have taken innovative measures to ensure that workers at SMEs are protected and have a collective voice. For example, in Spain, while it is usually companies of 250 or more workers that have trade union representation, companies with 50 or more workers must set up a Works Council to represent workers. Enterprises with fewer than 50 employees may elect Employee Delegates to represent workers' interests. These Works Councils and Employee Delegates have broad legal rights and responsibilities to ensure worker participation and protection. In Sweden, there is a system of regional safety delegates, nicknamed "roving reps" who have earned a high degree of respect from both employers and employees, as they often provide the only health and safety information source for small employers.[138]

E. Employment Standards

There are many standards or regulations related to non-physical conditions in the workplace that might be considered basic conditions of work, and which can make the difference between jobs being healthy or being very bad for the worker's health. These include but are not limited to policies related to:

- Hours of work (number of hours, and also time of day, nights versus day shifts)
- Wages (relative to cost of living)
- Consecutive hours of rest per week
- Time allowed for meals
- Pregnancy/maternity leave
- Paid vacation
- Paid sick time
- Work on public holidays
- Availability of contracts
- Minimum working age
- Forced labour/forced overtime
- Equal pay for equal work
- Non-discrimination in hiring (on the basis of sex, disability, ethnicity, etc.)
- Accommodation of disabilities in the workplace

There are many ILO conventions that address this type of issue, and as with the cases discussed above, they are often ratified by a minority of countries. Having said that, many countries that have not ratified the conventions have very good laws relating to these factors. Whether or not they are enforced and applied consistently in any given country is another question. For example, ILO Convention 100 mandates equal pay for work of equal value between men and women, and the Convention has been ratified by over 90% of countries. Yet there is still a significant financial gap between men and women. The report goes on to say that "Contrary to popular belief, women's lower educational qualifications and intermittent labour market participation are not the main reasons for the gender pay gap. The gap is in fact a visible symptom of deep, structural sex discrimination."[139]

The convention dealing with discrimination in employment and occupation is Convention 111. As noted in Table 8.2, over 80% of countries have ratified this Convention, which forbids employment and occupational discrimination on the basis of ethnicity, gender

and other criteria. That is an impressive record – and yet the reality is that discrimination on the basis of social characteristics exists in greater or lesser degrees in most countries of the world. The ILO bluntly states that "No society is free from sex discrimination.... Enforcement of the laws in practice needs improvement."[140]

Even in countries that have enforced legislation related to these aspects of employment, they only apply to situations in which there is a formal employment relationship. Consequently, countries with a large proportion of informal workers will have a large proportion of workers who do not benefit from these laws. Since women are disproportionately represented in the informal sector, they tend to have less access to these laws and benefits.[141]

The Employment Conditions Knowledge Network compiled data regarding employment conditions in "wealthy" (meaning industrialized, developed) nations, and "poor" (meaning developing) countries. They put it into a historical context, to show the striking parallels between the conditions in many developing nations now, and in developed nations in the late 19th century. This information is provided in Table 8.5.[142]

Table 8.5 Work and the Protection of Workers' Health in Wealthy and Poor Countries, 1880-2007

	Wealthy Countries			Poor Countries
	1880	**1970**	**2007**	**2007**
Employment security and contingent work	No regulated job security and substantial contingent work	Secure jobs norm (except women), small contingent workforce	Decline in job security and growing contingent workforce	No regulated job security and large/growing informal sector
Minimum labour standards (wages and hours)	No minimum wage or hours laws (except children)	Universal minimum wage and hours laws	Minimum wage and hours laws, some erosion	No or ineffective minimum wage or hours laws
Union membership and collective bargaining	Union density low (<10%) and limited collective bargaining	Union density 25-50% and extensive collective bargaining	Substantial decline in union density and collective bargaining	Union density low, declining and limited collective regulation of work
Vulnerable workers	Extensive exploited vulnerable groups (women, immigrants, home-workers, young and homeless, old)	Still vulnerable groups (women, immigrants and home-workers) but more circumscribed	Expansion of vulnerable groups (women, home-workers, immigrants, homeless, old and young; child labour reemergence)	Highly exploited vulnerable groups (children, women, immigrants, homeless, indentured/forced labour)
Occupational health & safety law	Limited OHS law (factories, mines) and poorly enforced	Expansionary revision of OHS laws initiated	Expanded OHS law but under indirect threat	Little OHS law and hardly enforced (and then only in formal sector)
Workers' compensation system	No workers' compensation system	Mandated workers' comp/injury insurance system	Workers' comp/injury insurance; some erosion	Limited workers' compensation and only in formal sector
Public health infrastructure (water, hospitals, sewers etc.)	Little public health infrastructure – sewers, hospitals, water	Extended public health infrastructure, health insurance	Public health infrastructure – some erosion	Little public health infrastructure (hospitals, water/sewer) except in ex socialist countries, where being cut back
Social security	No age pension, social security,	Age pension/social security,	Age, disability and unemployment	No age pension, social security,

safety net (sickness, age, unemployment benefits)	unemployment benefits	unemployment benefits	benefits – cut back	unemployment benefits

F. Psychosocial Hazards

There are currently no ILO conventions or ISO standards dealing with psychosocial hazards in the workplace, and few countries have specific laws dealing with this area of workplace health. Some health and safety legislation, for example that of Peru, states that the employer must protect workers from various types of hazards, including psychosocial hazards; as well as identify, plan for and control workplace hazards, including psychosocial hazards.[143] However, no guidance is provided on how employers might do that, and no definitions of psychosocial hazards are provided.

The EU Framework Directive 89/391 provides a legal requirement for all employers in the EU to protect the occupational health & safety of workers from "all risks." This has been interpreted to include psychosocial risks by a group of European associations, who have published a framework agreement on work-related stress. They state that, "this voluntary European framework agreement commits the members of UNICE/UEAPME, CEEP and ETUC … to implement it [the framework agreement on work-related stress] in accordance with the procedures and practices specific to management and labour in the Member States and in the countries of the European Economic Area."[144]

The most common psychosocial hazard to have any related legislation associated with it is harassment or bullying in the workplace. In this case, the form of harassment most commonly mentioned is sexual harassment, with harassment on other grounds usually not mentioned. As noted in Chapter 4, women are disproportionately the victims of workplace sexual harassment, so this is an area where a particular group is far more vulnerable than others. A recent review of legislation in 35 countries in 5 of 6 WHO Regions (none from AFRO) revealed that there is some form of

explicit sexual harassment legislation in place in:[145]

- 7 of 8 AMRO nations
- 0 of 1 EMRO nations
- 13 of 15 EURO nations
- 1 of 2 SEARO nations
- 4 of 8 WPRO nations.

The Mental Health Commission of Canada commissioned a report in 2008 on the legal implications of harm being done to employees by stress at work in Canada. However, because of the way the law frames the issue, the inquiry was redefined as a search for legal principles governing liability for mental injury at work. This was released in 2009 as the report, "Stress at Work, Mental Injury and the Law in Canada: A discussion paper for the Mental Health Commission of Canada."[146] The author, Martin Shain, notes that there is a great deal of inconsistency between provinces in Canada, with one province (Saskatchewan) including mental issues in its occupational health and safety legislation; one province (Ontario) covering issues of harassment and discrimination under particularly robust human rights legislation; Quebec covering it under a specific Employment Standards law related to psychological harassment; and other provinces dealing with it through trade union grievances and litigation case law. He states that, "These uncertainties notwithstanding, one trend is clear: taken as a whole, the law is imposing increasingly restrictive limitations on management rights by requiring that their exercise should lead, at a minimum, to no serious and lasting harm to employee mental health."

After discussing the current Canadian situation, Shain makes a recommendation that Canada pursue a standards-based approach such as that seen in the United Kingdom. As mentioned in Chapter 4, the Health & Safety Executive (HSE) in the UK has developed and

implemented Management Standards that deal with a number of issues related to the organization of work. The Standards are intended to provide guidance to employers for the six areas HSE believes to be the most serious sources of workplace stress.[*]

The Standards in themselves have no legal force. HSE specifies a minimum percentage of the workforce that confirms the existence of a certain state of organizational affairs, a "threshold" within each standard. For example, the threshold for demands of the job is that at least 85% of employees should agree that they are able to deal with the demands of their job (as described in the criteria.) The percentages achieved in a workplace are measured by means of Indicator Tools or survey instruments provided to enterprises by HSE. There is a legal requirement for employers to assess risks to mental health using these instruments, but no legal guidance on what employers are to do with the results. In practice, the results of the surveys are educational for the employer, and HSE provides training and consultation to assist the employer to improve the situation in areas found to be weak. These activities are believed to be helpful in proving "due diligence" for the employer in case of litigation by an employee, and in fact by encouraging worker-employer consultation, normally lead to improvements in the organizational culture and climate.

G. Personal Health Resources in the Workplace

As far as our researchers were able to ascertain, there are no laws anywhere that require an employer to promote healthy lifestyle practices in the workplace.[**] To the contrary, there may

be provisions in various human rights codes and laws that could prevent discrimination or harassment by employers on the basis of lifestyle factors, such as smoking, obesity, lack of physical activity, or unhealthy dietary practices. In some jurisdictions, for example, an addiction to tobacco is regarded as a disability, and therefore subject to anti-discrimination laws.[147] Thus it reinforces the point that when employers choose to help employees adopt a healthy lifestyle, they must do so with finesse. Their role must be to determine, and then support, the lifestyle changes that workers wish to make, and never cross the line to pressure employees or discriminate in any way against those with unhealthy lifestyles.

There are some exceptions to this statement. If a personal health habit or condition interferes with the employee's ability to do the job, the employer does have the right to become involved. For example, a fire department has the right to make a certain level of physical fitness a condition of employment for fire fighters, because fire fighters would be unable to perform the key functions of the job otherwise. Even in this situation though, treading the line between sex discrimination and ensuring employees can perform the job is sometimes delicate.[148]

Similarly, drug or alcohol misuse, or other habits or conditions in employees, could create situations where an employee was unable to perform the job safely, and could endanger not only his or her own life, but the lives of the public or co-workers. Here again, there is a vast difference among nations as to the legal lengths to which an employer can go, without infringing on individual rights. For example, it is widely accepted in many US states to routinely test an employee for drugs or blood alcohol levels after any workplace accident, whereas that would be unacceptable and subject to immediate legal challenges in most Canadian jurisdictions.[149] Another example is that of diabetes. While it appears that an employee having diabetes is a cause for safety concerns in the USA, and likely to have serious implications for the type of work

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[*] As discussed in Chapter 4, the six areas are: demands of the job, employee control over how they work, support form management and colleagues, working relationships, role clarity, and organizational change.

[**] One of the closest situations to legislated health promotion exists in Germany, where the national sickness insurance providers are required to spend a certain amount of money per subscriber on wellness or health promotion programmes, and this is usually applied to the workplace. (Personal communication 29 September 2009, Wolf Kirsten, President, International Health Consulting)

that can be done, it is much less an issue in Canada.[150]

While legislation regarding health education in the workplace is lacking, there is some movement towards legal encouragement for enterprises to provide a workplace environment that at the very least, does not encourage unhealthy lifestyles that lead to noncommunicable diseases. Most notable is legislation regarding tobacco, as evidence of the impact of secondhand smoke establishes smoking as an environmental risk for all exposed. Since the passing of WHO's Framework Convention on Tobacco Control, many countries, states/provinces or municipalities have enacted legislation requiring workplaces to be smoke-free, which not only removes chemical hazards from the workplace, but also indirectly encourages workers to quit smoking.

Other aspects of noncommunicable disease risk formerly seen as individual choice are now understood as an environmental risk, and as such they may become more and more subject to legislative regulation. For example, a worker may choose to eat the French fries in a workplace cafeteria, but may not choose to have them made with trans fats. The employer who allows cooking with trans fats in a work canteen is needlessly exposing workers to a health hazard that is not a personal choice.

H. Enterprise Involvement in the Community

The legislated mandates for enterprises' effects on the community are generally limited to their impact on the natural external environment. All developed countries and most developing nations have legislation to regulate emissions from industrial workplaces, either into the air or water.[151]

Wikipedia makes this rather judgmental assessment of the global situation regarding implementation of these laws: "While many countries worldwide have accumulated impressive sets of environmental laws, their implementation has often been woeful. In recent years, environmental law has become seen as a critical means of promoting sustainable development (or "sustainability"). Policy concepts such as the precautionary principle, public participation, environmental justice, and the polluter pays principle have informed many environmental law reforms in this respect….There has been considerable experimentation in the search for more effective methods of environmental control beyond traditional "command-and-control" style regulation. Eco-taxes, emission trading, voluntary standards such as ISO 14000 and negotiated agreements are some of these innovations."

As with other workplace health and safety laws and standards then, having the policy or law on the books is only the first step, while achieving compliance is another, much more difficult step.

The United Nations Environment Programme (UNEP) seeks to provide international leadership by "inspiring, informing and enabling" nations to care for the natural environment. They recognize the challenge of getting all nations and enterprises in compliance with environmental law, but point out that addressing environmental issues such as climate change can have multiple benefits. For example, they state that an investment in energy efficiency in renewable energy infrastructure not only stimulates the economy, but fosters one that is more resource-efficient too – an economy that puts people back to work in numbers far greater than in the fossil fuel industries.

This points out again the need for a multistakeholder approach to addressing worker health, safety and well-being.[152,153] It is now understood that the realm of worker health can be impacted by not just the WHO and ILO but by organizations such as the World Economic Forum (WEF), World Trade Organization (WTO), EU, ISO, UNEP, trade unions, various non-governmental organizations (NGOs), civil societies, health insurance companies and other private corporations.

I. The Informal Economic Sector

While it has been mentioned before, it bears repeating that the informal economic sector, by definition, is not covered or protected by occupational health & safety laws or social security legislation in most countries. The ILO has repeatedly urged nations and enterprises to extend coverage to those workers not covered by formal employment contracts.[154]

The informal sector is not a small minority of workers. In India, 80% of enterprises are unregistered, and therefore not covered by health & safety regulations.[155] This translates into 86% of the working population, or nearly 400 million people who work in the informal sector and are not covered by any form of social security.[156] In some countries in the Persian Gulf area, informal workers who are non local/immigrant workers make up the majority of the workforce.[157] Women are disproportionately represented among informal workers, as those who work in their homes, in the homes of others as domestic workers, or as street vendors are usually female.[158]

The size of the informal sector provides an argument for including occupational health services in the primary health care system of a country, so that all citizens and residents are at least covered by basic health care. However, that is a purely reactive approach, which does nothing to prevent these workers from being exposed to harmful situations at work. The Seoul Declaration on Occupational Safety and Health at Work states that the right to a safe and healthy work environment is a basic human right[159], not just a right for formal employees. Creative and innovative approaches are needed to ensure that these workers have a voice, are able to be represented by trade unions, and are covered by the same legislation that covers employees with formal employment contracts. For example, the ILO provides assistance in this area, with a programme called PATRIS (Participatory Action Training for Informal Sector Operators).[160] In addition, enterprises that believe in the principles of the Global Compact

"I think one of the key problems that we are facing now is really related to the traditional type issues where many workers are not just doing one job but they may be in multiple occupations in terms of earning a living. So they could be in the formal workplace for part of the day and then going and doing other things in the evening, and often it has been quite difficult in terms of the multiple activities that they are involved in."
Interview #30, Norway, OH, Occ Med.

can indicate their commitment to fair treatment of workers by requiring all members of their supply chains to practice responsible health and safety, even if they are informal workers or workplaces.

Chapter 4:
Interrelationships of
Work, Health and Community

No one would disagree that work, health and community are related. But how exactly? A number of questions come to mind:

- Do poor working conditions cause poor mental and physical health?
- Does poor mental or physical health result in poor performance and productivity at work?
- Does the health of workers have any impact on the success and competitiveness of the organization?
- Does the community in which a workplace operates affect the health of workers?
- Does the health of workers, or workplace conditions, affect the community?

The answer to all of these questions is probably a qualified "yes" in some way. Let's look at some of the evidence. (Types of evidence will be discussed in Chapter 5.)

A. How Work Affects the Health of Workers

This section has separated the effects of work on physical health & safety from the effects of work on mental health & safety, followed by a discussion of the interactions between the two. This is done to note the often separate bodies of evidence, as well as to emphasize the fact that the work environment contains psychosocial as well as physical hazards. But in many ways this is a very artificial division. Mind and body are one, and what affects one, inevitably affects the other. Other ways of organizing this chapter might have been to separate safety effects from health effects, but that division is equally artificial. The reader is therefore asked to forgive the overlap and any apparent duplication.

1. Work influences physical safety and health
Hazards that pose threats to physical safety of workers include, for example, mechanical /machine hazards; electrical hazards; slips and falls from heights; ergonomic hazards such as repetitive motion, awkward posture and excessive force; flying fragments that could injure an eye; or risk of a work-related motor vehicle crash. Physical safety hazards, with the notable exception of motor vehicle crashes, are usually the first type of hazard to be included in health & safety legislation, when it exists. If injuries result from these hazards, they are also the most probable to be covered by any kind of workers' compensation that is in place (again, with the exception of motor vehicle crashes and also musculoskeletal disorders (MSDs).

In spite of the likelihood that most countries have some sort of legislation to prevent these types of injuries, they continue to occur at a distressing rate. Out of the two million estimated deaths from occupational injuries and illnesses, in 1998 approximately 346,000 were due to traumatic workplace injuries[161] with an additional 158,000 due to motor vehicle crashes that occurred in the course of commuting.[162] What is most disturbing is that the estimated fatality rate per year per 100,000 workers ranges from a low of <1 to a high of 30 in different countries. And the estimated accident rate (an injury requiring at least three days absence from work) ranges from a low of 600 per year per 100,000 workers, to a high of 23,000.[163] The human and economic toll of these dry statistics is incalculable.

While it is customary to think only of physical hazards as having an effect on the safety of workers, this is not always the case. Sometimes non-physical, or psychosocial hazards in the workplace can also affect physical safety. (See discussion of psychosocial hazards below, Section A2.) For example, the perception of work overload has a strong association with injuries among young workers.[164]

In fact, psychosocial hazards can be associated with injuries in either a direct or indirect manner. When employees lack sufficient influence over hazardous conditions in the workplace, they lack the control necessary to abate threats to life and limb. Thus, lack of control can contribute *directly* to an injury. However, *indirect* influences can be just as dangerous. Workers experiencing psychosocial hazards may:

- sleep badly
- over-medicate themselves
- drink excessively
- feel depressed
- feel anxious, jittery and nervous
- feel angry and reckless (often due to a sense of unfairness or injustice)

When people engage in these behaviours or fall prey to these emotional states, it is more probable they will:

- become momentarily distracted
- make dangerous errors in judgement
- put their bodies under stress, increasing the potential for strains and sprains
- fail in normal activities that require hand-eye or foot-eye coordination.

The American Institute of Stress has developed the following Traumatic Accident Model:[165]

Figure 4.1 American Institute of Stress Traumatic Accident Model
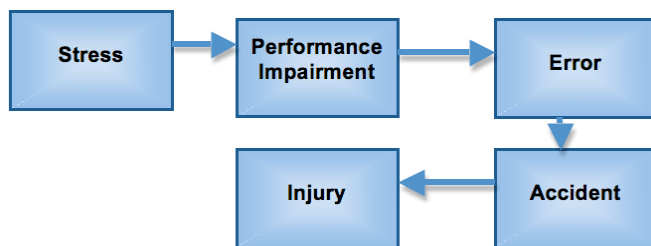
Leadership and Safety

Since the leadership style of managers usually defines the amount of control or influence that workers have, it is reasonable to assume that a "transformational" style of leadership• as

opposed to an authoritarian style might influence safety outcomes. This has now been shown to be true. Research done by Barling et al found that leadership style affects occupational safety through the effects of perceived safety climate, safety consciousness, and safety-related events.[166] They also found that the existence of high-quality jobs that include a lot of autonomy (control or influence), variety and training, directly and indirectly affect occupational injuries through the mediating influence of employee morale and job satisfaction.[167]

Violence and Safety

Workplace violence is a serious threat to the safety of workers in many developed and developing countries. An imbalance between effort and reward may result in a sense of injustice or unfairness in workers, leading to feelings of anger that may be directed against a supervisor or co-worker. Other psychosocial hazards such as ongoing harassment may also create deep feelings of anger and frustration. The anger may manifest itself in many ways that are the expressions of potential violence:

- threatening behaviour
- emotional or verbal abuse
- bullying, harassment or mobbing
- assault
- suicidal behaviour
- recklessness.

Workplace violence is of particular importance to women, who are at special risk of becoming victims of violence at work.[168] While the majority of cases of aggression or violence overall are experienced by men, the rate of exposure to workplace homicide is several times higher for women than men.[169] As well, exposure to mental violence (bullying, sexual harassment) is significantly higher for women than for men.[170]

Physical Health

Physical health includes a spectrum of conditions, from having a diagnosed illness at one extreme, through a condition in which the

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• Transformational leadership is a style that includes idealized influence (making decisions based on ethical determinants), inspirational motivation (motivating workers by inspiring them rather than demeaning them), intellectual

stimulation (encouraging workers to grow and develop) and individualized consideration (allowing flexibility in how situations are handled.)

person has no specific disease yet is not at their maximum health potential, all the way to exuberant health and well-being at the other extreme. Work can impact any worker's position on this continuum.

While traumatic injuries are usually immediately apparent to both the victim and observers, this is not true in the case of work-related diseases and cumulative injuries such as noise-induced hearing loss and many musculoskeletal disorders. Often it may take years for a disease to become evident in a worker, and then the link to workplace exposure may be unclear or not recognized at all. For this reason, occupational diseases and cumulative injuries have been grossly under reported and generally under recognized in terms of their toll. WHO estimates that each year 1.7 million people die from occupational diseases and 160 million new cases of occupational disease occur.[171] These include communicable and noncommunicable diseases (NCD): infectious diseases such as HIV, hepatitis B and C among health care workers; various forms of cancer such as mesothelioma from asbestos exposure, or other cancers from solvent exposure; chronic respiratory diseases such as silicosis or occupational asthma; skin diseases such as malignant melanoma from sun exposure, or dermatitis from solvent exposure; physical neurologic disorders such as noise-induced hearing loss; reproductive problems such as infertility and miscarriages resulting from exposure to chemical or biological agents; and many others.

Estimates vary as to the contribution of workplaces to the burden of these diseases, which may also have non-work-related causes. But the toll is significant: WHO estimates 16% of hearing loss, 11% of asthma, 9% of lung cancer cases worldwide are due to occupational exposure, while 40% of hepatitis B and C infections in health care workers are due to needle-stick injuries suffered at work.[172] WHO states that 200,000 people die from work-related cancers each year.[173] And as noted in Chapter 1, these diseases are not evenly distributed, with

women and other vulnerable workers experiencing more than their share.

MSDs
Musculoskeletal disorders (MSDs), sometimes known as repetitive strain injuries or cumulative trauma disorders, are a form of physical injury that can be discussed in the context of occupational diseases. As in the case of an illness, an MSD is not immediately apparent, and may take days, months or even years of exposure to the hazard before it affects the worker. Commonly understood risk factors for MSDs are excessive force, awkward posture and repetition. These factors are very often found in jobs with a large physical component, especially those that have a great deal of monotony or repetitive tasks. The jobs may either involve heavy labour, or may be "white collar" jobs with a significant amount of computer work. In developed countries, women are exposed more than men to highly repetitive movements and awkward postures, and their risk of MSDs is several times greater.[174,175,176]

What is not commonly understood is that psychosocial conditions related to the organization of work can also act as risk factors.[177,178] The idea that psychological stress can contribute to, or cause, MSDs is not intuitively obvious, and much research is being done to determine the mechanisms by which this occurs. Many different physiological mechanisms that occur during stress probably contribute to this relationship, including increases in non-voluntary muscular tension and cortisol levels, changes in pain perception and decreases in muscle repair and blood testosterone levels.[179]

Work and Personal Health Practices
Protecting health by removing hazards in the workplace, and thus avoiding disease, does not guarantee that workers will experience superb health. An employee's health is also influenced by his or her personal health practices. Does the worker smoke? Eat a nutritious diet? Get enough exercise? Enough good quality sleep? Drive safely? Abuse alcohol or drugs? There is

no need to explain or provide more scientific evidence that these behaviours have a tremendous impact on health. The question is, does work have an influence on these behaviours?

Research has shown that smoke-free workplaces are associated with a lower daily cigarette consumption by employees, and a reduced prevalence of smoking;[180] and conversely, that increased workplace stress can lead to increased cigarette smoking.[181] This is one proven example of how a workplace affects a personal health behaviour. In addition, energy expenditure during working hours is negatively associated with physical activity in leisure time.[182]

There are many other "common sense" answers to this question, which are not necessarily based on scientific evidence. For example, if an enterprise has a company cafeteria for workers with inexpensive, free or subsidized food, and serves only "junk food," it is probable this will influence workers to eat unhealthy food, at least while they are at work. If work is stressful, many employees will react to the stress by increasing bad habits that help them (temporarily) cope with the stress, such as drinking excessive amounts of alcohol or smoking more. If workers are expected to work long hours and significant overtime, it will be difficult for them to incorporate physical activity into their schedule. It is quite apparent that work can, and does, influence personal health choices that can increase risk factors for both acute and chronic, communicable and non-communicable diseases.

The work-related factors that influence a worker's ability to adopt a healthy lifestyle are not always gender neutral. Women tend to have jobs with a lower degree of decision latitude[183], so that even when flexibility is provided to allow time for exercise, women may not have as much actual leeway as men. In addition, it is well known that women who work outside the home generally do more unpaid labour in the home, before and after work, than men do.[184] While men tend to do household repairs and car maintenance, women generally do cooking, cleaning, and caring for children or sick relatives.

> *"You can have advice and you can have access to physical activity, to tobacco cessation, healthy food at the workplace. These are healthy behaviours. But you need to have healthy enablers. These are the boss that would allow you to engage in those behaviours - eating better, exercising, not smoking."*
> *Interview #17, Switzerland, Med Epidemiologist*

This type of work usually cannot be postponed, resulting in women's leisure time being more fragmented than men's.[185]

2. Work affects mental health and well-being

For some time there has been a general observation that mental illnesses among workers can impact negatively on work performance, and among enlightened employers, even a realization that the workplace is a setting that can assist in the identification of mental illness, and facilitation of proper treatment. But there has been little understanding of how work impacts on mental health or possibly even contributes to the development of mental illness or mental disorders.[186]

Most mental illnesses have multiple causes, including family history, health behaviours, gender, genetics, personal life history and experiences, access to supports, and coping skills.[187] Joti Samra and her colleagues at the Consortium for Organizational Mental Healthcare (COMH)[188] (a collective of mental health researchers, consultants and practitioners at Simon Fraser University, Canada) have reviewed the literature on this subject. They conclude that "*Workplace factors may increase the likelihood of the occurrence of a mental disorder, make an existing disorder worse….may contribute directly to mental distress (demoralization, depressed mood,*

anxiety, burnout, etc.) Mental distress may not reach the level of a diagnosable mental disorder, and yet be a source of considerable suffering for the employee…"[189]

> *"In terms of the psychosocial environment of the worker, it links directly to the mental health that is promoted or not in the workplace, and also to the ability that the worker feels that he is able or not to perform his job. So it relates to the concept of self-efficacy, not only in terms of caring for his own health while performing his job, but also using his job as part of his mental well-being."*
>
> *Interview #42, Switzerland, MSD Prevention*

Research in the past 30 years has clearly shown that various situations in the workplace can be labeled "psychosocial hazards" because they are related to the psychological and social conditions of the workplace rather than physical conditions, and they can be harmful to mental (and physical) health of workers. These are sometimes referred to as *work stressors.*

Demand/Control, and Effort/Reward
Pioneer work by Karasek and Theorell beginning in the 1970s noted that certain job factors, specifically high demand and low control or decision latitude, greatly increased the risk of a variety of physical and mental illnesses or disorders, including anxiety and depression.[190] They developed the well-known demand-control-support theory of job strain. Since women tend to hold jobs with lower control than men, they are more adversely affected than men in this regard. The other key researcher in this field for decades has been Johannes Siegrist, who developed a model showing that an imbalance between the mental effort expended for work,

and the rewards received (in terms of recognition, appreciation, respect, etc., as well as financial) was linked to a variety of mental and physical problems.[191]

Abundant and ongoing research in this field continues to refine the earlier findings. For example, a recent population-based study found that male workers who reported high demand and low control in the workplace were more likely to have a major depression, while women in the same situation were more likely to have more minor depressive symptoms; job insecurity in men, but not women, was associated with major depression; and an imbalance between work and family life was the strongest factor associated with mental disorders for both genders.[192] The Mayo Clinic states that burnout is more probable for people with little or no control over work.[193] Health Canada summarized much of the literature in this area in their 2000 document, "*Best Advice on Stress Risk Management in the Workplace*" and concluded that these factors (demand, control, effort, reward) can double or triple the risk of a mood disorder like depression or anxiety.[194]

Efforts to determine the proportion of mental illness due to organization of work factors are ongoing, but the etiologic fraction has been estimated to be in the realm of 10% to 25%, depending on the characteristics of the workplace.[195]

An extensive review of the scientific evidence for the effects of work on mental health is beyond the scope of this paper. As long as 15 years ago, Barnett & Brennan reported over 100 empirical studies dealing solely with the demand-control-support model[196] and research continues to proliferate. Kelloway and Day reviewed the vast literature on the subject of how work impacts health, and report that there is solid scientific evidence that mental heath is negatively impacted by: overwork; role stressors such as conflict, ambiguity and inter-role conflict; working nights and overtime; poor quality leadership; aggression in the workplace, such as harassment and bullying; and perceived job

control.[197] They also note that other aspects of work can positively enhance mental health of workers.

Work-Family Conflict
One specific area of worker health that is receiving significant attention in recent years is the area of work-life balance, or work-family conflict. Research indicates there are four major areas of work-family conflict that all have varying effects on employee health, organizational health, families, and society. These four broad areas are role overload, caregiver strain, work-family interference, and family-work interference. In general, workers who report high levels of work-family conflict experience up to 12 times as much burnout and two to three times as much depression as workers with better work-life balance.[198]

The relationship between work-family conflict and gender is extremely complex, and sometimes surprising, as determined by Canadian researchers. Different types of conflict affect the two genders differently, and the various workplace interventions and personal coping strategies differ in their effectiveness for the two genders as well. For example, in the Canadian research done in 2001, the role of "caregiver" was not as strongly associated with gender as it was in the past. Men appear to be spending as much time in child care activities as women. However, the researchers point out, "It should be noted that this 'enlightened' attitude with respect to the distribution of 'family labour' does not extend to home chores, which still appear to be perceived by many as 'women's work.'" In addition, men and women find different aspects of an organization's culture to be particularly problematic, from the perspective of work interfering with family; and there are different root causes for the two genders for family interference with work.[199]

While the cited work was done in Canada and may well apply to most developed countries, the situation in developing nations is undoubtedly much different with respect to masculine-feminine roles in the family. Globally, women are

much more likely to work in the informal sector, and to work from their homes.[200] This situation, in which a woman is doing paid work in her home, while simultaneously caring for children and performing the usual 'women's work' of cooking and housework, gives new meaning to the phrase work-family conflict.

Job Insecurity
It has been shown that self-perceived job insecurity may be the number one predictor of a number of psychiatric conditions, such as minor depression. This is especially pronounced in cases of chronic job insecurity. Even when those exposed to chronic job insecurity regain some degree of job security, the psychological effects are not always fully reversed upon removal of the threat.[201]

Inclusive Work Culture
While morale and job satisfaction are not necessarily *components* of mental or physical health, they do contribute to, and have an impact on the mental and physical health of employees. One of the factors of a healthy workplace that has been discussed earlier is the concept of an inclusive organizational culture – one that is open and accepting of different ethnic groups, genders, and individuals with various disabilities. For example, reasonable accommodation of people with disabilities has been shown to not only increase productivity, but to create greater trust and improved alignment of corporate values with worker values.[202]

Workplace Risk Factors for Mental Disorders
COMH has recently developed an internet-based resource titled Guarding Minds @ Work,[203] which includes measurement tools to assist employers to assess psychosocial risks and develop strategies to overcome them. They based their tool on twelve psychosocial risk factors that have a solid scientific evidence base for their effects on mental health. These are as follows:

1. ***Psychological support:*** a work environment where co-workers and supervisors are supportive of employees' psychological and mental

health concerns, and respond appropriately as needed.

2. *Organizational culture*: a work environment characterized by trust, honesty and fairness.

3. *Clear leadership and expectations:* a work environment where there is effective leadership and support that helps employees know what they need to do, how their work contributes to the organization, and whether there are impending changes.

4. *Civility and respect:* a work environment where employees are respectful and considerate in their interactions with one another, as well as with customers, clients and the public.

5. *Psychological job fit:* a work environment where there is a good fit between employees' interpersonal and emotional competencies, their job skills, and the position they hold.

6. *Growth & development:* a work environment where employees receive encouragement and support in the development of their interpersonal, emotional and job skills.

7. *Recognition & reward:* a work environment where there is appropriate acknowledgement and appreciation of employees' efforts in a fair and timely manner.

8. *Involvement & influence*: a work environment where employees are included in discussions about how their work is done and how important decisions are made.

9. *Workload management:* a work environment where tasks and responsibilities can be accomplished successfully within the time available.

10. *Engagement:* a work environment where employees enjoy and feel connected to their work, and where they feel motivated to do their job well.

11. *Balance*: a work environment where there is recognition of the need for balance between the demands of work, family and personal life.

12. *Psychological protection*: a work environment where employees' psychological safety is ensured.[204]

As well, the Health and Safety Executive in the United Kingdom some years ago developed Management Standards in an effort to reduce psychosocial risks in workplaces. They did a similar literature review, and came up with six factors for which they found solid scientific evidence of having an impact on mental health:

1. *Demands:* workload, work patterns and the work environment

2. *Control:* how much say the person has in the way they do their work

3. *Support:* this includes the encouragement, sponsorship and resources provided by the organization, line management and colleagues

4. *Relationships*: this includes promoting positive working to avoid conflict and dealing with unacceptable behaviour

5. *Role:* whether people understand their role within the organization and whether the organization ensures that they do not have conflicting roles

6. *Change:* how organizational change (large or small) is managed and communicated in the organization.[205]

WHO recently published a guide and website devoted to Psychosocial Risk Management.[206] Again, extensive research identified the following psychosocial factors as having the greatest risk to workers' health:

- *Job content*: lack of variety, short work cycles, fragmented or meaningless work, underuse of skills, uncertainty

- *Workload and work pace:* work overload or underload, machine pacing, time pressure

- ***Work schedule:*** shiftwork, night shifts, inflexible schedules, unpredictable hours, long or unsociable hours
- ***Control:*** low participation in decision-making, lack of control over workload, pacing, shifts
- ***Environment and equipment:*** inadequate equipment availability, suitability or maintenance, poor environmental conditions such as lack of space, light, excessive noise
- ***Organizational culture and function:*** poor communication, lack of support for problem-solving and personal development
- ***Interpersonal relationships at work:*** social or physical isolation, interpersonal conflict, poor relations with supervisor or co-workers, lack of social support
- ***Role in organization:*** role ambiguity, role conflict, responsibility for people
- ***Home work interface:*** conflicting demands of work and home, low support at home, dual career problems.

Lastly, the EU recently looked at 42 psychosocial hazards and rated them according to which ones were "emerging" OSH hazards, by which they meant the risks are both new and getting worse.[207] There were eight in which there was strong agreement that they are emerging:

- unstable labour market, precarious contracts
- globalization
- new forms of employment, contracting practices
- job insecurity
- the ageing workforce
- long working hours

- intensification of work, high workload/work pressure
- lean production/outsourcing.

Clearly, while there are different terms used or slightly different interpretations of which particular psychosocial factors related to the organization or work or the organizational culture are the most important in affecting mental health, there is much agreement. And there is no disagreement that these factors do have a profound affect on the mental health and well-being of employees.

3. Interrelationships

The preceding two sections discuss physical and mental health & safety separately. However, it is of paramount importance to understand that these two aspects of health are not separate and distinct entities, but in fact are very closely intertwined. When physical health is impaired, it affects the mind, and when mental health and well-being are impaired, it affects the physical body.

Hazards that affect both physical & mental health

High Demand/Low Control workplace conditions at the extreme (highest 25% demand level, lowest 25% control level) compared with high demand/high control conditions are associated with both physical and mental outcomes, including:[208]

- more than double the rate of heart and cardiovascular problems
- significantly higher rates of anxiety, depression and demoralization
- significantly higher levels of alcohol use, and prescription and over-the-counter drug use
- significantly higher susceptibility to a wide range of infectious diseases.

High Effort/Low Reward workplace conditions at the extreme (highest 33 percent effort level, lowest 33 percent reward level) compared with high effort/high reward conditions are associated

with both mental and physical outcomes, including:[209,210]

- more than triple the rate of cardiovascular problems
- significantly higher incidence of anxiety, depression and conflict-related problems
- increased risk of new onset type 2 diabetes
- increased body mass index and alcohol use.

Shiftwork has long been recognized as having deleterious effects on both physical and mental health. Some of the physical effects of working rotating shifts are increased risk of breast cancer, irregular menstrual cycle, miscarriage, ulcers, constipation, diarrhoea, insomnia, high blood pressure, and heart disease.[211] Some of the mental well-being effects of working shiftwork are increased levels of anxiety, depression, work-family conflict, and social isolation.[212]

Job Insecurity not only has an effect on mental health as mentioned earlier, but on physical health as well. Downsizing of an enterprise, which can lead to significant job insecurity, is linked to poor self-reported health and prolonged sick leave related to musculoskeletal disorders. Those working continually in precarious employment are at higher risk for mental and physical ailments, including musculoskeletal disorders, and risk of death from smoking-related cancers and alcohol abuse.[213] In addition, increased cardiac mortality among workers has been seen in situations when there is a significant downsizing (more than 18% of the workforce).[214]

Interrelationships between workplace and personal risk factors

Another interesting perspective looks at the interrelationships between risk factors in the workplace environment and personal risk factors. There is a growing body of evidence that illuminates synergies between these two groups of hazards. For example, smoking is known to increase the risk of occupational

allergies[215], and may multiply (rather than just add to) the risk of lung cancer from asbestos exposure[216]. Obesity has a complex relationship with occupational hazards. PA Schulte and others state that obesity "has been shown to affect the relationships between exposure to occupational hazards and disease or injuries. It may also be a co-risk factor for them. Obversely, workplace hazards may affect obesity-disease relationships, be co-risk factors for disease or injuries or for obesity. Workplace design, work organization and work culture may also influence disease risk."[217]

4. The positive impact of work on health

The pages above highlight the negative effects that work can have on workers' physical and

> *"To safeguard ones' existence. That means to have a fixed and reliable income. That is extremely important and it doesn't depend on the level of income. The point is to have security in the job. This is the main criteria [for a healthy workplace] indicated by the employees."*
> *Interview #22, Germany, Physician OH*

mental health, safety and well-being. However, this paper would be incomplete and misleading if we did not point out the overall positive impact that working usually has on workers.

Generally, speaking, work is good for physical and mental health, when compared to worklessness, or unemployment.[218] Employment is usually the main means of obtaining adequate economic resources for material well-being and full participation in society, and is often central to individual identity and social status. In addition, the negative health effects of unemployment are also well documented. Those who are sick or have some form of disability are also generally better off in terms of health if they can be accommodated in some form of paid work.

Waddell and Burton have explored the evidence for the positive effects of work in detail, and conclude that "*There is a strong evidence base showing that work is generally good for physical and mental health and well-being. Worklessness is associated with poorer physical and mental health and well-being. Work can be therapeutic and reverse the adverse health effects of unemployment. That is true for healthy people of working age, for many disabled people, for most people with common health problems, and for social security beneficiaries. The provisos are that account must be taken of the nature and quality of work and its social context; jobs should be safe and accommodating.*"[219]

While this research was done in a developed country, the conclusions can also be applied to developing nations, with an increased emphasis on the provisos.

B. How Worker Health Affects the Enterprise*

The facts are clear: work can affect the mental and physical health, safety and well-being of employees, and often, unfortunately, in very negative ways. But a cynical or resource-poor employer may say, "So what? I have a business to run. Their health isn't my problem!" So let's look at the other side of the equation. Does ill health among employees affect the health, effectiveness, productivity or competiveness of an enterprise?

1. Accidents and acute injuries affect the enterprise

While this statement seems obvious in some ways, it is not always easy to recognize and quantify all the costs to, and other effects on, an enterprise. The greatest effect is usually the unquantifiable personal costs. The owner/operator and co-workers of an injured worker will be affected emotionally to some degree whenever an employee, friend or

colleague is injured. These effects may be devastating in a small company, in the extreme case of a worker being killed.

In addition to the personal effects, there are the economic costs to an enterprise. When someone suffers an acute injury at work, and is required to take time away from work, there are many direct and indirect costs to the employer, for example:

- Immediate payments to a physician or health care system
- Insurance costs
- interruption in production immediately following the accident
- personnel and time allocated to investigating and writing up the accident
- recruitment and training costs for replacement workers
- damage to equipment and materials
- reduction in product quality following the accident if less experienced replacement workers are used
- reduced productivity of injured workers on modified duties
- overhead cost of spare capacity maintained in order to absorb the cost of accidents
- legal costs if any[220]

These categories of cost are based on research from larger enterprises in industrialized countries. When an accident occurs in a small or medium-sized enterprise, or in a developing nation, the proportion of indirect costs is probably smaller. However, data consistently show that the safest enterprises are the most competitive.[221] In fact, one of the business advantages to an SME of having a good health & safety record is that it helps them meet the OSH requirements of business clients in order to win and retain contracts.[222]

EU-OSHA has specifically looked at the economic benefits of occupational health and safety in small and medium-sized industries, and states that reasonably effective occupational health and safety measures can help an SME improve its performance. They note that SMEs

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* The term "enterprise" means a company, business, firm, institution or organization designed to provide goods and/or services to consumers. While often used to imply a for-profit business, in this document it is intended to include not-for-profit organizations or agencies, and self-employed individuals.

are particularly vulnerable, because the relative impact of a serious accident is greater than with a larger enterprise. In fact, 60% of SMEs that have a disruption lasting more than 9 days go out of business.[223]

Although the cost of one accident to one enterprise is significant, the cost to an individual employer is dwarfed by the cost to countries or regions: in 2005 workplace injuries cost American businesses US$ 150 billion in direct and indirect costs, exceeding the combined profits of the 16 largest Fortune 500 companies.[224]

2. The physical health of workers affects the enterprise

When employees are ill, regardless of the cause, their productivity at work will be decreased. If the employee is too ill to come to work, there are the absenteeism-related costs of recruiting and bringing in a replacement worker, training that worker, and potentially experiencing reduced quality or quantity of work from that replacement. If the ill employee comes to work in spite of the illness, a phenomenon occurs that has recently been labeled "presenteeism," which describes the reduced productivity of someone who is either physically or mentally ill, and therefore not as productive as he or she would normally be. Either way, the employer pays.

One detailed comprehensive study quantified the cost of various illnesses to American employers.[225] Ranges of condition prevalence in the population, and associated absenteeism and presenteeism losses were used to estimate condition-related costs. Based on average impairment and prevalence estimates, the overall economic burden of illness to an employer for hypertension (high blood pressure) per year, per employee (all covered employees, not just those with the condition) was US$ 392, for heart disease US$ 368, and for arthritis US$ 327. That means, for example, that an American SME with 100 employees is paying

US$ 39,200 per year because of high blood pressure among employees. The authors note that presenteeism costs were higher than medical costs in most cases, and represented 18%-60% of total costs. An associated study showed that the price tag of a diabetic worker to an employer is more than five times that of workers without diabetes.[226]

Numerous studies have shown that poor health negatively impacts productivity. Cockburn et al determined that people suffering from poorly controlled allergies were 13% less productive than other workers.[227] Burton et al developed a sophisticated Worker Productivity Index and showed that as the number of health risk factors increased, productivity decreased.[228] Another

> *"I also see it [a healthy workplace] as a place where the productivity and efficiency is its best because people are actually performing better."*
> *Interview #40, Croatia, OH Psychologist*

study reported that health-related productivity costs were more than 4 times greater than medical and pharmacy costs.[229]

The direct costs for the employer of poor heath among workers depends very much on the regulatory system in the country involved, and the way primary health care is provided. For example, in Europe and Canada, there are usually well-functioning primary health care systems that are available for everyone -- employed, self-employed or unemployed. In Canada for example, employers may pay for this in some indirect way through taxes, but it is not linked directly to the health of their employees. Employers may choose to provide some supplementary health insurance to pay for drugs not covered by the government, dental care, or a private room in a hospital; these supplementary costs *are* influenced by the health of employees. In a country like the United States, however, the health care system is not so universally accessible to all residents, and employers often

provide comprehensive health insurance that is extremely costly. In a survey of American and European employers, when asked why they provided wellness or health promotion programmes to their employees, the Americans' top two reasons were to reduce health care costs and improve productivity; the Europeans' top two were reducing employee absences and morale.[230]

In developing nations, it is not as probable that the employer will pay for health insurance, but they still pay the price of missing employees. In parts of sub-Saharan Africa, the cost of HIV/AIDS to employers is staggering in terms of absenteeism due to sickness and attendance at funerals of friends, families and co-workers; presenteeism due to sickness; and increased turnover due to deaths from the disease among workers.[231]

The literature is full of reports stating the cost of ill-health to employers and to national economies. Some Canadian data provide a conservative estimate of costs to employers in developed nations:
- The cost of supplemental health plans for Canadian employers increased by 26% between 1990 and 1994.[232]
- The private sector (Canadian employers) paid 29% of total health care in 2000, up from 24% in 1994.[233]
- Short-term absence costs in Canada more than doubled between 1997 and 2000, going from 2% of payroll to 4.2%[234]
- Short- and long-term disability costs together in Canada are more than double the costs of workers' compensation, and the ratio has been increasing since 1997.[235]
- Every Canadian employee who smokes costs a company $2500 per year (1995 dollars) mostly due to increased absenteeism and decreased productivity.[236]

It is generally well recognized that people in most parts of the world, but especially in

developed countries, are becoming less physically active, more poorly nourished (in terms of quality, not quantity of food), and more obese, with a resultant increase in many of the conditions mentioned above: hypertension, cardiovascular disease, diabetes, arthritis. As the population ages, these will become even more prevalent, and the impact on productivity in the workplace is frightening to project.

3. The mental health of workers affects the enterprise
Common sense says this is true. Imagine you are the owner of a medium-sized enterprise. Would you rather have employees who are engaged, focused, enthusiastic, committed to their work, innovative and creative? Or would you prefer workers who are stressed-out, angry,

> *"It [psychosocial hazard] could be also a situation where everybody is dealing with 1000 different activities and you don't have any flexibility to say no, so you always keep on taking more, and basically you are very frustrated because what you produce is bad quality and this is a big frustration."*
> *Interview #6, Switzerland, OH Engineer*

depressed, burned out and apathetic? In today's knowledge-based enterprises, employers depend on highly functioning, engaged, innovative and creative employees to keep finding ways to stay ahead of the competition. More than ever before, they require the *minds* of workers to be functioning at a high capacity.
Even if the enterprise is one that depends almost entirely on brute force or simple repetitive tasks with little room for innovation or creativity, an engaged and committed worker is more productive and useful than one who is apathetic, depressed or constantly stressed.

Science and medicine support the

common sense. After mentioning examples of ways in which employers can create workplaces that encourage good mental health, the recently published Mental Health Strategy for Canada states, "In addition to improving overall mental health and well-being, such efforts can also help to improve the productivity of the workforce and reduce the growing costs of insurance claims for both physical and mental health conditions." [237] Table 4.1 shows some symptoms of three mental illnesses or disorders, clearly showing

characteristics that affect work. Clearly, workers exhibiting these symptoms will have a negative impact on productivity and quality of work, therefore directly affecting the enterprise.

Poor mental health and/or job dissatisfaction related to work-family conflict also has a significant impact on productivity at work, specifically related to absenteeism and intent to turnover. Research indicates that workers

Table 4.1 Work-related Symptoms of Common Mental Disorders

Work-related Symptoms of Depression[238]	Work-related Symptoms of Anxiety Disorders[239]	Work-related Symptoms of Burnout[240]
• Trouble concentrating • Trouble remembering • Trouble making decisions • Impairment of performance at work • Sleep problems • Loss of interest in work • Withdrawal from family, friends, co-workers • Feeling pessimistic, hopeless • Feeling slowed down • Fatigue	• Feeling apprehensive and tense • Difficulty managing daily tasks • Difficulty concentrating	• Becoming cynical, sarcastic, critical at work • Difficulty coming to work and getting started once at work • More irritable and less patient with co-workers, clients, customers • Lack of energy to be consistently productive at work • Tendency to self-medicate with alcohol or drugs

experiencing high work-family conflict demonstrate up to 13 times as much absenteeism, and have a 2.3 times higher intention of quitting. [241]

In addition to the immediately obvious effects of poor mental health on the enterprise, there are direct and indirect costs to society as a whole.

For example:
• Mental health problems were estimated to cost Canadian businesses $33 billion Canadian dollars per year in 2002, if non-clinical diagnoses are included (e.g., burnout, subclinical depression, etc.) [242]
• In France in 2000 a total of 31 million working days were lost due to depression. [243]

• The cost of reduced performance due to untreated depression is estimated to be five times as great as the cost of absenteeism [244]
• A conservative estimate of productivity losses alone for depression, anxiety and substance abuse in Canada is $11.1 billion per annum.
• In the European Union, the cost of work-related stress* was

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* Much has been written about the "cost of stress" to business. There is considerable confusion and inconsistency in the literature regarding use of the word "stress." For the purposes of this paper, "stress" will be used to describe the subjective feelings that may result from any number of conditions at work ("stressors" or psychosocial hazards), such as being overwhelmed by work demands that are out of the worker's control, or being harassed by a co-worker. Stress is not a mental illness or a mental disorder in itself. It may be considered mental

estimated to be 2 billion Euros in 2002.[245]

C. How Worker Health and the Community Are Interrelated

So far this paper has looked at ways in which the work environment of the enterprise affects the physical and mental health and safety of workers; and the ways the health, safety and well-being of workers affects the enterprise. But all workplaces exist in communities and societies. The community or society in which the enterprise exists also has a tremendous impact on worker health and enterprise success – and vice versa.

As such, there are very big regional differences based on the level of development of countries. The examples listed below are probably not issues in most of Western Europe, North America, or in more developed parts of the Western Pacific Region.

Examples Of How The Community Affects Health Of Workers:
- No matter how healthy and safe a workplace may be inside the doors of the enterprise, if there is no clean, safe water to drink in the community, workers will not experience good health.

- If primary health care in the community is inadequate, and workers and their families are unable to get health care such as treatment or immunizations against communicable diseases, workers and their families will not experience good health.

- If community tobacco control laws are weak, poorly enforced, or non-existent,

community members (including workers) will be exposed to toxic fumes and are more likely to become ill, and/or addicted to tobacco.

- If there are no sidewalks, public transport is poor, roads are hazardous, there is much crime or pollution, then inactive transport (cars or motorbikes) may be the only option for workers to get to and from work, reducing physical activity and limiting possibilities to counter work-induced physical inactivity.

- If the air and water in the community are contaminated by factories belching toxins into the air, or dumping pollutants into the water, workers living in the community will experience a variety of illnesses.

- If HIV/AIDS is common in the community, and infected workers are unable to afford the recommended antiretroviral medications, their health will rapidly deteriorate.

- If the literacy rate in the community and among employees is low, they will be unable to read health and safety information, and may put their health and safety at risk as a result.

- If a natural disaster affects the community (e.g., flood, earthquake) the employees may be affected immediately, or may be overwhelmed trying to cope with the aftermath, and experience negative health consequences.

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distress, but if it is short-lived, it usually has no long-lasting effect. (The exception to this would be post-traumatic stress, when an individual has a severe stress reaction to being the victim of, or observing a horrific event.) However, if the stress is prolonged and continual, it may lead to a mental illness, mental disorder, or a variety of physical ailments. When the literature refers to the "cost of stress" it is assumed to mean the cost of the mental, physical and behavioural symptoms, diseases and disorders that result from prolonged stress. For example, a behavioural symptom of excessive stress in a worker may be increased absenteeism from work.

- If road conditions and/or community driving practices are poor, workers who drive for work will be at increased risk of injury.

While these examples are generally not the legal responsibility of the workplace or employer, they are factors that can often be influenced by the enterprise or organization. When employers choose to become involved in some of these issues, it may be referred to as Corporate Social Responsibility (CSR), or Enterprise Community Involvement, which will be discussed more in Chapters 6 and 9.

How Work Conditions And Worker Health Affect Society And The Community
The reverse is true as well: the mental and physical health of workers will ultimately affect the health of the community and society. For example, If workers experience violence or abuse at work and leave work angry, clearly, the effects of this violence are not restricted to effects on the workplace, but will spill over into worker homes and communities. A worker who is abused at work may exhibit "road rage" on the drive home, or display violence towards a spouse or other family member. Thus the workplace can contribute to increased societal costs for law enforcement, social services and primary health care. Shain refers to this as the "social exhaust" from an

enterprise.[246] In an analogy with environmental emissions from factories that pollute the air or water, this kind of fear, anger or other emotions that leave work with workers who have been treated unfairly also pollutes their families, society and the community.

Canadian research into work-family conflict also demonstrates this point. Duxbury and Higgins documented the effects of four kinds of work-family conflict not only on workers and employers, but also on society as a whole, in terms of usage of the health care system.[247] Table 4.2 illustrates the point that when there is a lack of harmony between workers' home lives and their jobs, it will create significant costs for society, particularly in the case of use of the health care system.

Another relationship between work conditions and the community concerns the issue of disability. If workplaces make reasonable accommodations for people who have some form of disability, they will contribute to decreasing unemployment in the community, which will have positive outcomes for society.[248]

Table 4.2 Work-Family Conflict Effects on Worker Health, the Enterprise and Society[249]

> *"In countries where the basic priorities are not there, where for example, when you refer to clean water, sanitation and cleanliness, and organization in the workplace, and where people don't have the appreciation of this need, then your priorities will be different."*
> *Interview #34, Republic of Korea, OSH*

	Worker	**Enterprise**	**Society**
Role overload	12x more burnout 3.5x high stress 3.4x depression 3.1x poor physical health	3.5x higher absenteeism 2.4x more likely to miss work due to child care	2.6x Increased use of mental health services 1.4-2.4x more physician visits, hospital admissions

		2.3x more likely to turnover/quit	
Work-Family Interference	5.6x as much burnout 2.4x more depression 2.4x poor/fair health 2.3x poor physical health	2.8x as likely to turnover/quit 1.9x absenteeism 0.5x as likely to have a positive view of employer 6x more reports of high job stress Lowest levels of commitment to the employer of all groups.	1.7x as many visits to mental health professional 1.4-1.7x visits to or admissions to hospital
Family-Work Interference	1.6x stress, burnout, depression 2x fair/poor health	6.5x more absenteeism due to child care problems 1.6x more absenteeism overall	1.9x use of mental health services 1.3-1.4x visits to or admission to hospital
Caregiver strain	1.5x stress & burnout 2x depressed mood 1.8x less life satisfaction 1.6x poor/fair physical health	13x more absenteeism due to elder care issues 1.4x more absenteeism overall	1.4-1.8x as many visits to doctors, admission to hospital, spend more on prescription medications, emergency visits, use of mental health care. Greatest use of health care system of all groups.

The general effects of worker health on the health and prosperity of society were recognized at an international conference in 2008. In June of that year, a WHO Ministerial Conference on Health Systems was held in Tallinn, Estonia, with the theme, "Health Systems, Health and Wealth." At the end of the conference the Tallinn Charter was approved, which noted the connection between health and wealth. The charter states, *"Beyond its intrinsic value, improved health contributes to social well-being through its impact on economic development, competitiveness and productivity. High-performing health systems contribute to economic development and wealth."*[250]

In other words, good worker health contributes to high productivity and success of the enterprise, which leads to economic prosperity in the country, and individual social well-being and wealth of workers. And to complete the cycle, it has long been known that socioeconomic status is one of the primary determinants of health: generally wealthy people are healthier than poorer people.

This could be demonstrated graphically as shown in Figure 4.2.

The Business Case
This model reinforces the business case for healthy workplaces, which was implied in Section 4B. Creating a healthy workplace is not just a matter of caring for the well-being of employees. As indicated above, the health and well-being of workers strongly impacts on the ability of the enterprise to perform its functions, and to meet its vision and mission. The Tallinn model restates that fact, that good health is related to worker productivity. And clearly highly productive workers will contribute to business competitiveness. When many businesses in a community are highly efficient

and competitive, that contributes to the economic development and prosperity of the community and ultimately the country as a whole. This economic prosperity filters down to the individual, creating social well-being and wealth for all individuals in the community. And as noted, wealth and socioeconomic status have always been regarded as primary determinants of health. So the Tallinn Charter demonstrates that worker health, business prosperity and even national prosperity and development are inextricably intertwined.

Figure 4.2 Relationship Between Health And Wealth.
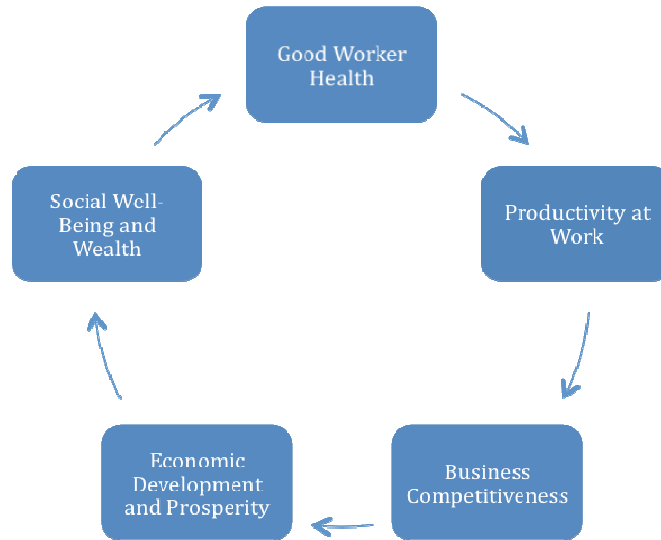
Chapter 5:
Evaluating Interventions

The previous chapters paint a clear picture, showing that work and community environments and conditions can have serious impacts on the health, safety and well-being of workers; and that worker health impacts tremendously on the productivity and effectiveness of enterprises/organizations and of society as a whole. This provides a strong motivation for both workers and employers to wish to create healthier workplaces. But is that possible? What are some solutions to the problems? And how do we know what is effective and what is not?

There have been countless interventions by employers and workers to attempt to make workplaces healthier, in many countries and many diverse settings. The intention of this document is to sort out the wheat from the chaff, to find the common approaches that generally seem to work well to accomplish the aims of improved worker health and enterprise productivity. In other words, to sort out what works and what doesn't. So before discussing promising interventions, it is appropriate to spend some time discussing the issue of evaluation, as it relates to protecting and promoting workplace health, safety and well-being.

A. The Cochrane Collaboration
The Cochrane Collaboration is an international, non-profit, independent organization established to ensure that current, accurate information about the effects of health care interventions is readily available worldwide. More than 15,000 volunteers in over 90 countries participate in the reviewing process. The Collaboration produces and disseminates Cochrane Reviews, which are systematic reviews of the research on various interventions. As such, it provides an extensive resource when looking for evidence about the effectiveness of any intervention. Evidence-based medicine aims to make decisions about treatment based on the best scientific evidence

available, and the Cochrane Collaboration provides invaluable resources to assist in this. The Cochrane Collaboration prefers to limit most of its reviews to interventions that have been tested in randomized controlled trials. This is the "gold standard" of scientific research, and is what is normally used to test new drugs or other medical therapy interventions. This sort of rigour has not generally been applied to occupational health interventions, although some researchers have called for this.[251] In recent years, a Cochrane Occupational Health Field has been established, and there are also groups related to public health/health promotion (Cochrane Public Health Group) and injuries (Cochrane Injury Group.)

So far, the evaluation of workplace health interventions is somewhat limited, but when it is available through the Cochrane Collaboration, the information is invaluable. There is certainly a large research base testifying to the harmful effects of many physical, chemical and biological agents, which, if present in the workplace, can cause physical harm to workers. There are many time-tested control measures for them, some of which have been carefully evaluated. However, evidence-based data that would meet the Cochrane standards is much more limited when it comes to the effectiveness of interventions dealing with mental health of workers, or the effectiveness of work organization or organizational culture interventions.

B. General Evaluation Criteria
When an employer is attempting to improve a workplace, it is with the assumption that whatever is being done will make things better for workers. There would therefore be a natural ethical reluctance to do a controlled trial, and to, in essence, deny or delay the intervention to half the workers (the control group).

Workplace health promotion programmes are especially difficult to evaluate well. To evaluate these interventions in the same way as experimental studies is not always feasible. Interventions attempt to change human behaviour, which depends on so many conditions impossible to control: motivation both of interveners and of intervened, their personalities, life experience, education, actual state of health, tradition and countless other factors.

As a result, the vast majority of those interventions that are undertaken to improve workplace health are not evaluated using strict evidence-based research criteria. Even those designed to be evaluated and published often fall short of the gold standard. Kreis and Bödeker attempted a comprehensive evaluation of the health promotion literature and have the following comment, after noting the high number of studies available: "Contrary to the quantity, however, the quality of the studies on the face of it unfortunately often leave a lot to be desired."[252]

Published studies in the arena of occupational health, safety or health promotion frequently have one or more problems:[253]

- *There is no control group.* A common way of evaluating the effects of a workplace intervention is to collect baseline data before the intervention, and compare the same parameters immediately after the intervention, and/or after some predetermined time period has passed ("pre-post measurements"). However, if there is no control group that does not participate in or be exposed to the intervention, the changes that occur may simply be indicative of changes in society as a whole. For example, a smoking cessation programme that sees a decrease in smoking of 5% by the end must consider this in the light of the decrease in smoking that may have

occurred in the general population at the same time.

- *Too short a time frame for follow-up.* Clinical literature generally shows that to ascertain a behaviour change is permanent, at least six months must elapse, and many studies report results after a shorter time. Some researchers suggest that an intervention must be maintained for 3-6 months to bring about a reduction of a health risk, and 3-5 years to demonstrate cost-effectiveness.

- *Dropouts in the intervention group.* If participants who do not succeed at making a behaviour change drop out of the study before it is finished, the results reported at the end (when mostly the successful people will be left) will overestimate the impact.

- *Self-selection.* It is not possible in most companies to force employees to participate in an experiment, especially one that involves behaviour change. Therefore, people who volunteer to participate may already be highly motivated and interested in the process and outcome of the intervention. Again, this means that the results attained for the intervention will overestimate the effects, when compared to projected results on all employees.

- *Gender bias.* Occupational health

> *"I think we believe a lot of things about what could be improved, but I think we do not have enough knowledge on the effectiveness of these measurements which we are saying. I think there is a need to do more studies on effectiveness."*
> *Interview #20, USA, OH & Sports Med.*

research in general has been criticized for a lack of gender perspective. Women have often been excluded from studies, or results have been adjusted for sex rather than being examined for sex or gender-specific differences.[254]

- *Unclear or inconsistent terminology.* Researchers often say in the literature that "comprehensive" programmes are the most effective. However, the term "comprehensive" is defined in some reports to mean health promotion programmes that integrate the environment of the enterprise; or to mean those that provide an ongoing integrated programme of health promotion and disease prevention that is consistent with corporate objectives and includes evaluation; or it may just mean a programme that is targeted at more than one risk factor.

- *The Hawthorne Effect.* This is well known in workplace research, and means that the behaviour or attitude of workers being subjected to an intervention tends to improve simply because someone is paying attention to them. It could be considered akin to the placebo effect in an individual patient. Although the validity of the Hawthorne Effect has been challenged recently, there is still some evidence that people being watched or experimented upon change their behaviour simply because of being observed or studied.[255]

- *Stages of Change.* All change is not easily measured. The Stages of Change model of Prochaska and DiClemente shows that people go through a number of internal changes before actually changing behaviour.[256] Therefore, if only actual changes in behaviour or physiological markers are measured to determine effectiveness of health promotion interventions,

significant internal changes may be missed.

- *Other confounding factors.* It is unlikely that a single intervention is the only thing that changes in a workplace over time. Everyday occurrences in a workplace such as a change of managers, a merger or acquisition, an increase or decrease in demand for the enterprise's products or services, or changes in the state of the global economy, for example, can have a strong impact on the health of the workplace, regardless of the impact of the intervention. These confounding factors make it difficult to draw any kind of reliable conclusion about the outcome, especially when there is no control group.

C. Grey Literature

Supplementing the workplace health research literature discussed above is an abundance of materials termed "grey literature." This includes published material that is not found in peer-reviewed scientific journals, but may include project reports, publication of "best practices" or "models of good practice." In the majority of cases, these reports do not include exact descriptions of the measures implemented, the detailed outcomes, the original baseline conditions or the determining factors. In addition, there is often incomplete contact or follow-up information, so that reaching the original authors for more information is difficult or impossible.

D. The Precautionary Principle

Given the extremely limited amount of scientifically solid, evidence-based data on the effectiveness of many health protection and promotion interventions, it would be easy to sit back and do nothing. With respect to health promotion interventions in particular, aside from smoking and disease, medical *causal* evidence is lacking; rather, factors such as diet, obesity, and sedentary living have statistically significant associations with illness and disease, but no

solid causal evidence. However, doing nothing in these cases would fly in the face of the spirit of the precautionary principle.

The principle states that *In the case of serious or irreversible threats to the health of humans or the ecosystem, acknowledged scientific uncertainty should not be used as a reason to postpone preventive measures.*[257] In other words, in the context of this paper, employers and workers should not delay implementations to improve workplace conditions and promote health simply because there is no strong scientific evidence of the intervention's effectiveness.

This may be a rather heretical statement to some, and of course comes with one major caveat: it must be clear without a doubt that the intervention will do no harm, either to the health of workers, or to the sustainability of the enterprise. This is where some of the grey literature can play a significant role. Published accounts of case studies or models of good practice can provide valuable guidance to employers and workers who are motivated to make positive change in the workplace, with or without scientific proof of efficacy.

The workplace parties in enterprises that are attempting to improve worker health through health promotion activities should keep in mind that behaviour change is a slow process that requires several invisible, internal changes to occur before actual visible behaviour is modified. This means that patience and persistence in providing ongoing information and education may be required, even in the face of an apparent lack of impact.

E. Interrelatedness of Worker Participation and Evaluation Evidence
A theme that has been heard repeatedly in the literature regarding healthy workplaces is the importance of worker participation. Whether the term is "control over work" or "input into decisions" or "worker empowerment," the fact remains that the involvement of workers is one of the most important and critical aspects of a

healthy workplace.[258] Fortuitously, this healthy workplace indicator and criterion also may provide the answer to the dilemma of scarcity of efficacy evidence. Consider the following. If an employer decides unilaterally to implement a questionable practice into the workplace because the employer believes it will be good for the workers, (a) it may fail because of worker resistance to being imposed upon and (b) if it fails, the workers may react with anger, blame the employer, and complain that there should be no intervention without solid evidence for effectiveness; or they may complain the money could have been better spent on increasing their wages. On the other hand, if the employer and workers and their representatives sit down together to discuss a problem and come up with possible solutions, they may very well come up with the same intervention. However in this case, when the intervention is applied, (a) it has a better chance of being effective because the workers and their representatives were part of the decision to do it, and (b) even if it fails, the workers will probably forgive and forget, and probably be willing to meet with the employer again to try something else.

This principle is so important that in some cases, it may well be worth implementing a measure that the literature suggests to be of uncertain or low effectiveness, if it is something that comes out of a serious collaboration between workers and the employer. In that situation, the *process* by which the intervention was determined, planned and implemented, may be as important as the *content* of the intervention. If the process results in improving trust between workers and the employer, that in itself will have a tremendously positive impact on the mental health, engagement and commitment of workers, the organizational culture, and morale.

F. Evaluating the Cost-Effectiveness of Interventions
In addition to knowing that an intervention is likely to be effective in improving health and/or productivity, employers want to have some idea of the cost-effectiveness of the intervention. Employers generally are not willing to expend

great amounts of resources for minimal results, even if positive. For this reason, many sophisticated employers ask for a cost-effectiveness analysis before implementing an intervention, or require return-on-investment (ROI) data.

The literature is rife with accounts of ROI calculations for health protection and promotion interventions. Some statements are:

"Research shows every Euro invested in WHP leads to Returns on Investment (ROI) between 2.5 € and 4,8€ due to reduced absenteeism costs."[259]

"…the so-called "return of investment" (ROI) in respect of the reduction of medical costs is between 1: 2.3 and 1: 5.9 – this value is all the more impressive because it is to be found in a study controlled at random."[260]

"While there are often difficulties quantifying some of the results, there is growing evidence that the cost-benefit ratio ranges from $1.50 to $6.15 for every dollar invested."[261]

"Eighteen of 18 intervention studies found that absenteeism dropped after the introduction of the health promotion programme and the six studies which reported cost benefit ratios averaged savings of $5.07 for every dollar invested. Twenty eight of the 32 intervention studies found that medical care costs dropped after the introduction of a health promotion programme and the 10 studies which reported cost benefit ratios averaged savings of $3.93 for every dollar invested."[262]

"For health care costs, the studies assume a cost-benefit ratio (return on investment, ROI) of 1:2.3 to 1:5.9. The savings for absenteeism are stated as 1:2.5 and/or 1:4.85 to 1:10.1."[263]

The caveat with statements like these is that there is often little detail provided as to what exactly was done in the interventions. Going back to the original papers reveals that the interventions range from single-focus activities such as a smoking cessation programme, to a more comprehensive approach involving organizational change. In addition, the research design frequently exhibits many of the flaws discussed above. To further confuse the issue, terms such as "return on investment", "cost-benefit" and "cost-effectiveness" are bandied about interchangeably, although some of them have very specific mathematical/accounting meanings.

Sockoll et al conclude, "As the literature shows, there is a clear lack of assessment methods for determining the connection between health and work performance and/or productivity. This results in the fact that to date, the evidence base for the cost-effectiveness of workplace health promotion and prevention focusing on work performance is still very limited."[264] They do, however, make it clear that data on the economic benefits of health protection and promotion related to absenteeism and medical costs are sufficiently proven.[265]

Consequently, it is wise to take cost-effectiveness data with a grain of salt unless exact details are known about the methodology. In addition, plans to evaluate cost-effectiveness of an intervention prospectively must be carefully planned with experts in research design to ensure the results are meaningful. This additional planning and consultation may require significant resources, both financial and administrative.

Nevertheless, many employers do not wish to simply take the word of academic researchers and trust that healthy workplace interventions will be cost-effective. Often, boards of directors or funding bodies require proof that what is being done to improve worker health is actually

being effective, and at a reasonable cost. Therefore, it is important that simple tools be provided to assist enterprises to do some basic calculations to determine their own return on investment, without too great a requirement for academic support or costly research budgets. WHO has published a number of tools in this regard, which may be of assistance to the workplace parties.[266,267]

Chapter 6:
Evidence for Interventions
That Make Workplaces Healthier

In spite of the grave limitations in evaluation data discussed in the previous chapter, it is important to review the evidence that is available for effectiveness of various interventions. Knowing that evidence exists or does not exist can form the basis for beginning a conversation between the employer and workers and their representatives when assessing needs and planning interventions.

This paper does not attempt to address in any comprehensive way the actions that national, state/ provincial or local governments should or could take to influence worker health. The focus of the framework is on things that employers and workers can do in collaboration. Having said that, governments clearly have more power than individual enterprises or workers, or even groups of enterprises or groups of workers. Governments can provide the conditions to facilitate, enforce and support improvements in worker health, or they can create barriers and impediments. Much of the work of WHO and ILO is devoted to influencing the actions of governments in this regard. (This is discussed at greater length in Chapter 8.) The scope of this chapter is primarily to provide information and guidance to employers and workers about things that are within their sphere of influence to accomplish, with or without the assistance of government.

Reviewing all the individual research and other publications that examine effectiveness of workplace health and safety interventions would require teams of people working for years. For the purposes of this framework, we have chosen to report on the systematic reviews that have been done by the Cochrane Collaboration and others. As a result, there may be many excellent and effective interventions not mentioned in this paper, because no systematic review has been found on the topic.

One disadvantage to this approach is that it may give the impression that little has been achieved, that successes are few and minor. However, global statistics show this is far from the truth. ILO data show that the estimated workplace fatality rate per year per 100,000 workers ranges from a low of less than 1 to a high of 30 in different countries. And the estimated accident rate (an injury requiring at least three days absence from work) ranges from a low of 600 per year per 100,000 workers, to a high of 23,000.[268] Clearly, there are many effective approaches that have been put in place in the "good" countries that may not have been proven effective in a Cochrane Review, but have made a huge difference to worker health and safety.

A. Evidence for Effectiveness of Occupational Health and Safety Interventions.

For the reasons discussed, evaluation reports of most health and safety interventions fall into the category of grey literature. Nevertheless, some rigorous research has been done, and several systematic reviews of the literature have been published.

One qualifier is related to the issue of gender bias that was noted in Chapter 5. Very little research looks at the effects of workplace interventions on men and women separately. Women and men tend to work in different jobs, and within the same jobs they sometimes perform different tasks. There are also social differences (e.g. family responsibilities) and biological or physiological differences (e.g. differences in average height) that interact differentially with the workplace. For all these reasons, there are very often significant differences in the risks to women versus men,

and in the effectiveness of interventions for women and men.

Table 6.1 shows some samples of measures deemed to be either effective, ineffective, or inconclusive/inconsistent.

Table 6.1 Evidence for Effectiveness of Occupational Health & Safety Interventions

Effective	Inconclusive or Inconsistent	Not Effective
Disability management/return-to-work programmes (using a participatory approach that includes a health care provider, supervisors and workers, and workers' compensation carriers) (strong evidence)[269]	Hearing protection policies – effectiveness depended on whether the policy was mandatory or voluntary.[270]	Ergonomic workstation adjustments alone.[271]
Ergonomic workstation adjustments combined with ergonomic training (moderate evidence)[272]	Training alone on manual lifting showed inconsistent results.[273]	Ergonomic training alone.[274]
Participatory ergonomics programmes are effective[275,276,277,278]	Pre-employment strength testing policies had positive effects for musculoskeletal injuries and costs, and no effects for non-musculoskeletal injuries.[279]	A Cochrane Review of the effectiveness of lumbar supports for prevention of low-back pain found there is moderate evidence that they are not any more effective than no intervention or training.[280] [281]
To return employees to work after experiencing back pain, there is clear evidence that it is important for patients to stay active and return to ordinary activities as early as possible; a combination of optimal clinical management, a rehabilitation programme and workplace interventions is more effective than single elements alone; taking a multidisciplinary approach offers the most promising results; temporarily modified	Prevention of any kind of computer-related MSDs or visual problems by means of ergonomic training, arm supports, alternate keyboards, rest breaks, screen filters (these factors all generally showed weak positive but inconsistent effects)[283]	A Cochrane Review of manual material handling advice and the provision of assistive devices to prevent back pain concluded that there was no significant difference in outcomes between groups who received training on proper lifting and assistive devices, and those who received no training, exercise training, or back belts. It did not matter if the training was intensive or short.[284]

Effective	Inconclusive or Inconsistent	Not Effective
work is an effective return-to-work intervention if embedded in good occupational management; and some evidence supports the effectiveness of exercise therapy, back schools and behavioural treatment.[282]	A Cochrane Review of interventions for preventing occupational noise exposure and subsequent hearing loss reported contradictory results, and no clear evidence of effectiveness, partly due to lack of quality programmes with sufficient worker instructions.[285]	A Cochrane Review states there is strong evidence that shoe insoles do not prevent back pain.[286]
Technical ergonomic measures can reduce the workload on the back and upper limbs without the loss of productivity and evidence that these measures can also reduce the occurrence of MSDs. (strong)[287]	A Cochrane Review of interventions to enhance the wearing of hearing protection among workers exposed to noise in the workplace did not show whether tailored interventions are more or less effective than general interventions.[288]	Rest breaks combined with exercise during the rest breaks (these studies showed moderate evidence of no effect)[289]
Patient handling systems to reduce back pain (multi-component systems that included a policy change, purchase of patient lifting technology and training on the new machines)[290]	A Cochrane Review of interventions for preventing occupational noise exposure and subsequent hearing loss reported contradictory results, and no clear evidence of effectiveness, partly due to lack of quality programmes with sufficient worker instructions.[291]	A Cochrane Review of interventions to prevent injury in the agricultural sector concluded that educational interventions alone are not effective.[292]
A Cochrane Review of interventions for preventing injuries in the construction industry concluded there is some limited evidence that a multifaceted safety campaign and a multifaceted drug programme can reduce non-fatal injuries.[293]	A Cochrane Review of educational interventions to reduce eye injuries at work concluded that studies do not provide reliable evidence of reducing injuries, due to the poor quality of the studies.[294]	There is strong evidence that training on working methods in manual handling is not effective if it is used as the only measure to prevent low back pain.[295]

B. Evidence for Effectiveness of Psychosocial/Organizational Culture Interventions

One of the key psychosocial factors that contributes to a healthy workplace is worker participation in decision-making. Participation of workers and their representatives has been identified as a key success factor for many of the effective physical work environment interventions mentioned above, and many of the health promotion interventions described in Section C.

Apart from the research on worker participation, the number of studies looking at interventions that involve the psychosocial work environment, organization of work or organizational culture is much smaller and more limited than that examining health and safety interventions. Nevertheless, some have been evaluated, with somewhat positive findings. It is noteworthy that while some studies are inconclusive, no strong research has been identified to date showing that psychosocial interventions in the organization of work or organizational culture are *ineffective*.

Table 6.2 shows some samples of psychosocial interventions deemed to be either effective or inconclusive/ inconsistent.

Table 6.2 Evidence for Effectiveness of Psychosocial Interventions

Effective	Inconclusive or Inconsistent	Not Effective
A combination of individual and organizational approaches to workplace stress is the most effective, and important success factors are participation of employees in planning, implementation and evaluation of changes, and the role of management in supporting employees through effective communication.[296]	Some systematic reviews of organizational intervention studies to reduce sources of stress concluded there was no impact; however the authors suggest these results were the result of the very small numbers of studies involved.[297]	No studies were identified that found consistent evidence of a lack of effectiveness of psychosocial interventions.
Health Circles as implemented in German enterprises are a formalized participatory method for assessing and dealing with workplace needs or deficiencies. Because of lack of good studies, evidence of their effectiveness is weak, but is nevertheless consistently positive in reducing stress and work satisfaction, as well as certain health risk factors.[298]	A systematic review concluded there is currently insufficient evidence of quality to judge the effectiveness of the use of organizational participatory interventions in the workplace to improve mental wellbeing and further research is required.[299]	
Psychological ill-health can be prevented/improved by interventions that combine personal stress management with organizational efforts to increase participation in decision-making and problem-solving, increase social support, and improved organizational communication.[300]	The Institute of Occupational Medicine (Edinburgh) examined the impact of different types of supervisory training on the mental well-being of subordinates and concluded there is insufficient evidence to allow any positive	

Effective	Inconclusive or Inconsistent	Not Effective
	statement to be made and further research is required.[301]	
A Cochrane Review of work-directed interventions to prevent occupational stress concluded that those interventions that include communication or nursing delivery change can be effective in reducing burnout, stress and general symptoms in healthcare workers when compared to no intervention.[302]		
Organizational efforts to reduce stress by job redesign can reduce workplace stress.[303]		
Measures "calling on organizational culture are particularly effective" in improving musculoskeletal health.[304]		
There is evidence that changing the shift system of police officers from 7 day consecutive shifts to the 35 day Ottawa system can positively impact on mental well-being.[305]		
Psychosocial intervention training of employees to improve skills or job role can have a positive impact on burnout in the short term.[306]		
There is moderate evidence that a combination of several kinds of interventions (multidisciplinary approach) including organizational, technical and personal/ individual measures is better than single measures in preventing MSDs. However, it is not known how such interventions should be combined for optimal results.[307]		

C. Evidence for Effectiveness of Personal Health Resources In The Workplace
The evidence for efficacy of providing personal health resources in the workplace (often largely limited to health promotion) is equally mixed, though there is evidence that health promotion activities in the workplace can make a difference, at least in the short term, if carefully planned. It is consistently noted that including workers and their

representatives in programme planning and interventions brings positive outcomes.[308] Table 6.3 shows some samples of health promotion activities in the workplace

deemed to be either effective, or inconclusive/ inconsistent, or ineffective.

Table 6.3 Evidence for Effectiveness of Personal Health Resource Interventions in the Workplace (most limited to health education)

Effective	Inconclusive or Inconsistent	Not Effective
Key elements of successful workplace health promotion programmes include having clear goals and objectives, links to business objectives, strong management support, employee involvement at all stages, supportive environments, adapting the programme to social norms.[309]	Individual stress management programmes show varying effectiveness on perception of stress and mental well-being, with cognitive-behavioural approaches the most successful. However, they tend to be short-lived and to have little effect on productivity or organizational measurements.[310]	A Cochrane Review of short psychological debriefing for the management of distress after trauma to prevent post traumatic stress disorder (PTSD) concluded that there is no evidence that a single session is useful, and in fact may actually *increase* the incidence of depression and PTSD. The authors stated bluntly, "*compulsory debriefing of victims of trauma should cease.*"[311]
Work-related exercise programmes increase physical activities of employees, prevent MSDs, and decrease fatigue and exhaustion. These are especially effective when scientific behaviour change theory is incorporated, and when sports facilities are provided.[312]	A Cochrane Review of alcohol and drug testing of occupational drivers to prevent injury or absence from work related to injury concluded there is insufficient evidence to recommend for, or against this practice.[313]	There is moderate evidence that job stress management training has no effect on upper extremity MSD outcomes.[314]
Work-related programmes can help reduce smoking behaviour, control weight (in the short term), improve attitude towards nutrition, lower blood cholesterol, increase physical activity (all these were effective among the participants, not necessarily the workforce as a whole)[315]	Asking participants to pay for a programme appears to negatively impact participation, but reduce drop-out rates. The benefits of incentives cannot be demonstrated in the long term, and may	Physical activity programmes at work show no effect on workplace stress, work satisfaction or productivity.[317]

Effective	Inconclusive or Inconsistent	Not Effective
	have negative effects.[316]	Programmes restricted to offering information or advice on health issues are ineffective ("necessary but inadequate")[318]
Workplace health promotion programmes targeting physical inactivity and diet can be effective in improving health related outcomes such as obesity, diabetes and cardiovascular risk factors.[319]	A Cochrane Review of incentive- or competition-based smoking cessation programmes concluded that while there are short-term improvements, there is no long-term effect.[320]	There is moderate evidence that biofeedback training, in which monitoring instruments are used to provide information about increased muscle tension, has *no effect* on upper extremity MSD outcomes.[321]
Increasing participation rates by using a participatory process to involve workers and their representatives in the preparation and execution of the measures[322]	Recent studies on incentives conclude that appropriately targeted incentives could reduce inequalities in health outcomes, but that ongoing assessment of their affordability, effectiveness, cost effectiveness, and unintended consequences is needed.[323]	Workplace exercise programmes have little effect on muscle flexibility, body weight, body composition, blood lipids, blood pressure[324]
Health promotion programmes that utilize a "stages of change" approach to individualize the intervention to the individual employee's characteristics are more effective.[325]		Self-help smoking cessation programmes, either computerized or paper-based have little effect, according to a Cochrane Review.[326]

Effective	Inconclusive or Inconsistent	Not Effective
Work-related exercise programmes were found effective in reducing workplace injuries.[327]		Worksite programmes to prevent or reduce obesity over the long term have not been shown to be effective.[328]
A comprehensive programme to increase physical activity that includes individual counseling, health promotion education and fitness facilities is more effective than single-focus programmes.[329]		
Individual and organizational approaches to improving nutrition that include point of purchase information and environmental supports can influence employee nutrition habits while at work.[330]		
Smoking bans in the workplace are more effective than limiting smoking locations, and decrease not only the number of smokers, but also the number of cigarettes smoked per continuing smoker.[331]		
A Cochrane Review shows that smoking cessation group programmes can be effective, and that individual counseling was a very important success factor for individualized programmes[332]		
A Cochrane Review on person-directed stress management programmes concluded these could be effective in reducing burnout, anxiety, stress and general symptoms in healthcare workers when a cognitive-behavioural approach, either with or without a relaxation component, was used.[333]		
A Cochrane Review that evaluated the effectiveness of hepatitis B vaccination healthcare workers found it to be highly effective in preventing hepatitis B infection.[334]		

"I would see it[a Healthy Workplace] as an environment which favors the adoption of healthy dietary habits and physically active lifestyle, and that not only involves the physical environment of the workplace but also where the workplace is located, so that it facilitates the entire lifestyle around it to be dietary and physically active."

Effective	Inconclusive or Inconsistent	Not Effective

Web based health promotion and lifestyle training packages can improve mental wellbeing as measured using non-standard questionnaire at baseline and at 6 months after the web site and related components being available.[335]
 	
A WHO review of interventions to improve diet and exercise found multicomponent workplace interventions were effective that:
  o provide healthy food and beverages at the workplace
  o provide space for fitness or encourage stair use
  o involve the family
  o provide individual behaviour-change strategies.[336]		

"I would see it[a Healthy Workplace] as an environment which favors the adoption of healthy dietary habits and physically active lifestyle, and that not only involves the physical environment of the workplace but also where the workplace is located, so that it facilitates the entire lifestyle around it to be dietary and physically active."
Interview #42,Czech Rep., OSH

Effective	Inconclusive or Inconsistent	Not Effective
Promising practices for success in health promotion include: o integrating health promotion programmes into the organization's operations o simultaneously addressing individual, environmental, policy and cultural factors affecting health and productivity o targeting several health issues o tailoring programmes to address specific needs o attaining high participation o rigorously evaluating programmes o communicating successful outcomes to key stakeholders. [337]		

D. Evidence for Effectiveness of Enterprise Involvement in the Community

By its very nature, enterprise/ organizational involvement in the community is voluntary, going above and beyond what is legislated or expected. Some of these activities may be considered "Corporate Social Responsibility" (CSR) activities, and typically address aspects of an enterprise's

"We have to consider workers in the context of their families and communities, which could sometimes be a spill-over into their companies and work, and then considering the environmental factors such as transport systems."
Interview #30,Norway, OH, OH Med.

behaviour with respect to such key elements as health and safety, environmental protection, human rights, human resource management practices, community development, consumer protection, business ethics, and stakeholder rights.

Because of their voluntary nature, and the image of benevolence that they project, enterprises carrying out these activities may not be as (overtly) interested in proving effectiveness or cost-effectiveness. Having said that, an employer may see benefits to workers and to productivity, and may communicate these benefits to other employers in an effort to encourage similar activities. For example, Rosen et al have provided a strong business case for engaging in HIV/AIDS prevention and treatment programmes for employees in areas where HIV is prevalent.[338] Writing in a journal like the *Harvard Business Review*, their aim clearly is to appeal to senior executives, and to appeal to their business sense.

The reality of business is that while ethical employers may genuinely feel connected and want to do good things for the communities in which they operate, they are also not averse to attaining some financial or business benefit from the activities. Even if the senior managers of a corporation are altruistic in nature, they have boards of directors to report to, as well as shareholders. As a result, any employer will try to find a business rationale for community efforts in which he or she is engaged, regardless of any benevolent underlying motives.

There are probably no randomized controlled studies of the effects on business of becoming involved in their community, since an enterprise/ organization would have to shed any pretense of altruism in order to engage in such a study. However, there are many commonly held beliefs about the value of such activities:

"*Corporations can be motivated to change their corporate behaviour in response to the business case which a CSR approach potentially promises. This includes:*

- *stronger financial performance and profitability (e.g. through eco-efficiency),*
- *improved accountability to and assessments from the investment community,*
- *enhanced employee commitment,*
- *decreased vulnerability through stronger relationships with communities, and*
- *improved reputation and branding*"[339]

Often the large multinational companies are the progressive employers in the community and provide community services (for example, housing or transportation), helping them to become the employer of choice, with clear advantages for attracting and retaining employees.

In addition to these business advantages, there are often immediate, obvious and sometimes personal reasons that an enterprise, even an SME, may want to get involved in the community in which it operates and from which it draws its employees. Table 6.4 lists just a few hypothetical examples of how an organization could become involved in its community, and some of the obvious advantages.

Evidence that this type of activity has been recognized by the business community as being important for business success is seen in the Dow Jones Sustainability Indexes. Launched in 1999, these indexes track the financial performance of the leading (top 10%) sustainability-driven companies worldwide. The identification of these leading companies is based on an assessment that looks at economic,

environmental and social perspectives, which include workplace health & safety, business ethics, environmental controls, gender balance and labour practices, among other factors.[340]

It is therefore quite apparent that when an enterprise finds ways to go beyond the legal minimums in their country or community, there can be significant positive impacts on worker health, and also on the health and sustainability of the enterprise. Therefore this type of activity can be considered an important part of a healthy workplace, albeit a voluntary one.

Table 6.4 Examples of Enterprise Involvement in the Community

Situation	Potential Response by an Enterprise	Potential Result
Lack of safe, clean water to drink in the community	Assist in the digging of local deep wells; lobby government for infrastructure; train workers to boil drinking water; provide water filters for use at home.	Improved health among workers, less time lost due to gastrointestinal illness in workers or their families
High levels of HIV infection among workers who are unable to afford treatment	Provide medical care, antiretroviral medication, and anonymous testing, not only for workers, but also for the families of workers.	Improved health of employees, less sick time, less turnover due to employee deaths. Treating family members as well will decrease absenteeism of workers who have to stay home to care for ill family.
Low literacy levels among workers	Arrange after-work classes to teach workers and their families to read and write.	Increased ability of workers to understand written instructions or signage, resulting in improved health and safety. Increased self-esteem among workers, resulting in higher engagement, loyalty, commitment to employer.
Discharge of legally allowable, but toxic, chemical effluent into the environment from enterprise, resulting in pollution.	Go beyond legal minimums and change operating practices to avoid discharging toxins into the environment.	Long-term improved health of the community source of employees. Immediate improvement of corporate image.
Community projects require volunteer workers.	Encourage workers to volunteer, allow scheduled time off to engage in volunteer activities.	Increased employee loyalty, commitment, pride in employment.

Situation	Potential Response by an Enterprise	Potential Result
Traffic hazards, crime and lack of infrastructure make active transport difficult to and from work and elsewhere in community.	Work with city planners to build and ensure practicality and safety of bike paths, sidewalks, public transport system, improved security.	Workers more physically active, contributing to reduction of noncommunicable diseases including cardiovascular disease, cancer, depression, and musculoskeletal problems.
Weak tobacco control, especially smoke-free policy in community exposes community members to secondhand smoke and makes it more difficult to enforce smoke-free policy at the workplace.	Support enactment and enforcement of 100% smoke-free law in community and other effective tobacco control measures as outlined in the WHO Framework Convention on Tobacco Control.	Reduce exposure in community to tobacco smoke; reduce incidence of heart attacks and other health hazards of secondhand smoke among workers and other community members.
Lack of health system resources, privatization of health care, lack of compensation for primary care and preventive services may make primary care and preventive health services inaccessible or unaffordable.	Work with other employers to develop innovative insurance schemes, or with existing insurers to include primary health, and find ways to support and increase capacity of existing primary care services.	Better access to primary care improves community health and worker health by reducing both communicable and noncommunicable disease.
Lack of suitable and affordable child care increases work-family conflict and compromises wellbeing of children of working parents.	Provide subsidized child care for employees; work with community governments, civil society and private sector to support provision of affordable and decent child care.	Access to good-quality and affordable child care reduces stress of workers and improves child welfare, health and education, as well as decreasing absenteeism and presenteeism at work.
Crime, lack of public facilities, air pollution, lack of parks and safe public places and lack of grassroots sporting activities limit community options for leisure activity.	Work with city authorities and planners to ensure provision of safe public areas and support sporting or other physically-active leisure activities.	Improved health of workers and increased community solidarity.

Chapter 9:
The WHO Healthy Workplace Framework and Model

The preceding eight chapters have reviewed and discussed workplace health concepts in the published literature. Ideas about the definition of a healthy workplace have been discussed, as have the interrelationships between work, health, and community. Interventions in workplaces that can make a positive difference in both the health & well-being of workers and the productivity of the enterprise have been reviewed. And various models for both the content of healthy workplace activities and effective processes of continual improvement for implementing them have been discussed.

After compiling and analyzing all this information, the World Health Organization has developed the comprehensive model and framework presented in this chapter. A WHO definition of a healthy workplace is proposed:

A healthy workplace is one in which workers and managers collaborate to use a continual improvement process to protect and promote the health, safety and well-being of workers and the sustainability of the workplace by considering the following, based on identified needs:

- *health and safety concerns in the physical work environment;*
- *health, safety and well-being concerns in the psychosocial work environment including organization of work and workplace culture;*
- *personal health resources in the workplace; and*
- *ways of participating in the community to improve the health of workers, their families and other members of the community.*

All of this definition except the last bullet is based on solid scientific evidence, which has been laid out in detail in the previous chapters, especially Chapters 4, 6 and 7. As indicated in Chapter 3, the last bullet is based on direction

provided to WHO in the Jakarta Declaration, the Stresa Declaration, the Global Compact, the Global Plan of Action for Workers' Health, and the consensus of workplace health experts consulted for this framework.

This definition is intended chiefly to address primary prevention, that is, to prevent injuries or illnesses from happening in the first place. However, secondary and tertiary prevention may also be included through occupational health services under "personal health resources" when this is not available in the community. In addition, it is intended to create a workplace environment that does not cause re-injury or reoccurrence of an illness when someone returns to work after being away with an injury or illness, whether work-related or not. And finally, it is intended to mean a workplace that is supportive, inclusive and accommodating of older workers or those with chronic diseases or disabilities.

The framework and model presented here include both content and process, and may be implemented by any workplace of any size, in any country. As noted in Chapter 1, there is no "one-size-fits-all" and each enterprise must adapt these recommendations to their own workplace, their own culture and their own country. The WHO model and framework outlined in this chapter bring together the principles and common factors that appear to be universally supported in the literature and in the perceptions of experts and practitioners in the fields of health, safety and organizational health.

Chapter 8 on legislative and policy considerations contains the one cautionary proviso regarding the universality of application. The ability of any enterprise to implement the healthy workplace model proposed below will be influenced by the legislative, policy and regulatory situation in their country. Governments have the power to create

supportive and facilitative environments for healthy workplaces, or

Chapter 8:
Global Legal and Policy Context
of Workplace Health

As mentioned in Chapter 6, governments have more power than individual enterprises or workers, or even groups of enterprises or groups of workers. Differences in the distribution of political and economic power have a profound influence on the work environment and health of workers. Benach et al note, "*In scientific papers, reports or other publications on public health, little attention is paid to the political issues that shape health policy. Policies and interventions on health cannot be thought of as a financial or a technical value-free process; rather, it is influenced by the political ideology, beliefs and values of governments, unions, employers, corporations or scientific agencies, among others.*"[341]

Governments create the broader context of employment that influences not only working conditions, but also health inequities. Underlying everything is the way that governments view the health of their populace. If governments see differences in health as the inevitable result of individual genetic determinants, individual behaviours, or market conditions, they will respond in one way. If they see inequalities in health as an avoidable outcome that needs to be remedied, they will respond much differently.[342]

A report to the WHO Commission on Social Determinants of Health provides an excellent summary and discussion of the extremely broad and complex network of forces that interact to create and influence the health of workers.[343] The authors illustrate both a macro model, which includes power relations in the market, government and civil society, as well as social policies according to the degree of social protection and general view; and a micro model focusing more on employment and working conditions, which result in health inequities through a variety of behavioural,

psychosocial and physiopathological pathways.

The report discusses the global situation by placing countries in one of nine categories, based on two factors: economic level (core, semi-periphery and periphery) and labour market policies (leading to more or less economic equality.) Table 8.1 illustrates where a number of nations fall according to this characterization.[344]

The authors of the report note that there is a strong correlation between labour market inequalities and poor health in the population. For example, among peripheral countries, higher labour market inequality results in higher probability of dying for men and women, higher infant and maternal mortality rates, and more deaths from cancer and injury. The implications for workplace health are clear. Think of an enterprise in Sweden that is attempting to become a healthy workplace, with the cooperation and collaboration of workers and managers. Now think of the same type of enterprise in Ethiopia, with the same commitment from the employer to create a healthy workplace.

> "*I actually think the most important aspect is probably the national culture on health. I think the appreciation by people at work of all the work-related impact on health and the impact of health on work is absolutely crucial, but it is sometimes not facilitated by the national systems.*"
> *Interview #36, Australia, OSH*

Table 8.1 Countries Classified By National Economic Level And Labour Market Policies

	More Equal	LABOUR MARKET	Less Equal
Core	**Social Democratic Labour Institution**	**Corporatist Labour Institution**	**Liberal Labour Institution**
	Sweden, Denmark, Norway	France, Germany, Austria, Spain	US, UK, Canada
Semi-periphery	**Informal Labour Institution**	**Informal Labour Market, More Successful**	**Informal Labour Market, Less Successful**
	Chile, Hungary, Poland, Malaysia	Turkey, Thailand, South Africa, The Bolivarian Republic of Venezuela	Botswana, Gabon, El Salvador
Periphery	**Informal Market, More successful**	**Insecurity**	**Maximum Insecurity**
	Indonesia, India, Armenia, Pakistan, Bulgaria, Tajikistan, The Sudan, Sri Lanka	Nigeria, Jordan, Algeria, Morocco, Egypt, The Islamic Republic of Iran	Ethiopia, Ghana, Kenya, Bhutan, China, Bangladesh, Angola

Clearly, the enterprise in Ethiopia will face challenges that could scarcely be imagined in Sweden, and the overall level of health among workers will be widely disparate between the two enterprises, despite the best efforts of the workplace parties.

Governments and their agencies are in a position to provide comprehensive standards and laws, and to enforce them. Governments and their agencies can and do create the systems and infrastructure of primary health care, which in turn may provide many basic occupational health services functions. In other words, governments provide the conditions to facilitate and support worker health, or to create barriers and impediments. Clearly, the efforts of employers and workers to create healthy, safe and health-promoting workplaces pale in comparison to the power of the political will of a nation.

A. Standards-setting Bodies

There are a number of standards-setting bodies that have attempted to create standards for workplaces, and to have them voluntarily adopted by governments and/or individual enterprises.

ILO Conventions

Since 1919, the International Labour Organization has approved and published nearly 190 Conventions, which are statements of legally binding international treaties related to various issues regarding work and workers. They cover a wide range of working conditions such as hours of work, the right of association for workers, child labour, employment discrimination, labour inspections, maternity leave, health and safety, workers' compensation, medical examinations, minimum working age, holidays with pay, and contracts of employment for indigenous workers. Once ILO has passed them, Member States are asked to ratify them, which means they are making a formal commitment to implement them. Ratification is an expression of the political will to undertake comprehensive and coherent regulatory, enforcement and promotional action in the area covered by the Convention. Ratifying nations are then required to make regular reports to ILO providing evidence of their progress towards implementation of the Conventions.

In theory, looking at the Conventions and the countries that have adopted them should

provide a good picture of international workplace health, safety and well-being legislation and policy. However, that is far from the truth. For one thing, few Conventions have been ratified by a majority of countries. In addition, some of the most sophisticated developed nations have ratified very few, while some developing nations have ratified most. Unlike rulings of the World Trade Organization (WTO), ILO conventions and recommendations do not include punitive measures for countries that fail to meet these standards.

Table 8.2 shows the percent of countries in the six WHO Regions that have ratified seven very basic ILO Conventions. It is clear that there is no consistency among regions, or even among topics, as to what is ratified and what is not. In some cases, countries with extremely good reputations for workplace health have "denounced" their earlier ratification, presumably because their legislation now goes beyond the demands of the Convention or because some aspects of their law are now in contravention to the Convention. As well, the ILO finds that many Member States may ratify a Convention but then fail to report any progress in actually implementing it within their country.[345]

WHO Framework Convention on Tobacco Control

This is the first, and to date the only, global convention negotiated under the auspices of WHO. Passed in 2003, the treaty requires the signatory countries, numbering 168 to date, to control tobacco advertising, sales, promotion and many other factors. Key to workers is the requirement to eliminate smoke exposure in workplaces or public places. The treaty states, "Each Party shall adopt and implement in areas of existing national jurisdiction as determined by national law and actively promote at other jurisdictional levels the adoption and implementation of effective legislative, executive, administrative and/or other measures, providing for protection from exposure to tobacco smoke in indoor workplaces, public transport, indoor public places and, as appropriate, other public places."[346] As with ILO Conventions, countries sign or ratify the convention voluntarily, but once signed, the treaty has legal standing and must be implemented.

ISO Standards
The International Organization for Standardization (ISO) is the world's largest developer and publisher of international standards. It is a non-governmental network of the national standards institutes of 162 countries. It develops standards that are based on the best scientific evidence available, and which are agreed to by consensus among all participating nations.

Table 8.2 Percent Of Countries In WHO Regions That Have Ratified Selected ILO Conventions[347]

ILO Conventions Ratified	Year Passed	AFRO (46)	AMRO (36)	EMRO (21)	EURO (53)	SEARO (11)	WPRO (27)	Ave
C14 - 24 hr of weekly rest for industrial workers	1921	74%	67%	57%	74%	55%	15%	57%
C17 – Workmen's Compensation for accidents	1925	48%	36%	33%	47%	9%	11%	34%
C18 – Workmen's compensation for occ. diseases	1925	43%	11%	24%	47%	45%	7%	30%
C103 – Maternity Protection, Revised	1952	7%	19%	5%	32%	9%	7%	13%
C155 – Occupational Safety & Health	1981	24%	19%	5%	51%	0%	26%	21%
C111 – Discrimination (Employment and Occupation)	1958	100%	92%	90%	98%	55%	48%	81%
C161- Occupational Health Services	1985	11%	19%	0%	30%	0%	0%	10%
Average		44%	38%	31%	54%	25%	16%	35%

ISO has developed over 17,500 standards to date, and normally adds about 1100 new standards each year. [348]With respect to workplace health and safety, ISO has developed at least 18 standards, and has another 13 under development. Topics include issues related to welding fume, nanoparticles, personal protective equipment such as safety boots or respirators, and exposure to noise, heat or cold. While the standards are voluntary, they often find their way into law in adopting countries.

Exposure Limits
There are a number of standards setting organizations that make recommendations for exposure limits. These are the levels of exposure to a chemical or other type of agent to which a worker can be exposed without serious injury. The term 'exposure limit' is a general term that covers the various expressions employed in national lists, such as "maximum allowable concentration", "threshold limit value" (TLVs), "biological exposure indices" (BEIs), "occupational exposure limits" (OELs), etc. These limits are determined for the average worker, and do not generally provide different recommended levels for those who may have differences in susceptibility due to sex or other factors such as age, etc.[349] The ILO notes that "OSH research should capture any sex-based disparities; yet, at present, there is a dearth of information about the different risks for men and women of exposure to certain chemicals."[350]

A large number of international, national and other authorities have published lists of legal or recommended exposure limits of various sorts, but usually only for chemicals. The most wide-ranging is the American Conference of Government Industrial Hygienists (ACGIH) list of Threshold Limit Values, updated annually, which includes recommended exposure limits values for airborne chemicals; biological monitoring limits; ionizing, non-ionizing and optical radiation; thermal stress; noise; and vibration. The International Programme on

Chemical Safety (IPCS) produces International Chemical Safety Cards, which are peer-reviewed assessment documents. International organizations, such as ISO and the International Atomic Energy Agency produce technical standards on the measurement and control of several ambient factors with the objective of their being transferred to regional or national legislation.[351]

These bodies set standards that are voluntary until accepted by a national government. Countries adopt and implement them in various ways, with or without modification. They may be implemented into regulations that have the force of law, or may remain as recommendations, depending on the government concerned.

B. Global Status of Occupational Safety & Health
In 2009 the ILO published a very comprehensive report on the global status of implementation of Convention Number 155, the Occupational Safety and Health Convention passed in 1981.[352] In reviewing the status of implementation of this Convention globally, the ILO notes that at the date of publication, only 52 countries (out of 183) or 28% had ratified this Convention. However, they note optimistically, more countries are continuing to ratify the Convention on an accelerating schedule.

This Convention adopts a comprehensive approach based on a cyclical process of development, implementation and review of a policy, rather than a linear one of laying down prescriptive legal obligations. It emphasizes the continual improvement approach to eventual total prevention of illness and injury to workers. This policy approach is recommended first for Member States to adopt at the national level, but also for enterprises to adopt in their own internal programmes. It says that the Member States should "formulate, implement and periodically review" a national policy, following in general the OSH

management, Plan-Do-Check-Act process discussed in Chapter 7.

Given the dynamic and progressive nature of the subject, any discussion of the degree of implementation of the Convention must be done over time. For the Member States that have ratified the Convention, the ILO's Committee of Experts has been able to follow this process, since reports are required annually. The 2009 report concluded that only 31 of the 52 ratifying countries are currently in complete compliance with the Convention, while the others are making progress towards full implementation. In addition, among countries that have not ratified the Convention, there are 25 nations that have developed national policies on occupational safety and health, and another 20 are in the process of developing such a policy.[353]

The ILO report describes in detail the many provisions and variations of health and safety policy and legislation that have been implemented globally. In their conclusions and recommendations, however, they note the lack of policy relating to the informal sector in most countries, and they urge governments to revise and extend their policies and legal framework to cover these workers. Other opportunities for improvement that are noted are strengthening labour inspectorates; improving data collection regarding occupational injuries and illnesses; increasing efforts to assess chemical hazards; assessing the impact of work organizational changes on workers' health; addressing newer issues such as MSDs and stress at work; and the continuing occurrence of very basic life-threatening situations faced by untrained workers in many countries.

A unique situation exists in Europe, where all the countries of the European Union are subject to laws and directives passed by the Union. There are many Directives relating to workplace health and safety, ranging from issues related to the physical work environment (e.g. Directive

90/270/EC Display Screens) to the psychosocial environment (Directive 2003/72/EC Employee Involvement) to basic employment conditions (Directive 93/104/EC Working Time).[354]

C. Workers' Compensation

When prevention efforts fail and a worker is injured or made ill at work and is unable to continue to work, he or she has an immediate financial situation to deal with, as income from work ceases. Many countries have installed "workers' compensation" systems to financially compensate injured workers while they are recovering, until they are able to go back to work. In the absence of such a system, workers with the means and the capacity to do so have often pursued litigation against the employer to recover some financial compensation for their injury. In many countries, employers and workers have chosen to endorse state or private insurance schemes to provide guaranteed income to injured workers, sometimes giving up the right to sue.

There are five ILO Conventions related to workers' compensation, which are listed in Table 8.3. Again, a minority of countries in the six WHO Regions has ratified these Conventions. And as in the discussion above related to occupational health and safety, merely looking at the countries that have ratified these conventions does not provide a complete picture.

A review of workers' compensation laws in Canada, the United States and Australia was recently published.[355] In these three countries, workers' compensation law is a provincial/state responsibility, so there is no national consistency. In all cases, however, workers' compensation systems are entirely under the control of legislative bodies and administrative agencies. The reviewers noted that workers' compensation law is inherently extremely complex and it is difficult to compare coverage in one jurisdiction to that in

Other criteria that may be considered are:
- how easy it would be to implement a solution to the problem (consider "quick wins" that may motivate and encourage continued progress);
- the risk to workers (this is a combination of the severity of the exposure to the hazard and the probability that it will occur);
- the possibility of making a difference (including the existence of effective solutions to the problem, readiness of the employer to make a change, or the likelihood of success);
- the relative cost of the problem if it is ignored;
- "political" considerations (this may include actual issues related to the political situation in a country or community, or so-called "internal politics" issues related to enterprise power and influence.

Once agreement on the criteria has been reached there are various ways to select priorities. One way is simply to list all the problems and let everyone choose their top three. Then total the numbers for each item and see how the ranking falls out. Another method is to categorize each of the problems as (a) important and urgent; or (b) urgent but not important; or (c) important but not urgent. Put the A items at the top of the list and plan for the group to address them first, in consultation with the owner/operator of the enterprise. Ask for a volunteer with some authority who can accept responsibility for doing the B items right away. Then make a plan for the team to do the C items after A and B have been done. If there are any items on

the list that are considered unimportant and not urgent, they can be removed from the list.

In larger corporations or in complex work situations, there may be too many items to deal with by these simple methods, and a more complex priority-setting process may be required. To make decisions as objectively as possible a ranking system and priority grid may be used to quantify preferences.

When setting priorities, it is wise to provide opportunities to determine if there are different priorities for women than for men. Care should be taken to ensure that priorities for both genders are addressed. The ILO notes that "research provides compelling arguments for the consideration of women's and men's biological differences, in order to ensure that the workplace is adapted to the physical aspects and capacities of both sexes; the findings seem to have been ignored."[356]

5. Plan

The next big step is to develop a health plan. In a large enterprise, this would be a "big picture" plan for the next 3-5 years. This will set out the general activities to address the priority problems, with broad timeframes. If additional permission is required from senior leaders to go forward, then the rationale and supporting data for each recommendation should be included in the plan to ensure their support. In the overall plan, the Healthy Workplace Team may not yet have the details of the actions to be taken, and may include items such as "develop and implement a programme to increase worker physical activity" without yet knowing the details. The overall plan should have some long-term goals and objectives set, so that in the future it will be possible to determine if there has been success.

After developing the long-term plan, an annual plan would be developed to address

as many of the higher priority items as can be handled in the first year. An annual plan would be done for each of the 3-5 years of the overall plan, although these do not need to all be done at the outset.

When considering solutions to the priority problems, it is important to again remember the "Learn from Others" principle, and research ways of solving the problem. At this time, it is extremely important to remember the four avenues of influence. A common mistake made by enterprises is to think that solutions for a problem in the physical work environment must be physical solutions, for example. Recalling the information in Chapter 4 about the way physical and mental health are interrelated, it is critical to consider all four avenues when designing solutions for any one problem. For example, if there is a problem with workers' risking amputation from unguarded machinery (a problem in the physical environment), it is not enough to simply place guards on the machine (a physical solution.) Consideration must also be given to psychosocial factors such as workload, or an organizational culture that places productivity before safety; if these are not considered, workers will probably remove the guards in order to work faster.

After obtaining any additional required approval in principle for the 3-5 year plan, it is time to develop specific programme or policy action plans for the first annual plan. This is where the detail is spelled out for each programme or policy that is to be implemented. For health education programmes, it is important to ensure that they go beyond just raising awareness to include skill development and behaviour change. The required budget, facilities and resources would be included in an action plan, as well as planning for a launch, marketing and promotion of the programme or policy and training for any new policy. Something often forgotten is to include a maintenance plan for 3-5 years, and an evaluation plan for each initiative. Ensuring that each initiative has

clearly stated measureable goals and objectives will make evaluation easier in the future.

The plan developed for an SME will probably be much simpler, depending on the size and complexity of the enterprise. It may just be a short list of initiatives to be addressed with an indication of time frames. See Table 9.1 for more ideas.

6. Do
As the shoe company motto goes, this is the "Just Do It!" stage. Responsibilities for each action plan should be assigned in the plan, and at this stage it is just a matter of implementing the action plans. Again, it is critical to involve workers and their representatives at this stage, as in other stages. Having management demonstrate their support and commitment for the specific programmes or policies will also help them be successful. Some research has found that integrating the "stages of change" model into implementation is helpful, since not everyone will be at the same stage of readiness for change.[357]

7. Evaluate
Evaluation is essential to see what is working, what is not, and what are the impediments to success. Both the process of the implementation and the outcomes should be evaluated, and there should be short-term and long-term outcome evaluations. Since each action plan includes an evaluation component, these evaluation plans can be implemented. In addition to evaluating every specific initiative, it is important to evaluate the overall success of the Healthy Workplace Programme after 3-5 years, or after a significant change, such as a change of managers. Sometimes repeating the same

Table 9.1 Application of WHO Continual Improvement Process in Large and Small Enterprises

Step	Large Corporation	Small Enterprise
Mobilize	• Get buy-in from the senior management team and trade union leaders or other worker representatives. • Ensure that a comprehensive health, safety and well-being Policy is in place. • Ensure that worker health and well-being is mentioned in the mission or vision of the corporation. • Ensure that resources and an annual budget have been allocated for healthy workplace activities	• Explain the healthy workplace concept to the owner or operator and get permission to proceed. • Get permission to hold short meetings with the workers to determine needs and ideas for solutions. • Get a commitment for enough time to plan and implement programmes. • Help the owner/operator to develop a short health and safety/well-being Policy statement that can be signed and posted in the workplace.
Assemble	• Set up a committee of 10-15 people representing different departments and work locations. • Develop terms of reference. • Set up regional subcommittees if the corporation has many sites. • Ensure cross-representation with the joint management-labour occupational health and safety committee.	• Ask for 2-3 volunteers to help with the work (the Healthy Workplace Working Group). • If there are very different types of jobs in the company (e.g., drivers and labourers) try to get one of each to help. • If you can find experts from larger enterprises or community associations willing to help, include them. • Find a space to meet and gather together any materials you will need.
Assess	• Gather demographic data about the workforce, baseline data on absenteeism, short and long-term disability, and turnover. • Conduct a confidential comprehensive survey of all staff asking about their health status, their health, safety and well-being concerns, sources of stress in the workplace or at home, leadership, employee engagement, etc. • In the survey, ask what they would like to do as individuals to improve their health, and how they think the employer could help. • Do a comprehensive audit to assess all hazards and risks in the workplace; or review results of regular workplace inspection reports.	• If possible (and deemed necessary), find a way for the Working Group to learn about health, safety and well-being as it relates to your industry. • Obtain a checklist from WHO, ILO, EU-OSHA, or make one up yourself, and do a walk-through of your workplace, looking for hazards. Determine local good practice and consult outside experts as appropriate. • Hold a meeting of all workers. Ask the owner/operator to start the meeting by assuring them of his/her commitment to the healthy workplace concept. • Lead a discussion with the workers about their health, safety and well-being concerns. Include family and community concerns as they relate to work. • Brainstorm ideas on what the employees and the employer could do to make things better. • Be sure to ask about stress-related concerns as well as physical concerns. • Have the Working Group meet with the owner/operator separately to ask for his/her ideas on the same topics.
Prioritize	• Analyze the results of the survey and audit/inspection results. • Prioritize by pairing high need areas with high "want" areas from employees.	• Do this at the same time as the initial meeting if possible or at a subsequent meeting. • List problems and solutions and ask people to choose their top 3-5.
Plan	• Develop a broad 3-5 year plan. • Develop annual plans with detailed action plans for each specific activity, programme or new policy. • Base action plans on stages of change when appropriate. • Include activities addressing awareness, knowledge and skill-building, behaviour change, and environmental/organizational adjustments. • In each specific action plan, include process and outcome goals as well as evaluation plans, timelines, budgets and maintenance plans.	• Plan some short-term activities to address smaller projects or immediate high priority needs. Again, local good practice can be a guide. • Develop a long-term plan to accomplish bigger projects. • Use ideas from the Working Group as well as other employees or other enterprises. • Write out the plan and make a list of what you'll need to accomplish each activity, and present to the owner/operator for approval or negotiation. • Plan to do one thing at a time.
Do	• Divide responsibilities among those on the committee. • Hold monthly or bimonthly meetings to assess progress on all projects	• Carry out the action plans with assistance from the owner/operator and the Working Group.
Evaluate	• Measure the process and outcome of each activity against the evaluation plans.	• At a pre-determined time after beginning a project or initiative, repeat the walk through inspection to see if previous deficiencies have improved. • Ask workers if they think the project worked, why or why not, and what could be improved.
Improve	• On at least an annual basis, re-evaluate the 3-5 year plan and update it. • Repeat the survey every 2 years and monitor changes over time. • Develop annual plans on the basis of the evaluations from the previous year.	• Based on what you see and hear from workers, change the programme to improve it. • Begin on another project, based on your list of priorities.

survey, or looking again at the kind of data collected as a baseline can provide this overall assessment

While it is unlikely that the changes to worker health will be able to be causally linked to changes in enterprise productivity or profitability, it is important to track these numbers as well, and compare to benchmarks. For example, if the insurance costs for health benefits in your enterprise keep increasing, even after implementing healthy workplace programmes, that does not necessarily mean the programmes have failed. Look at industry benchmarks for comparison. If health insurance costs have increased by 20% in similar industries, yet have only increased by 5% in your enterprise, that is an indicator of success. More information on returns-on-investment (ROI) is provided in Chapter 5.

8. Improve

The last step – or the first in the new cycle – is to make changes based on the evaluation results, to improve the programmes that have been implemented, or to add on the next components. The evaluation may find that new needs have emerged that have not been addressed in the plan, so that a revision of the plan is required. Or possibly some techniques have not worked as well as anticipated, and need to be revised. On the other hand, some notable successes may have been achieved. It is important to recognize success, and to make sure that all the stakeholders are aware of it and continue to provide support.

Will the model work in developed and developing nations? In large and small enterprises?

It may seem that this process is very complicated and bureaucratic, and far too complex for a small or medium-sized enterprise to engage in, especially in a developing nation. However, the process can be implemented very differently in a large corporation compared to a small enterprise. An example is provided on the previous page (Table 9.2) that shows how both a large enterprise in a developed country, and a small enterprise in a developing nation could implement the process.

C. Graphical Depiction

Section A above discussed the four **avenues of influence** that define the **content** of a healthy workplace programme. Another way of thinking of this is to consider these four broad **content areas** that an enterprise can consider to create a healthy workplace. Section B described the **process** that should be used to implement such a programme, to ensure it achieves and sustains its goals. This continual improvement process, or OSH management system, could be seen as the **engine** that drives the Healthy Workplace. And management commitment and worker involvement, based on sound business ethics and values, are the key principles at its very **core**. These components of a healthy workplace are combined and illustrated graphically in Figure 9.4 to represent WHO's model for creating healthy workplaces.

D. Basic Occupational Health Services – the Link

How does this healthy workplace framework and model relate to the concept of Basic Occupational Health Services (BOHS)? The two concepts are similar, yet different, and serve to complement each other. BOHS as defined by Rantanen and others[358,359] includes all the activities described in this model, in terms of assessing hazards, recommending and implementing solutions, and promoting health in the workplace. BOHS also includes medical responsibilities for:

- health examinations of workers pre-employment, at periodic intervals, or after return from an injury or illness;
- medical surveillance of workers to detect exposures to hazardous agents;
- health record-keeping of workers;
- providing first aid and training workers in first aid;
- general health care, curative and rehabilitation services;

- immunization of employees against endemic or work-related infectious diseases.

These activities require medical professionals, such as doctors and nurses, to carry them out, which may be available in a large corporation, as part of their provision of Personal Health Resources for their employees. But SMEs will not be able to provide these services. This aspect of BOHS may be available through the primary health care system of the country. If not, there are other ways that Rantanen and others have suggested they could be made available. [360] Access to BOHS in many countries is a dire need that the GPA has addressed in Objective 3: To promote the performance of and access to occupational health services.

This need is a perfect example of an opportunity that larger enterprises have to become involved

in the enterprise community, one of the four avenues of influence in this healthy workplace framework. By stepping up to the plate to provide or subsidize these services not only to their own employees, but also for workers in SMEs in the community, their families, and those employed in the informal sector, they can reap the benefits of healthier workers, a healthier community, and an enhanced corporate reputation.

E. The Broader Context

The model presented here is intended to provide guidance for what a workplace can do, when workers and their representatives and the employer work together in a collaborative manner. However as Chapter 8 made clear, the workplace exists in a much larger context. Governments, national and regional laws and standards, civil society, market conditions, and primary health care systems all have a tremendous impact, for better or for worse, on

**Figure 9.4
WHO Healthy Workplace
Model: Avenues of Influence,
Process, and Core Principles**
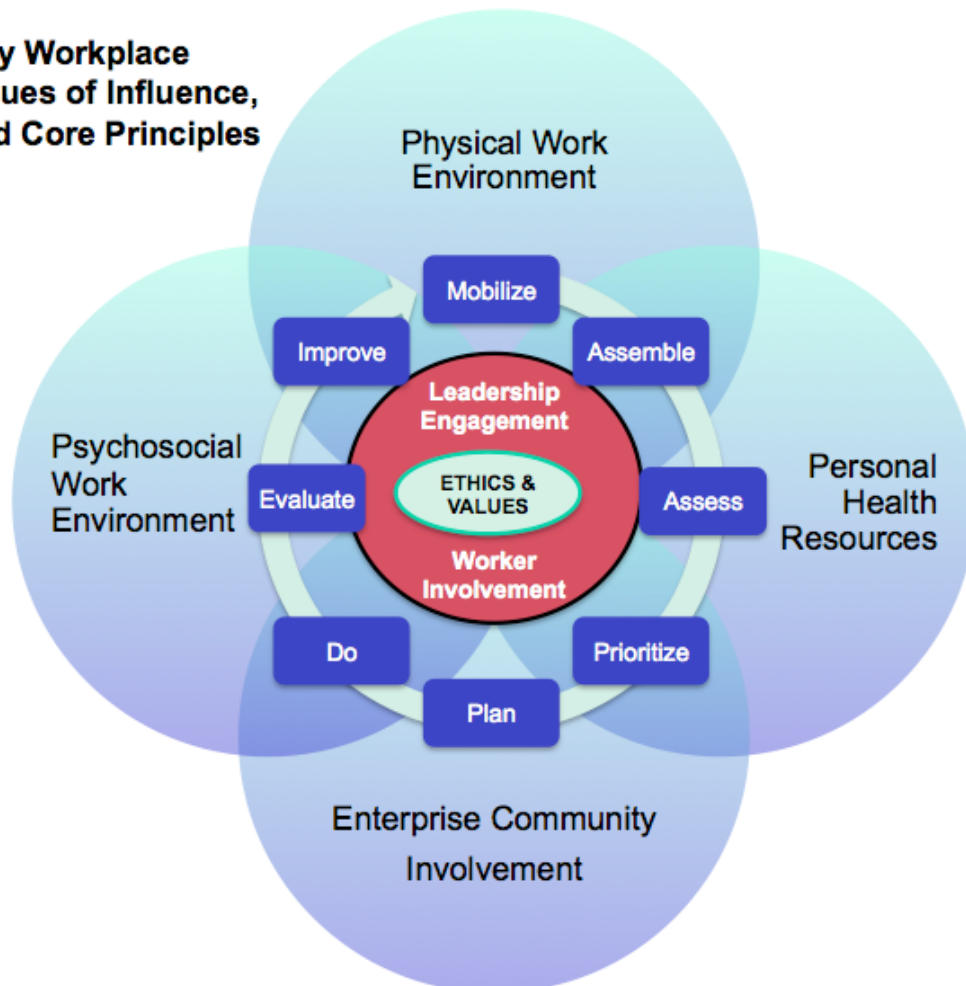
the workplace, and on what can be achieved by the workplace parties on their own. These interrelationships are extremely complex. For those who would like to read more on this subject, the report prepared for the WHO Commission on Social Determinants of Health, "Employment Conditions and Health Inequalities,"[361] explains macro and micro theoretical frameworks to explain how all these factors interact to affect workplace health.

F. Conclusion

There is much that needs to be done to improve the health, safety and well-being of workers globally. To paraphrase the priorities of the Global Plan of Action on Workers' Health:

1. policies must be developed and implemented at national and enterprise levels to support worker health;
2. health must be protected and promoted in the workplace
3. access to BOHS must be improved;
4. evidence-based effective practices to improve worker health must be communicated
5. worker health must be considered in the broader context of education, trade and commerce, and economic development.

This framework and model suggests ways that employers and workers and their representatives in collaboration can make significant contributions to these points. By developing and implementing policies that

address the physical and psychosocial working environments, as well as promoting worker health and creating health-promoting work environments, enterprises can contribute to the first two points above. Larger enterprises that become involved in the enterprise community by providing secondary and tertiary health care services for the community, can thus contribute to the third point. The working group that developed this framework hopes that this background document contributes to the last two points, and will help to motivate enabling stakeholders in government, business and civil society to work together to create a world in which workers experience enhanced physical health and well-being as a result of their employment. It is hoped that the day will come when all workplaces are healthy ones, according to the WHO definition:

A healthy workplace is one in which workers and managers collaborate to use a continual improvement process to protect and promote the health, safety and well-being of workers and the sustainability of the workplace by considering the following, based on identified needs:

- *health and safety concerns in the physical work environment;*
- *health, safety and well-being concerns in the psychosocial work environment including organization of work and workplace culture;*
- *personal health resources in the workplace; and*
- *ways of participating in the community to improve the health of workers, their families and other members of the community.*
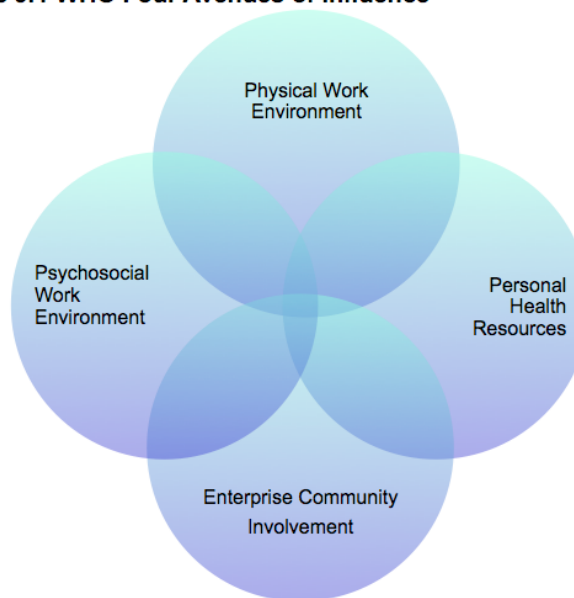
to create environments that put up barriers and impediments at every turn. WHO and ILO will continue their hard work with governments of Member States to move them closer towards the ideal situation of support for healthy workplaces.

Figure 9.1 WHO Four Avenues of Influence

WHO Healthy Workplace Framework and Model: Ba

The informal sector also presents challenges for creating healthy workplaces. Informal work is often unhealthy due to the uncertainty and precarious nature of the work.[362] Since women tend to work more in the informal sector, or in unpaid work, they are affected more than men by these conditions.[363] In the absence of a formal employment contract or even a consistent place of work, it is difficult for even a motivated employer to create a workplace that fosters health. Nevertheless, any employer who wishes to make things as healthy and safe as possible for the informal workers who provide services for the enterprise should become familiar with the elements of this framework and look for ways to apply them to informal workers in unofficial ways if necessary.

A. Avenues of Influence for a Healthy Workplace

To create a workplace that protects, promotes and supports the complete physical, mental and social well-being of workers, an enterprise/organization should consider addressing content in four "avenues of influence," based on identified needs. These are four ways that an employer working in collaboration with employees can influence the health status of not only the workers but also the enterprise/organization as a whole, in terms of its efficiency, productivity and competitiveness.

These four avenues are:
1. The physical work environment
2. The psychosocial work environment
3. Personal health resources in the workplace
4. Enterprise community involvement

These four areas relate to the *content* of a healthy workplace programme, not the *process*. As such, the four avenues are not discrete and separate entities. In practice, each intersects and overlaps with the others. Therefore, they are represented in the suggested graphical model as four overlapping circles, as shown in Figure 9.1. Each of these avenues is defined below, with examples of potential workplace problems that fall into each, and examples of healthy workplace interventions that an enterprise/organization could institute.[*]

It should be clarified that every enterprise may not have the need to address each of these four avenues all the time. The way an enterprise addresses the four avenues must be based on the needs and preferences identified through an assessment process that involves extensive consultation with workers and their representatives (discussed in more detail in Section B, Process).

1. The Physical Work Environment.
Definition: The Physical Work Environment is the part of the workplace facility that can be detected by human or electronic senses, including the structure, air, machines, furniture, products, chemicals, materials and processes that are present or that occur in the workplace, and which can affect the physical

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[*] When reading about the four avenues and the examples in each, individual readers may think certain situations or solutions would better belong in a different avenue. It is not critical into which avenue any particular example fits; rather, it is important that all four avenues not be forgotten when planning a healthy workplace.

or mental safety, health and well-being of workers. If the worker performs his or her tasks outdoors or in a vehicle, then that location is the physical work environment.

The importance of this particular avenue cannot be overstated. While developed nations may consider this to be "basic" occupational health and safety, the fact remains that in many parts of the world, hazards in this area threaten the lives of workers on a daily basis. And even in developed nations, completely preventable injuries and illnesses continue to occur. While each of the four avenues is important, the hazards that exist in the physical environment often have the potential to kill and maim workers quickly and gruesomely. When setting priorities for addressing problems (addressed later in the chapter) it is wise to consider Maslow's hierarchy of needs, in which safety and security is at the base of the pyramid. Many hazards in the physical work environment would fall into this area of human needs.

Examples of healthy workplace problems in the physical environment: Many hazards may exist in the physical work environment, including:
- chemical (e.g., solvents, pesticides, asbestos, carbon monoxide, silica, tobacco smoke);
- physical (e.g., noise, radiation, vibration, excessive heat, nano particles);
- biological (e.g., hepatitis B, malaria, HIV, mould, pandemic threats, food or water-borne pathogens, lack of clean water, toilets and hygiene facilities);
- ergonomic (e.g., excessive force, awkward posture, repetition, heavy lifting, forced inactivity/static postures);
- mechanical (e.g., machine hazards related to nip points, cranes, forktrucks)
- energy (e.g., electrical hazards, falls from heights);
- driving (e.g. driving in ice storms or rainstorms or in unfamiliar or poorly maintained vehicles).

Examples of ways to influence the physical work environment: This is the arena of traditional occupational health and safety. To prevent exposure to hazards and the resulting illnesses and injuries, hazards in the workplace must be recognized, assessed and controlled through a hierarchy of controls that includes elimination or substitution, engineering controls, administrative controls and personal protective equipment, preferably in that order. This is sometimes expressed as instituting controls at the source, along the path, or at the worker. Examples are:
- *Elimination or substitution:* Eliminate the use of benzene in a process and replace with toluene or another less toxic chemical; eliminate driving by holding teleconference meetings; remove sources of mould in the workplace.
- *Engineering controls:* Install machine guards on a tool and die stamping machine; set up local exhaust ventilation to remove toxic gases before they reach the worker; install noise buffers on noisy equipment; provide safe needle systems and patient lifting devices in hospitals.
- *Administrative controls:* Ensure good housekeeping, train workers on safe operating procedures, perform preventive maintenance on machines and equipment, use job rotation to avoid over-exposure to a hazardous chemical, implement a fleet safety policy; enforce a smoke-free policy in the workplace.
- *Personal protective equipment:* Provide respirators (masks) for employees working in dusty conditions; provide hard hats and safety boots for construction workers. These need to be chosen in sizes and configurations that fit women as well as men.

Return to work
When a worker is returning to work after an injury or illness, whether work-related or not, some modifications may have to be made to the physical work environment to avoid the risk of re-injury. Examples might be to lower or raise a working surface, or provide better eye protection. This sort of intervention is considered secondary prevention.

2. The Psychosocial Work Environment

Definition: The Psychosocial Work Environment includes the organization of work and the organizational culture; the attitudes, values, beliefs and practices that are demonstrated on a daily basis in the enterprise /organization, and which affect the mental and physical well-being of employees. These are sometimes generally referred to as workplace stressors, which may cause emotional or mental stress to workers.

Examples of psychosocial hazards: These non-physical hazards include, but are not limited to:

- poor work organization (e.g., problems with work demands, time pressure, decision latitude, reward & recognition, workloads, support from supervisors, job clarity, job design, job training, poor communication);

- organizational culture (e.g., lack of policies and practice related to dignity or respect for all workers; harassment & bullying; discrimination on the basis of HIV status; intolerance for diversity of sex, ethnicity, sexual orientation, religion; lack of support for healthy lifestyles);

- command & control management style (e.g., lack of: consultation, negotiation, two-way communication, constructive feedback, respectful performance management);

- inconsistent application and protection of basic worker rights (legislated employment standards for contracts, maternity leave, non-discriminatory hiring practices, hours of work, time off, vacation time, OSH rights, etc.);

> *"It's important to tell them when they are doing well and to congratulate them and to say,' Well done, without you I couldn't have done that, without you the work will not be done, so it's thank you very much.' And I think this is important - it's a key, key situation. When people tell you that you are doing well, after you feel very good.*
> *Interview #6, Switzerland, Public Health Engineer*

- shiftwork issues;
- lack of support for work-life balance;
- lack of awareness of and competence in dealing with mental health/illness issues;
- fear of job loss related to mergers, acquisitions, reorganizations, or the labour market/economy.

Examples of ways to influence the psychosocial work environment: Non-physical hazards should be addressed in the same way as physical hazards, though they will be assessed with different tools (for example, using surveys or interviews rather than inspections). They should be recognized, assessed and controlled through a hierarchy of controls that seeks to eliminate the hazard if possible or modify it at the source; lessen the impact on the worker; or help the worker protect him or herself from its effects. Some examples are:

- *Eliminate or modify at the source*: Reallocate work to reduce workload, remove or retrain managers /supervisors in communication and leadership skills; enforce zero tolerance for harassment, bullying or discrimination in the workplace; apply all legal standards and laws regarding workplace conditions or put policies in place to supplement the laws (e.g., maternity leave supplemental compensation; accommodation of nursing mothers; smoke-free workplace).

- *Lessen the impact on the worker:* Allow flexibility to deal with work-life conflict situations; provide supervisory and co-worker support (resources and emotional support); allow workers to choose their shift schedules as much as possible; allow flexibility in the location and timing of work; provide timely, open and honest communications about coming organizational changes.

- *Protect the worker:* Train workers on stress management techniques, including cognitive approaches. Raise awareness and provide training for workers, for example, in the prevention of conflict or harassment situations. (This could fall under Personal Health Resources, below).

Return to work
As with the physical work environment, when someone is returning to work after an injury or illness, there may need to be adjustments to the psychosocial work environment, in order to prevent reinjury, or another recurrence of an illness. For example, work could be reorganized, the workload could be reduced, work hours changed, or more flexibility allowed in terms of the way work is done. If the illness was a result of harassment or other behaviours at work that type of behaviour must be eliminated before return.

3. Personal Health Resources in the Workplace
Definition: Personal Health Resources in the workplace means the supportive environment, health services, information, resources, opportunities and flexibility an enterprise provides to workers to support or motivate their efforts to improve or maintain healthy personal lifestyle practices, as well as to monitor and support their ongoing physical and mental health.

Examples of personal health resource issues in the workplace: Workplace conditions or lack of information and knowledge may cause workers to experience difficulty adopting healthy lifestyles or remaining healthy. For example:
- Physical inactivity may result from work hours, cost of fitness facilities or equipment, lack of flexibility in when and how long breaks can be taken.
- Poor diet may result from lack of access to healthy snacks or meals at work, lack of time to take breaks for meals, lack of refrigeration to store healthy lunches, lack of knowledge about healthy eating.
- Smoking may be allowed or enabled by the workplace environment.
- Alcohol use or abuse may be encouraged, tolerated or enabled by workplace practices.
- Poor quality or quantity of sleep may result from workplace stress, workloads or shiftwork.
- Illnesses may remain undiagnosed or untreated due to lack of accessible and/or affordable primary health care.
- Lack of knowledge or resources for prevention of sexually transmitted diseases (STDs) may result in high levels of HIV infection or other blood-borne STDs.

Examples of ways to provide personal health resources in the workplace: The enterprise may provide a supportive environment and resources in the form of medical services, information, training, financial support, facilities, policy support, flexibility or promotional programmes to enable and encourage workers to develop and continue healthy lifestyle practices. Some examples are:
- Provide fitness facilities for workers, or a financial subsidy for fitness classes or equipment.
- Encourage active transport as opposed to passive transport in work activities whenever possible, by adapting workload and processes.
- Provide and subsidize healthy food choices in the cafeteria and vending machines.
- Allow flexibility in timing and length of work breaks to allow for exercise.
- Put no smoking policies in place and enforce them.
- Implement promotional campaigns or competitions to encourage physical activity, healthy eating, or other "fun" activities in the workplace.
- Provide information about alcohol and drugs, and employee assistance counseling services.
- Provide smoking cessation programmes (information, drugs, incentives) to assist smokers to quit smoking.

- Implement healthy shiftwork policies, allow worker choice of shifts as much as possible, and provide guidelines for restful and effective sleep.
- Provide confidential medical services such as health assessments, medical examinations, medical surveillance (e.g. Measuring hearing loss, blood lead levels, HIV status testing) and medical treatment if not accessible in the community (e.g., antiretroviral treatment for HIV).
- Provide confidential information and resources (e.g. condoms) for prevention of STDs.

This avenue of influence is perhaps the most difficult to apply to workers in the informal sector, since generally any existing benefits, programmes and policies do not apply to them. However, a motivated employer can choose to unofficially extend benefits, services and flexibility in scheduling to informal workers, and provide health education information to informal workers.

Return to work
If a worker has been absent from work for some time, the time when he or she is returning to work may be a good time to provide health education information and a supportive environment related to the cause of the illness or injury that caused the absence. For example, if a worker has been off work due to a heart attack, his or her return to work and optimal health can be facilitated by encouraging exercise and healthy food availability, enforcing no-smoking policies in the workplace, and reducing sources of stress in the workplace.

> *It [Healthy Workplace] applies also to the services & products that the work produces…. Focus on the interaction of work and community, the process of manufacturing strategies. For example, employment of child labour in the workforce. Employees extend to family and interaction of work and immediate community, promotion of sales of the product (ethical aspects)."*
> Interview #44. Switzerland, Health Promotion

4. Enterprise Community Involvement
Enterprises exist in communities, affect and are affected by those communities. Since workers live in the communities, their health is affected by the community physical and social environment.

Definition: Enterprise community involvement comprises the activities, expertise, and other resources an enterprise engages in or provides to the social and physical community or communities in which it operates; and which affect the physical and mental health, safety and well-being of workers and their families. It includes activities, expertise and resources provided to the immediate local environment, but also the broader global environment.

Examples of community issues that affect the workplace: Some global and local community problems that may affect workers are:
- poor air quality in the community;
- polluted water sources in the community;
- lack of expertise or knowledge about health or safety in the community;
- lack of access to primary health care for workers and their families;
- lack of national or regional laws protecting the rights of women or other vulnerable groups;
- lack of literacy among workers and their families;
- community disasters such as floods, earthquakes;
- lack of funds for local non-profit enterprises or causes;

- high levels of HIV infection in the community, and little access to affordable prevention or treatment resources;
- lack of community infrastructure or safety to encourage active transport to and from work and during leisure time.

Examples of ways enterprises may become involved in the community:
The enterprise may choose to provide support and resources by, for example:

- Provide free or affordable primary health care to workers, and including access for family members, SME employees and informal workers.
- Institute gender-equality policies within the workplace to protect and support women or protective policies for other vulnerable groups when these are not legally required.
- Provide free or affordable supplemental literacy education to workers and their families.
- Provide leadership and expertise related to workplace health and safety to SMEs without such resources in the community.
- Implement voluntary controls over pollutants released into the air or water from the enterprise.
- Implement policies and practices to employ workers with physical or mental disabilities, thus influencing unemployment and cultural issues in the community.
- Encouraging and allowing workers to volunteer for non-profit organizations during work hours.
- Provide financial support to worthwhile community causes without an expectation of concomitant enterprise advertising, or requirements for community purchase of enterprise products.
- Go beyond legislated standards for minimizing greenhouse gas emissions and finding other ways to minimize the enterprise's carbon footprint.
- Provide antiretroviral medications not only for employees but for family members as well.
- Work with community planners to build and ensure practicality and safety of bike paths, sidewalks, public transport system, and improved security.

There is an important link that needs to be made here between enterprise community involvement and the material presented in Chapter 8 (Global Legal and Policy Context). Clearly, the types of problems faced by enterprises in a developed nation will be very different from those in a developing country, because of the vastly different legal and policy environments in the countries. So, therefore, the types of initiatives and solutions that are appropriate for the enterprise will be different. In a highly developed country with excellent national health care and strong, well-enforced legislation related to health, safety, human rights, etc., the things an enterprise may do to become involved in the community may be more discretionary and have less immediate and obvious impact on the community. In a developing nation, in the absence of accessible health care or enforcement of labour laws, the activities of the enterprise in the community may make a world of difference to the quality of life of employees and their families.

> *There obviously has to be a culture in the workplace that must involve management, the workers trade unions, the line managers, the individual workers. It has to involve the whole enterprise. You also need to look at the general social services that are in the region of the enterprises.*
> *Interview #15, South Africa, Physician, OH Specialist*

Figure 9.2 WHO Model of Healthy Workplace Continual Improvement Process

B. Process for Implementing a Healthy Workplace Programme

Implementing a healthy workplace programme that is sustainable and effective in meeting the needs of workers and the employer requires more than knowing what kinds of issues to consider, as are outlined above in the four avenues of influence. To successfully create such a healthy workplace, an enterprise must follow a process that involves continual improvement, a management systems approach, and which incorporates knowledge transfer and action research components.

The process recommended by WHO is based on an adaptation of WPRO's Regional Guideline discussed in Chapters 3 and 7[364]. It is a cyclic or iterative process that continually plans, acts, reviews and improves on the activities of the programme. It is graphically represented in Figure 9.2.

As noted in Chapter 7, two of the core principles are leadership engagement based on core values and ethics, and worker involvement.[365,366,367,368] These are not merely steps in the process, but are ongoing circumstances that must be tapped into at every stage of the process.

1. Mobilize

In Chapter 7 we noted that it is critical to mobilize and gain commitment from the major stakeholders and key opinion leaders in the enterprise and community before beginning. If permission, resources, or support are required from an owner, senior manager, union leader, or informal leader, it is important to get that commitment and buy-in before trying to proceed. This is an essential first step.

It should be recognized that sometimes in order to mobilize key stakeholders to invest in change, it is necessary to do some up-front information collection. People hold different values and operate in differing ethical frameworks. They are motivated and mobilized by different things – by data, or science, or logic, or human stories, or conscience, or religious beliefs. Knowing who the key opinion leaders and influencers are in an enterprise, and what is likely to mobilize them, will assist in gaining this commitment.

The term "mobilize" is used here deliberately. This step is about more than just getting an "OK" from the owner. Key evidence of this commitment is the development and adoption of a comprehensive *Policy* that is signed by the highest authority in the enterprise and communicated to all workers and their representatives. Additional evidence is the engagement of the key leaders in mobilizing resources for change – providing the people, time and other requirements for making a sustainable improvement in the workplace.

While getting initial indications of management commitment is part of this Mobilize step, leadership engagement must continue to be demonstrated and apparent from the key stakeholders at every step of the process, hence its key placement graphically at the core of the circular process.

For a detailed example of how to implement this and the subsequent steps in the process in both a large corporation and in a small enterprise in a developing nation, refer to Table 9.1.

2. Assemble

Once the key stakeholders have been mobilized and their enthusiastic commitment provided, they will be able to demonstrate this commitment by providing resources. This is the time to assemble a team who will work on implementing change in the workplace. If there is an existing health and safety committee, that pre-existing group may be able to take on this additional role. One caution is that in countries with legally mandated safety and health committees, there are often numerous legislated requirements that the OSH committee must perform, and these tasks would take precedence over other, broader healthy workplace activities. Often (in a larger enterprise) it is better to set up a separate committee, as long as steps are taken to ensure that there is integration between the committees (see Chapter 7, Section D, The Importance of Integration.) For the purposes of this document, we will call this the Healthy Workplace Team, with the understanding that in some circumstances it could be a pre-existing committee with other functions.

In a large enterprise, this Healthy Workplace Team should include representatives from various levels and sectors of the business, and may include health and safety professionals, human resource personnel, engineers, and any medical personnel who provide services. It is critical to have representation from the trade union(s) if applicable, and in any case to have at least half the members be non-management employees.

It is also critical to have equitable gender representation on this Team. As noted frequently in this document, women face unique and serious health, safety and well-being risks in workplaces, and their voices must be heard at every stage when creating a healthy workplace. It is not enough to add a "token woman" on the team; women should be present in equal numbers to men, ideally, or in numbers that reflect the makeup of the enterprise's workforce. If no women work in the enterprise, that in itself may be an indication that there is probably employment discrimination occurring, which should be addressed as a priority.

In a small enterprise, it is helpful to involve experts or support personnel from outside the organization if possible. For example, medical personnel from a neighbouring large enterprise or community occupational health clinic, a representative from a local industry-specific network, or from a local health and safety agency may be invaluable.[369]

As well as assembling the Team, this is a good time to assemble other resources that will be required. Ensuring that space to meet, time to meet during work hours, a budget, and minimal working supplies are provided will mean the committee has the resources necessary to do the work.

3. Assess
The first set of tasks that the Healthy Workplace Team should perform falls under the heading of "assessments." There are two broad categories of things that need to be assessed: (1) the present situation for both the enterprise and the workers, and (2) the desired future conditions and outcomes for both the enterprise and workers.

The present situation for the enterprise can be assessed using a number of different tools, depending on the size and complexity of the organization. In a large corporation, baseline data should be collected on employee demographics, sickness injury data, workplace related injuries and illnesses, short-term and long-term disability, turnover, union grievances if applicable, and concerns that have arisen from workplace inspections or hazard identification & risk assessment processes. Productivity data should also be documented as a baseline, if it is available. If a comprehensive hazard identification & risk assessment has not been done, it should be done at this time. Current policies or practices relating to

any of the four avenues of influence should be reviewed and tabulated (for example, take note if there are policies related to flexible work hours, volunteer time, or fitness club subsidies.)

In addition to assessing the present situation of the enterprise, it is necessary to assess the present situation with respect to the health of workers. In a large enterprise, this will require a confidential survey and/or health risk assessments. In the case of a survey, it is important to ask questions related to the four avenues of influence. That means asking questions about the organizational culture, leadership issues, workplace stress, non-work-related sources of stress, and personal health practices, as well as their concerns about the hazards they are exposed to in their physical work environment or in their community.

In an SME, this assessment may be a walk-through with a simple checklist, and some small group discussions with workers and their representatives. See Table 9.1 for more suggestions.

<u>The desired future</u> for the enterprise and workers must also be assessed. For a large corporation, this may involve some benchmarking exercises to determine how similar companies are doing with respect to the data just described. It may be important to do a literature review to read case studies of good practice, or recommendations for good practice. For individual workers, it is necessary to ask for their thoughts and opinions about what they would like to do to improve their working environment and health, and what they think the employer could do to assist them.

For a small enterprise, determining local good practice is important. Talking to local experts or visiting local enterprises that have addressed similar situations is a good way to find out what can be done, and get ideas on how to do it.

WPRO's Regional Guidelines for the Development of Healthy Workplaces[370] suggests the following methods of data collection:
- review of documents - inspection reports, accident and injury statistics, safety audits, absenteeism data, etc.;
- walk-through inspection - to identify hazards and potential health risks in the physical environment;
- environmental monitoring and health/medical surveillance - with the assistance of experts in occupational hygiene and medicine, it is possible to obtain data about physical and chemical agents in the workplace and the amount of worker exposure;
- written survey - a confidential and anonymous survey, either on paper or delivered electronically, to ask about the issues discussed above;
- focus group discussion - small group meetings facilitated by a leader with specific objectives in mind and structured questions. These are particularly useful in small enterprises or with groups of workers with low literacy. Focus groups are also useful to flesh out, or validate information obtained from a written survey.
- Interviews - more in-depth, face-to-face interviews may be held with key stakeholders or professionals;
- suggestion box - a way of soliciting anonymous suggestions, which may be more candid than opinions ventured in a group discussion.

Whatever methods are used to collect this information, it is important to make sure that women have as much opportunity for input as men.

"I think one central element is the risk assessment plan. The whole point is to have a careful examination of the workplace, defining potential risks and also putting sensible measures on how to control these risks, and monitor, and ensure that they stay in control. And the key issue is to have step-by-step guidance in enterprises, and then of course to record the findings in order to have review and auditing."
Interview #38, Czech Rep. OSH

Survey instruments should be confidential and anonymous, but should collect information regarding the sex of the participant, so that the information collected can be analyzed separately, to tease out issues that are more important to one gender than the other. If information is collected from focus groups, it is essential to provide a safe setting for women to freely voice their opinions, and not feel intimidated by male workers. In addition, men may sometimes feel reluctant to express their fears or concerns in a mixed gender group.

4. Prioritize

Once all the information has been collected, the Healthy Workplace Team must set priorities among the many issues identified, since there will possibly be too many problems to deal with all at once. If the enterprise is small and the number of significant issues is low (~5-10) then the employer and workers can probably use a relatively simple approach to choose the top items to deal with first.

Before attempting to set priorities, however, it is wise to discuss and agree upon the criteria to be used in making decisions about priorities. How will a decision be made as to which is more important – providing respirators for workers doing sand-blasting, or eliminating racial harassment from the workplace? In making these decisions, there are two critical things to take into consideration:

1. the opinions and preferences of the workplace parties, including managers, workers and their representatives; and
2. the position on Maslow's hierarchy of needs.

The first point is of paramount importance, but potentially dangerous if workers and their representatives are not knowledgeable enough about the risks to make informed decisions. This reinforces the importance of training and learning from others, which is discussed in Chapter 7.

The second point refers to a system of ranking human needs proposed by Abraham Maslow[371], which is often characterized as illustrated in Figure 9.3. Clearly, it is important to deal with issues closer to the base of the pyramid before worrying about those higher up. In most cases, problems related to physical safety and health are more basic and immediately threatening than those concerned with mental health and well-being, which is why countries usually develop legislation in this area first. Put crudely, inhaling silica in the workplace will kill a worker much more quickly than experiencing demeaning racial harassment will, although both are very unhealthy.

Figure 9.3 Maslow's Hierarchy of Needs

Chapter 7:
Process: How to Create a Healthy Workplace

chapters have discussed the "What?" and the "Why?" of a healthy workplace. But knowing what a healthy workplace is, and why it is important to move in that direction are not enough. This chapter will discuss the "How?" of creating a healthy workplace.

An enthusiastic and motivated leader may sit at his or her desk and dream up the ideal healthy workplace, push it through as much as possible, and then wonder why others do not support it, or why it fails after a short time. In many ways, the *process* of developing a healthy workplace is as critical to its success as the *content*. There are probably as many paths to a healthy workplace as there are enterprises. However, there are some general principles that are important to include in the process, in order to be sure that a health, safety and well-being programme meets the needs of all concerned, and is sustainable over the long run.

A. Continual Improvement Process Models

When some people get an idea for a project, they may jump into it with no planning, and then wonder why it fails. At the other end of the spectrum are those who plan, plan and then plan some more, and fall into "analysis paralysis" in an attempt to think of everything and get everything perfect the first time. With an appropriate process, these pitfalls can be avoided.

Dr. Edward Deming popularized the PDCA or Plan, Do, Check, Act model in the 1950s. It arose out of the scientific method of "hypothesize, experiment, evaluate." The concept recognizes that when undertaking any new endeavor, it is unlikely it will be perfect from the start, so process of continual improvement is a way to avoid costly errors or paralysis. The iterative principle in scientific research is reflected in the PDCA approach. A plan is made (Plan), implemented (Do), evaluated (Check) and improved upon (Act), a new approach is planned, implemented, evaluated and improved upon, in a never-ending upward spiral, always getting closer to the ideal. This is based on the belief that people's knowledge and skills may be limited, but will improve with experience. Repeating the PDCA cycle brings us closer and closer to the goal.

In the world of workplace health, safety and well-being, the PDCA cycle has been modified and sometimes expanded by individuals and organizations. Some variations are highly complex, suitable only for the most sophisticated, complex hierarchical organizations. There are variations with four differently named steps, variations with seven, eight, or ten steps.   These process models may be known as continual improvement systems, or as health and safety management systems. Table 7.1 compares some of the best known models, which are discussed below the table.

Table 7.1 Comparison of Continual Improvement/OSH Management Systems

Deming (PDCA)	CCOHS (OSH Works)	WHO Western Pacific Regional Guideline	OHSAS 18001	ILO (OSH Management)
Plan	Lead: management commitment, worker participation, OH&S policy	Ensure management support	OH&S policy	Policy
		Establish a coordinating body		Organizing
	Plan: legal & other, hazards & risks, workplace health, objectives & targets	Conduct a needs assessment	Planning	Planning & implementation
		Prioritize needs		
		Develop an action plan		
Do	Do: prevent & protect, emergency plans, train, communicate, procure, contract, manage change, document control, record control.	Implement the action plan	Implementation & operation	
Check	Check: measure & monitor, investigate incidents, audit & inspect, evaluate & correct	Evaluate the process and outcome	Checking and corrective action	Evaluation
Act	Act: review, improve	Revise and update the programme	Management review	Action for improvement

Canadian Centre for Occupational Health & Safety (CCOHS)

This WHO Collaborating Centre provides information on all aspects of health and safety to Canadians and the global community through web-based services. Its OSH-Works programme is an occupational health & safety management system that enterprises may subscribe to, and receive administrative and data management services.[372] It is based on Deming's PDCA, with the addition of the first component titled "Lead." This includes gaining management commitment, ensuring worker

participation, and formalizing the development of an occupational health and safety policy. The other steps are the same as Deming's original, but are fleshed out considerably to provide more guidance as to the activities that would occur in each step.

WHO Regional Office for the Western Pacific

As discussed in Chapter 3, the WHO Western Pacific Regional Office developed a model consisting of eight steps.[373] The first five steps are all activities that would fall into Deming's "Plan" section, emphasizing the importance of

this first step. As in the CCOHS example, the importance of gaining commitment from stakeholders is emphasized. It then suggests that a coordinating body or committee be established to share the work. The first activity of the committee is doing a proper needs assessment, followed by setting priorities and formalizing an action plan. These actions are then implemented, evaluated and revised as required. This model has been tested in many SMEs in developing and developed countries as discussed in Chapter 3, and found to be workable and appropriate.

OHSAS 18001
OHSAS 18001 is the internationally recognized assessment standard for occupational health and safety management systems.[374] It was developed by a selection of leading trade organizations, international standards associations and certification bodies to address a gap where no third-party certifiable international standard previously existed. It has been designed to be compatible with international quality standards, such as ISO 9001 and ISO 14001. It is used mostly by large corporations as part of their risk management strategy to address changing legislation and protect their workforce. It has five steps, emphasizing the importance of starting with an OH&S policy.

International Labour Organization
In 2001 the ILO developed their OSH management system,[375] which is a five-step process. Beginning with the establishment of an OH&S policy that emphasizes participation of workers and their representatives, the model then sets an Organizing step. This is intended to include establishing accountabilities and responsibilities, documentation and communication, to ensure that the infrastructure is in place to properly manage OH&S. Planning and Implementation includes doing a baseline review, determining OH&S hazards and setting objectives. Evaluation comprises performance monitoring and measurement, investigation of work-related injuries and illnesses, audit and management review. The last step, Action for

Improvement includes preventive and corrective actions and continual improvement.

B. Are Continual Improvement/OSH Management Systems Effective?
One of the most common recommendations in the literature is for employers to use some sort of OSH management system that includes a strong emphasis on evaluation and continual improvement. This is sometimes referred to as a process based on systems theory. A rigorous Cochrane-type systematic review of reports in the literature on this subject was carried out in 2007 by the Institute for Work and Health, a research institute in Toronto. The reviewers looked at the type of management system intervention, its implementation, intermediate results (such as increased action on OSH issues) and final effects including changes in workplace injury rates. They also looked at economic outcomes such as work productivity. The results of the studies that met the research criteria were almost all positive, with some neutral findings. There were no negative findings. The authors concluded that the body of evidence was insufficient to recommend for or

*"I would position healthy workplaces as part of organizational culture, and in a **managed system**, organizational culture is seen as the responsibility of the leadership group, to establish a culture of continual improvement, to establish a culture of empowerment and participation and involvement. Those are all part of the components from a healthy workplace perspective, of a respectful and safe workplace. So they very much go hand-in-hand. In fact I believe **the managing system can't be affective unless it has these tenets**. It's the foundation of the healthy workplace."*
Interview #3, Canada, OSH

against OSH management systems. In the authors' words: "This was due to: the heterogeneity of the methods employed and the OHMS studied in the original studies; the small number of studies; their generally weak methodological quality; and the lack of generalizability of many of the studies."[376] They emphasized, however, that this is a promising approach with generally positive results, and should be continued to be used while waiting for more rigorous evaluations.[377]

The Institute has concluded that while many work injuries and illnesses may be preventable, effective prevention requires coordinated action by multiple stakeholders. A systems theory on its own may not be enough. In trying to achieve coordinated action, practitioners can learn valuable lessons not only from systems theory, but also from knowledge transfer and action research. Systems theory, through a continual improvement approach, provides a broad view of the factors leading to injury and disability and a means to refocus stakeholder energies from mutual blaming to effective strategies for system change. Experiences from knowledge transfer can help adopt a stakeholder-centered approach that will facilitate the practical and concrete application of the most current occupational health scientific knowledge. Action research is a methodology endorsed by WHO and the US Centers for Disease Control and Prevention that provides methods for successfully engaging the stakeholders needed to attain sustainable change. Researchers affiliated with the Institute have proposed a five-step framework they call MAPAC (Mobilize, Assess, Plan, Act, Check) that combines concepts from the three fields.[378] These concepts are incorporated into the principles discussed below, as well as the process model recommended in Chapter 9.

C. Key Features of the Continual Improvement Process in Workplace Health and Safety

Enterprises will no doubt have different needs and situations that require them or motivate them to adopt one of these continual improvement models or some other one.

However, all of them have some common features that are regarded as essential components for success, as evidenced by their appearance in virtually all models. Ensuring that the following five key principles are included in the process used will therefore raise the likelihood that the process will move smoothly and achieve the desired results.

1. **Leadership engagement based on core values:** It is important to mobilize and gain commitment from the major stakeholders before trying to begin, since a healthy workplace programme must be integrated into the business goals and values of the enterprise. If permission, resources, or support are required from an owner, senior manager, union leader, or informal leader, it is critical to get that commitment and buy-in before trying to proceed. This is an essential first step. Key evidence of this commitment is the development and adoption of a comprehensive *Policy* that is signed by the highest authority in the enterprise and communicated to all workers, and which clearly indicates that healthy workplace initiatives are part of the business strategy of the organization. Understanding the underlying values and ethical positions of enabling stakeholders is critical. Commitment from them will only be sincere and solid if it is in line with their deeply held beliefs and values.

2. **Involve workers and their representatives**: One of the most consistent findings of effectiveness research is that for successful programmes, the workers affected by the programme and their representatives must be involved in a meaningful way in *every step* of

the process, from planning to implementation and evaluation.[379,380] Workers and their representatives must not simply be "consulted" or "informed" of what is happening, but must be actively involved, their opinions and ideas sought out, listened to, and implemented.

In many situations, achieving appropriate input from workers may require workers having a collective voice, through a trade union or other system of worker representation. Schnall, Dobson and Rosskam, when reviewing successful workplace interventions, go so far as to state unequivocally that "…strong collective voice is the singularly most important element found among all of the various interventions described. To date, few work organization change initiatives have succeeded in the absence of strong collective voice."[381]

The term worker "empowerment" is sometimes used, though this can be misconstrued to mean a shifting of responsibility to workers without concomitant authority - a recipe for disaster. One of the basic principles of action research is the active participation of those who will be affected by the changes.

Due to the power imbalance that exists in most workplaces between labour and management, it is critical that workers have a voice that is stronger than that of the individual worker. Participation in trade unions or representation by regional worker representatives can provide this voice. Chapter 7 mentioned some innovative ways of providing a collective voice for workers, even in small enterprises.

It should be noted here that effort must be made to specifically include female workers, who tend to have the least control over their work, and even fewer

opportunities for input into decisions than men in the workplace.[*] In cultures where women are not encouraged to, or even allowed to speak in front of men, it will be important to hold women-only focus groups to ensure input from them, and to reflect their perspectives in the data. Even in supposedly advanced Western cultures, often women hold more subordinate jobs than men and may simply feel

> *"The process is very important - the participatory process that engages workers themselves is very important…. By being invited into the process, the process can be part of the solution… so this is key."*
> *Interview #31, Netherlands, OSH*

uncomfortable speaking their thoughts in a mixed audience.

This principle of worker involvement underlies the internal responsibility system that forms the basis for health and safety legislation in place in most jurisdictions in Canada, Europe and Australia. This usually takes the form of a legislated requirement for a joint labour-management health and safety committee within an enterprise, with a mandate to make recommendations to the senior management of the enterprise, related to any health, safety and well-being concerns in the workplace. Shifting the responsibility for health and safety to everyone in the workplace, including workers, and away from a total reliance on external government enforcement, has been found to be highly effective in reducing workplace injuries and illnesses.[382, 383,384,385]

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[*] This speaks to the aspect of power relations at work and how this can be an obstacle to the creation of healthy workplaces. Powerlessness may be because of gender but also because of age, education, legal status, language, ethnicity, etc.

In addition, this involvement will ensure that the specific needs and requirements of the local culture and conditions are incorporated into the health and safety activities in the workplace.

3. **Gap analysis:** It is important to do the right things. What is the situation now? What should conditions be like ideally? And what is the gap between the two? When it comes to creating a healthy workplace, is it more important to remove a hazardous chemical from the workplace or reduce the amount of unplanned overtime? The answer to these questions may depend on who is asked. So it is important to assess the current situation: collect baseline data, do a needs assessment and hazard identification to determine the current state of affairs. Then determine the desired future, by means of a survey or other tool, and literature review to find out what is most important to, and will have the most impact on the people who work in the enterprise /organization. In a large corporation, determining needs and assessing hazards may involve a comprehensive literature review, baseline data analysis, multiple site inspections and a comprehensive survey of all workers. In an SME, it may be a walk-through with one manager and worker, followed by a focused discussion with all the workers or a representative group. What is critical is getting the involvement of workers and managers, and together determining what are the most important things to do first.

Sometimes well-meaning multinational corporations assume that what works in a developed country will work in a developing nation, and try to use a "one-size-fits-all" approach. Doing a good needs assessment will ensure that local conditions and culture are assessed and incorporated into any plans that are made, so that they are applicable and effective in the specific workplace involved.

4. **Learn from others:** This principle is especially important in developing nations and small businesses in any country. Often the people in charge of making the workplace healthier and safer are lacking the information or knowledge to do so. Even if all the components of the process are in place, the success of interventions depends on doing the right things, which requires some expert knowledge.

The principles of knowledge transfer can assist here. Knowledge transfer can be defined as "a process leading to appropriate use of the latest and best research knowledge to help solve concrete problems; information cannot be considered knowledge until it is applied."[386] If there are researchers in a local university or experts in a local safety agency, they may be able to assist in the translation of complex information into practical applications. Union representatives who have received special OSH training through their union, or occupational health and safety experts in larger enterprises in the community may have expert knowledge and be very willing to mentor and assist SMEs. There are many good sources of information on the internet.

Therefore, after determining what the needs are in the workplace, part of the planning step may be to visit other similar enterprises to see what local good practice

exists; access helpful websites such as those of WHO, ILO, CCOHS or EU-OSHA; and investigate resources that may be available in the community. (See Box 7.1 on WISE, WIND and WISH programmes.)

5. **Sustainability**: There are a number of factors that ensure sustainability of healthy workplace programmes. One that is key is to ensure that healthy workplace initiatives are integrated into the overall strategic business plan of the enterprise, rather than existing in a separate silo. Another is to evaluate and continually improve. After the chosen programmes or initiatives have been developed and implemented, it is important to check the efficacy of interventions. Did the initiative do what it was supposed to do? If not, how can things be changed to make it work?

This is the way the continual improvement cycle is closed: one cycle ends and the next one begins. Without this important step, there is no way to know if something has worked, is working, and is continuing to meet the changing needs of workers and the enterprise. Lack of this step is what causes many initially good interventions to be forgotten or not sustained. Evaluation can be as complex or as simple as resources allow, but it must be carried out, documented, and acted upon in order to ensure ongoing success.

D. The Importance of Integration

The larger an enterprise becomes, the more difficult it is for employees and managers to be aware of all that is going on, and the more probable it is that specialist positions will be created to divide the work to be done. This

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Box 7.1 Learn from Others: WISE, WIND and WISH

The ILO programmes named WISE (Work Improvements in Small Enterprises)[1,2] WIND (Work Improvements in Neighbourhood Development)[3] and WISH (Workplace Improvement for Safe Home)[4] have been applied with great success in several WHO Regions. These models are all based on the idea of participatory action-oriented training. Their six principles are:

1. Build on local practice
2. Use learning-by-doing
3. Encourage exchange of experience
4. Link working conditions with other management goals
5. Focus on achievements
6. Promote workers' involvement

The WISE process begins with a series of short training programmes with small groups of owners/managers of SMEs. Both the physical work environment, the social work environment and some personal health factors are covered in the interactive training, in which participants are encouraged to share ideas and problem-solve together. This is followed by the use of a WISE action-checklist in the workplaces, setting priorities and implementing solutions, followed by review and improvement. A key to success is the network of WISE trainers in the communities. Results have shown this method can result in very low-cost interventions that make significant improvements to the health and safety of the workplace.[5]

[1.] Work improvement in small enterprises: an introduction to the WISE programme. International Labour Office [1988].
[2.] Krungkraiwong S, Itani T and Amornratanapaitchit R. Promotion of a healthy work life at small enterprises in Thailand by participatory methods. *Industrial Health,* 2006;44:108-111.
[3.] Kawakami T, Khai TT and Kogi K. *Work improvement in neighbourhood development (WIND programme): training programme on safety, health and working conditions in agriculture.* 3rd ed. Can Tho City, Viet Nam: The Centre for Occupational Health and Environment, 2005.
[4.] Kawakami T, Arphorn S and Ujita Y. Work Improvement for safe home: action manual for improving safety, health and working conditions of home workers. Bangkok, ILO 2006.
[5.] Kogi K. Low-cost risk reduction strategy for small workplaces: how can we spread good practices? *La Medicina del Lavoro,* 2006;92(2):303-311.

often leads to work being done in "silos" – named after the vertical cylindrical storage structures used to store grain or other bulk materials in some parts of the world. The silo metaphor in the world of work refers to groups of people who work in isolation from each other without collaboration or communication between the groups. "Breaking down silos" is one of the most common reasons given for reorganizations within an enterprise, as it is recognized that this isolation of various work groups leads to inefficiency. In many large organizations, health and safety personnel work in one silo, "wellness" professionals work on health education in another silo, and human resource professionals are in their own silo, dealing with many issues related to leadership, staff development and the psychosocial work environment. All of these people in their individual areas are working on issues that directly relate to the health of workers, yet they are often unaware of, and even working at cross-purposes with, each other. In addition, the enterprise's management team, in particular those dealing with the operational areas of production or customer service, are working hard trying to increase quality and quantity of the product or service being delivered. Often these activities will work in direct opposition to the health of workers, even though, as we have seen in earlier chapters, the health of workers is critical to high levels of production and quality.

All of this points to the importance of integration of healthy workplace concepts, not only amongst those working on those aspects in particular, but also across the whole enterprise/ organization. Integrating workplace health, safety and well-

being into the way an organization is managed is the only way to ensure the health of workers and the enterprise at the same time. As Lowe points out, "a healthy organization has embedded employee health and well-being into how the organization operates and goes about achieving its strategic goals."[387]

Sorensen points out other reasons for integrating the various aspects of a healthy workplace, specifically integrating health promotion with occupational health & safety. She notes that there are:[388]
- additive and synergistic relationships to disease risk
- overlapping risks for high risk workers
- programme impacts on participation and effectiveness, and
- broader benefits for work organization.

Sorensen's subsequent research illustrated this. Combining health promotion with occupational health and safety interventions in manufacturing worksites to attempt to change smoking behaviour in blue-collar workers was more than twice as effective as health promotion alone.[389] How can integration be accomplished? There are probably as many ways of integration as there are enterprises, and each must find pathways to integration that work in the particular culture of the enterprise. Here are a few examples to stimulate thinking about ways to achieve integration:

- Strategic planning must incorporate the human side of the equation, not simply the business case, because inevitably the business case depends on the humans in an enterprise. Kaplan and Norton, two well-known experts in business strategic planning, developed a "Balanced Scorecard" approach to management that has been adopted by many major corporations in industrialized nations. It points out the requirement of measuring not only financial performance, but also

"Another idea I'm thinking of is the notion of integration between safety and health approaches… And also integration between preventive and clinical medicine. Clinical physicians must teach people to prevent occupational diseases… And also integration between public health and the committee approach must be combined in every country."
Interview #19, Japan, Public Health, Occ Med.

customer knowledge, internal business processes, and *learning and growth of employees*, in order to develop long-term business success.[390]

- Create and have senior management accept and use a health, safety and well-being "filter" for all decisions. Regardless of the decision being made by senior management, when it is time to make the decision, they normally would run it through several other criteria, such as the cost in terms of money, time and resources; the impact on their reputation in the community, etc. Workers' health must become one of these standard criteria that are considered in the decision-making process. To integrate health, safety and well-being into the process, it can be formalized in a checklist until it becomes second nature, just as considering cost is second nature.[*]

- Keep the various components of a healthy workplace in mind whenever an initiative to solve a health, safety or well-being problem is being planned. (See WHO definition of a healthy workplace in Chapter 3). For example, if there were a problem with MSDs among people who work all day at sewing machines, a common practice would be to examine the ergonomics of the operators in their workstations, and fix the physical environment to make it more comfortable. However, other contributors to the problem might be psychosocial issues such as workload and time pressure. And there may be personal health issues related to

physical fitness and obesity that are contributing to the problem. Or a lack of primary health care resources in the community may mean workers cannot be assessed in the early stages of pain. Therefore, an integrated approach combining work environment-directed (both physical and psychosocial), community-directed, and person-directed approaches to examine all aspects of the problem and potential solutions would be most effective.

- It is easier to develop technical skills in personnel than interpersonal or social skills, or to change attitudes. Therefore, one way to ensure that health, safety and well-being become integrated into the fabric of an enterprise is through the employee recruitment process. If the Human Resources process for recruiting new workers, and new managers in particular, includes criteria that consider attitudes towards health (physical and psychosocial) and interpersonal skills that will contribute to a healthy organizational culture, then healthy workplace practices have a greater chance of being integrated into everyday work. It will happen naturally because healthy workplace behaviours and attitudes will be second nature in the managers and workers being hired.

- What is rewarded is reinforced. A performance management system that rewards high output, regardless of how the results are achieved, will encourage people to take shortcuts or to use less-than-healthy interpersonal skills to get work done. On the other hand, a performance management system that sets behavioural standards as well as output targets, can reinforce the desired behaviour and recognize

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[*] This kind of Healthy Workplace Decision Filter checklist was developed in 2007 and is in use in the Operations Division, Ontario Ministry of Labour, Canada. For more information, contact: Dawn Cressman, Healthy Workplace Program Coordinator: +1.905.577.8395, Dawn.Cressman@ontario.ca or Christina Della-Spina, Healthy Workplace Project Assistant: +1.905.577.1327, Christina.Della-Spina@ontario.ca

people who demonstrate behaviours and attitudes that lead to a healthy workplace culture. Again, this is a way to integrate healthy workplace aspects into the fabric of the organization

- Use of cross-functional teams or matrices can help reduce silos. If an organization has a health and safety committee and a workplace wellness committee, they could avoid working in silos by having cross-membership, so that each is aware of, and able to participate in, the activities of the other. This principle can be applied to many other examples of working matrices.

The integration challenge illustrates one area where SMEs have an advantage. It is much less probable that silos will exist in a small enterprise, since it is harder to compartmentalize activities. However, even in a very small enterprise, if people (including the owner) do not understand the importance of communication, silos can still exist. This underscores the importance of worker participation discussed above. If workers in an SME are fully involved in the assessing, planning and implementation of healthy workplace programmes, it is less probable that poor communication skills will be a factor in the integration of all aspects of worker health into organizational health. Similarly, if key workers or supervisors do not demonstrate appropriate healthy workplace attitudes and behaviours, isolated healthy workplace "programmes" could still exist in a very toxic work environment, and there would be no integration of the various healthy workplace components.

Annex 1: Acronyms Used in this Document

ACGIH	American Conference of Governmental Industrial Hygienists
AFRO	WHO Regional Office for Africa
AMRO	WHO Regional Office for the Americas
BOHS	Basic Occupational Health Services
CCOHS	Canadian Centre for Occupational Health & Safety
CEEP	European Centre of Enterprises with Public Participation and of Enterprises of General Economic Interest
COMH	Consortium for Organizational Mental Healthcare (Canada)
CSR	Corporate Social Responsibility
EMCONET	Employment Conditions Knowledge Network
EMRO	WHO Regional Office for the Eastern Mediterranean
ENWHP	European Network for Workplace Health Promotion
ETUC	European Trade Union Confederation
EU	European Union
EU-OSHA	European Agency for Safety and Health at Work
EURO	WHO Regional Office for Europe
FCTC	WHO Framework Convention on Tobacco Control
GPA	Global Plan of Action for Workers Health
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HSE	Health and Safety Executive (United Kingdom)
IAPA	Industrial Accident Prevention Association (Canada)
ICOH	International Commission on Occupational Health
ILO	International Labour Organization
IRS	Internal Responsibility System
MSD	Musculoskeletal disorder
NCD	Noncommunicable diseases
NGO	Nongovernmental organization
OH	Occupational Health
OH&S	Occupational Health & Safety
OHS	Occupational Health Services
OSH	Occupational Safety & Health
PAHO	Pan American Health Organization
PDCA	Plan, Do, Check, Act
POSITIVE	Participation Oriented Safety Improvements by Trade Union Initiative
PTSD	Post Traumatic Stress Disorder
ROI	Return on Investment
SEARO	WHO Regional Office for South-East Asia
SESI	Serviço Social da Indústria (Brazil)
SME	Small or medium-sized enterprise
STD	Sexually transmitted disease
UEAPME	European Association of Craft, Small and Medium-sized Enterprises
UK	United Kingdom of Great Britain and Northern Ireland
UNEP	United Nations Environment Programme
UNICE	Union of Industrial and Employers' Confederations of Europe
US, USA	United States of America
WEF	World Economic Forum
WHA	World Health Assembly

WHO	World Health Organization
WHP	Workplace Health Promotion (as defined by ENWHP)
WIND	Work Improvement in Neighbourhood Development
WISE	Work Improvement in Small Enterprises
WISH	Work Improvement for Safe Home
WPRO	WHO Regional Office for the Western Pacific
WTO	World Trade Organization

Annex 2: Glossary of Terms and Phrases

NOTE: This glossary attempts to define terms and phrases as they are used in this document. These should not be considered universally accepted definitions.

Active transport: Active transport is physical activity undertaken as a means of transport and not purely as a form of recreation. Active transport generally refers to walking and cycling for travel to and/or from a destination, but may also include other activities such as the incidental activity associated with the use of public transport.

AFRO: WHO Regional Office for Africa. This Region includes all of Africa except for Djibouti, Egypt, Libya, Morocco, Somalia, Sudan, and Tunisia.

AMRO: WHO Regional Office for the Americas. This Region includes all of North, Central and South America, and is administered by PAHO.

Audit: A systematic and documented process for obtaining evidence from inspections, interviews and document review, and evaluating it objectively to determine the extent to which relevant criteria are fulfilled.

Avenues of influence: Broad over-arching ways or content areas through which an employer working in collaboration with workers can influence the health, safety and well-being of employees. Specifically, the four avenues of influence are interventions in the physical work environment, interventions in the psychosocial work environment, health promotion in the workplace, and involvement in the enterprise community environment.

Basic occupational health services: See occupational health services

Caregiver Strain: One type of work-family conflict; with the understanding that a "caregiver" is a person providing assistance to a young, elderly or disabled dependent, caregiver strain is sum total of the emotional, physical, and financial changes in the caregiver's day-to-day life that are attributable to the need to provide that care.

Case study of good practice: An example and description of how a programme, model or tool that meets the agreed criteria has been implemented in one workplace, community or other setting.

Civil society: The arena in any community of voluntary collective action around shared interests, purposes and values, distinct from those of the state. Civil societies include organizations such as registered charities, non-governmental organizations, women's organizations, faith-based organizations, trade unions, self-help groups, business associations, and advocacy groups.

Cochrane Collaboration: An international, non-profit, independent organization established to ensure that current, accurate information about the effects of health care interventions is readily available worldwide, through the publication of Cochrane Reviews (systematic reviews of the literature.)

Continual improvement process: A cyclical process that repeats stages of planning, action, measurement & evaluation, and correction & improvement, leading to an ongoing overall improvement in conditions.

Convention, ILO: Legally-binding international treaties related to various issues related to work and workers. Once a Convention has been passed by ILO, Member States are required to submit it to

their parliament for consideration for ratification.

Cost of stress: The financial cost to a business or society of the mental, physical and behavioural symptoms, diseases and disorders that result from prolonged stress. For example, a behavioural symptom of excessive stress in a worker may be increased absenteeism from work.

Decent work: A term developed by the ILO meaning work that is productive, and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives, and equality of opportunity and treatment for all women and men.

Disease prevention: Efforts to prevent employees from acquiring diseases that may result from exposures in the workplace, or from unhealthy lifestyles. Disease prevention activities may encompass both health protection and health promotion.

Employee: A worker who provides labour or expertise to an employer, usually in the context of a formal employment contract. See also ***Worker***.

Employer: A person or institution that hires employees or workers. This term is normally used to mean there is a formal employment contract with workers, but in the context of this document it also includes those who hire informal workers without a formal contract.

EMRO: WHO Regional Office for the Eastern Mediterranean. This Region includes the primarily Islamic countries of Northeast Africa (those excluded from AFRO, above), the Arabian Peninsula, plus Afghanistan, Iran, Iraq, Jordan, Lebanon, Syria and Pakistan.

Enterprise: A company, business, firm, institution or organization designed to provide goods and/or services to consumers. While often used to imply a for-profit business, in this document it is intended to include not-for-profit organizations or agencies, and self-employed individuals.

Enterprise community involvement: The activities, expertise, and other resources an enterprise engages in or provides to the social and physical community or communities in which it operates; and which affect the physical and mental health, safety and well-being of workers and their families. It includes activities, expertise and resources provided to the immediate local environment, but also the broader global environment.

EURO: WHO Regional Office for Europe. This Region includes 53 countries in Europe, plus all of the Russian Federation, the constituent countries/regions of Greenland and Svalbard, and Israel.

Fair employment: A term developed by EMCONET to mean one with a just relation between employers and employees that requires certain features be present: freedom from coercion, job security in terms of contracts and safety, fair income, job protection and social benefits, respect and dignity at work, and workplace participation.

Family - Work Interference: One type of work-family conflict; a form of role interference that occurs when family demands and responsibilities make it more difficult to fulfill work role responsibilities.

Framework: The key principles, description and interpretive explanation of a healthy workplace model.

Global Plan of Action on Workers' Health (GPA): Approved by the WHA in May 2007,

the GPA operationalizes the 1995 Global Strategy on Occupational Health for All, with the aim to move from strategy to action and provide objectives and priority areas for action. It takes a public health perspective in addressing the different aspects of workers' health, including primary prevention of occupational risks, protection and promotion of health at work, work-related social determinants of health, and improving the performance of health systems.

Hawthorne effect: A form of reactivity whereby subjects improve an aspect of their behavior being experimentally measured simply in response to the fact that they are being studied, not in response to any particular experimental manipulation.

Hazard: A condition, object or agent that has the potential to cause harm to a worker.

Health: A state of complete physical, mental and social well-being, and not merely the absence of disease.

Health promotion: The process of enabling people to increase control over their health and its determinants, and thereby to improve their health. This can occur through developing healthy public policy that addresses the primary determinants of health, such as income, housing and employment. In many developed countries, the understanding and common use of the term is reduced to health education and social marketing aimed at changing behavioural risk factors (smoking, lack of exercise, etc.)

Health protection: Measures taken in a workplace to protect workers from illness or injury due to exposure to physical, chemical, biological, ergonomic or psychosocial hazards or risks that exist in the workplace.

Health risk assessment (used in this document synonymously with the term *health risk appraisal):* A type of assessment tool that collects measures of health status (e.g., BMI, blood cholesterol, nutritional analysis, heart rate response to exercise). The assessment of risk is usually based on a combination of clinical reports/measures and self-reported information on health habits. In most cases, a health risk assessment requires a professional to administer the assessment to all employees. The health risk assessment usually results in individualized results and an aggregate report for the workplace. (NOTE: the term health risk assessment is sometimes used to refer to an assessment of the health risks in a workplace, through hazard identification and exposure assessment. It is not used that way in this document.)

Healthy workplace (WHO definition): One in which workers and the employer collaborate to use a continual improvement process to protect and promote the health, safety and well-being of workers and the sustainability of the workplace by considering the following, based on identified needs:
- health and safety concerns in the physical work environment;
- health, safety and well-being concerns in the psychosocial work environment including organization of work and workplace culture;
- personal health resources in the workplace; and
- ways of participating in the community to improve the health of workers, their families and other members of the community.

ILO convention: See Convention, ILO

Informal economic sector: The non-regulated labour market, which usually

involves workers with informal (unwritten) arrangements with an employer, and who are not documented as workers in government records. In many countries entitlement for social benefits (such as sick or maternity leave, paid retirement, or access to health care), and applicability of legal rules (such as limits on work hours, minimum wage) require a formal job contract.

Internal Responsibility System (IRS): A health and safety philosophy, often supported by legal mechanisms, that is based on the principle that every individual in the workplace is responsible for health and safety. The IRS specifically emphasizes the importance of worker involvement; supporting legal requirements often require joint labour-management health and safety committees to exist in the workplace. It contrasts with a system that relies exclusively on external authorities to enforce health and safety in the workplace.

Knowledge transfer: A process leading to appropriate use and application of the latest and best research knowledge to help solve concrete problems; information cannot be considered knowledge until it is applied.

Model: The abstract representation of the structure, processes and system of a healthy workplace concept.

Musculoskeletal disorders: Disorders of the muscles, joints, tendons, ligaments and nerves. Most work-related MSDs develop over time and may be caused by or exacerbated by the work itself or the working conditions, especially by excessive force, awkward posture, or repetitive motions. They generally affect the back, neck, shoulders, wrists and upper extremities: less often the lower extremities. Other terms used for MSDs are repetitive strain injuries or cumulative trauma injuries. Disorders may range from discomfort, minor aches and pains, to severe injury and disability.

Occupational health services: Includes primary, secondary and tertiary health prevention and promotion services, plus responsibility for advising the employer and workers on:

- the requirements for establishing and maintaining a safe and healthy working environment which will facilitate optimal physical and mental health in relation to work; and
- the adaptation of work to the capabilities of workers in the light of their state of physical and mental health.

Occupational health services focuses on the medical model and normally involves medical personnel such as nurses, physicians and other health care professionals, ergonomists, hygienists, safety professions, etc. Often referred to in the WHO context as Basic Occupational Health Services (BOHS).

OSH Management System: A management system is a framework of processes and procedures used to ensure an organization can fulfill all tasks required to achieve its objectives. An Occupational Safety and Health Management System enables organizations to improve their overall OSH performance through a process of continual improvement.

PAHO: The Pan American Health Organization. PAHO was established in 1902 as an international public health agency to improve health and living standards of the countries of the Americas. It now serves as the WHO Regional Office for the Americas.

Personal Health Resources (in the workplace): The supportive environment, health services, information, opportunities, and flexibility an enterprise provides to workers to support or motivate their efforts to improve or maintain healthy personal

lifestyle practices, as well as to monitor and support their ongoing physical and mental health.

Physical work environment: The part of the workplace facility that can be detected by human or electronic senses, including the structure, air, machines, furniture, products, chemicals, materials and processes that are present or that occur in the workplace, and which can affect the physical or mental safety, health and well-being of workers. If the worker performs his or her tasks outdoors or in a vehicle, then that location is the physical work environment.

Precarious employment: Employment terms that may reduce social security and stability for workers, defined by temporality, powerlessness, lack of benefits, and low income. Flexible, contingent, non-standard temporary work contracts do not necessarily, but often provide an inferior economic status.

Precautionary principle: A principle that suggests employers and workers should not delay interventions to improve workplace conditions and promote health simply because there is no strong scientific evidence of the intervention's effectiveness. Specifically, it states, "In the case of serious threats to the health of humans, interventions to protect or promote health should not be delayed due to acknowledged scientific uncertainty."

Presenteeism: The reduced productivity of someone who is present at work, but either physically or mentally unwell, and therefore not as effective, efficient or productive as they would normally be.

Primary care: The element within primary health care (see below) that focuses on health care services, including health promotion, illness and injury prevention, and the diagnosis and treatment of illness and injury.

Primary health care: An approach to health and a spectrum of services beyond the traditional health care system. It includes all services that play a part in health, such as income, housing, education, and environment. It can also be described as a set of values and principles for guiding the development of national health systems that provide universal coverage, are organized around people's needs and expectations, that integrate public health with primary care, and that replace command and control engagement or laissez-faire disengagement of the state, by participatory leadership.

Primary prevention: The part of preventive medicine that attempts to avoid the development of a disease. Most population-based health promotion activities are primary prevention measures. In workplace health, primary prevention includes most of the activities related to prevention and protection of workers against harm due to elements of the physical or psychosocial work environment, as well as health promotion activities and many interventions of the enterprise in the community.

Psychosocial work environment: The organization of work and the organizational culture; the attitudes, values, beliefs and practices that are demonstrated on a daily basis in the enterprise, and which affect the mental and physical well-being of employees. These are sometimes generally referred to as workplace stressors, which may cause emotional or mental stress to workers.

Ratification: When referring to ILO Conventions, ratification by the government of a country means making a formal commitment to implement the Convention. It is an expression of the political will to undertake comprehensive and coherent regulatory, enforcement and promotional action in the area covered by the Convention.

Risk: A combination of the probability of exposure to a hazard, plus the severity of the impact from exposure to that hazard.

Role overload: One form of work-family conflict; having too much to do in a given amount of time, when the total demands in time and energy associated with the prescribed activities of multiple work and family roles are too great to perform the roles adequately or comfortably.

Safety: The state of being protected against physical, social, spiritual, financial, psychological, or other types or consequences of failure, error, accidents, or harm. This can take the form of being protected from the event or from exposure to something that causes health or economical losses. It can include protection of people or of possessions.

SEARO: WHO Regional Office for South-East Asia. This Region includes Bangladesh, Bhutan, Democratic People's Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand and Timor-Leste.

***Secondary preventio*n:** The part of preventive medicine that is aimed at early disease detection, thereby increasing opportunities for interventions to prevent progression of the disease and emergence of symptoms. In occupational health, periodic health examinations, medical screening or medical surveillance activities would be considered secondary prevention.

Stress: Subjective feelings and physiological responses that result from workplace (or other) conditions that put an individual in a position of being unable to cope or respond appropriately to demands being made upon him or her.

Stressor: A condition or circumstance in a workplace (or other setting) that elicits a stress response from workers.

Survey: A formalized collection of quantitative and qualitative information, perceptions and opinions from employees through (preferably) confidential, anonymous, written/electronic means. May also include collection of this type of information through focus groups when/if appropriate.

Systematic review: A literature review of a single issue or question that attempts to identify, select and synthesize all high-quality research evidence relevant to that question. Systematic reviews of high-quality randomized controlled trials are the "gold standard" for evidence-based medicine.

Tertiary prevention: The part of preventive medicine designed to reduce the negative impact of an already established disease by restoring function and reducing disease-related complications. In occupational health, return-to-work activities and rehabilitation after an injury would be considered tertiary prevention.

Tool: A concrete instrument or measure that can be used by an individual or organization to collect and/or analyze and/or apply information, such as a questionnaire, checklist, protocol, flow chart, audit, procedure, etc.

Transformational leadership: A style of leadership that includes idealized influence (making decisions based on ethical determinants), inspirational motivation (motivating workers by inspiring them rather than demeaning them), intellectual stimulation (encouraging workers to grow and develop) and individualized consideration (allowing flexibility in how situations are handled.)

Work - Family interference: One form of work-family conflict; a type of role interference that occurs when work demands and responsibilities make it more difficult to fulfill family role responsibilities.

Worker: A person who provides physical and/or mental labour and/or expertise to an employer or other person. This includes the concept of "employee," which implies a formal employment contract, and also informal workers who provide labour and/or expertise outside of a formal contract relationship. In a larger enterprise or organization it includes managers and supervisors who may be considered part of "management" but are also workers. It also includes those who perform unpaid work, either in terms of forced labour or domestic work, and those who are self-employed.

Workplace: any place that physical and/or mental labour occurs, whether paid or unpaid. This includes formal worksites, private homes, vehicles, or outdoor locations on public or private property.

Workplace Health Promotion (ENWHP definition): The combined efforts of employers, employees and society to improve the health and well-being of people at work. This can be achieved through a combination of:

- improving the work organization and the working environment
- promoting active participation
- encouraging personal development.

This ENWHP definition is really a definition of a healthy workplace, and is far broader and more comprehensive than the usual use of the phrase "health promotion" as it is used in this document. See "health promotion in the workplace" above, for a definition of the way the term is intended in this framework.

Workplace parties: The various stakeholders that exist in a workplace; normally used to refer to workers and managers; sometimes used to include additional parties such as worker representatives (trade union representatives in the workplace).

WPRO: WHO Regional Office for the Western Pacific. This Region includes China, Mongolia, Republic of Korea, Japan, Australia, New Zealand, and all the island nations and other countries in South-East Asia that are not included in SEARO.

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