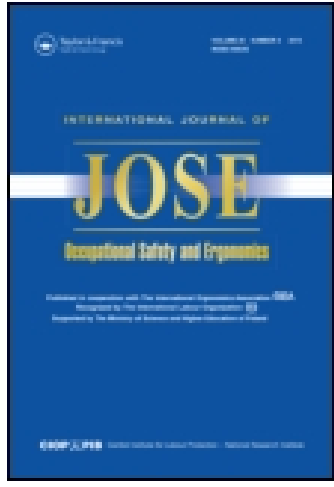


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### The Future of Occupational Safety and Health

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## 1. INTRODUCTION

With increasing economic development, a society's interest in its individuals and their safety and health increases. This societal interest in the individual is reflected in society's increased willingness to regulate the perceived hazards that affect the individual members of the particular society. With increasing education the general perspectives on an individual's right to a safe and productive life improve. In some cases such an increase is facilitated by social policies designed to achieve other ends. For example, a social policy to reduce family size may highlight the value of individuals and reduce a level of acceptability of the fungibility, which might exist in large families exposed to harsh economic conditions. This in turn, leading to an understanding that risks can be, and should be, controlled.

Such developing pressures for regulation will increasingly lead to two sorts of standards; historically, the standard has been one of specification. Indeed the history of safety regulation has shown the enormous benefits of specification standards. For example, in coal mining as specification standards were introduced in Germany, the United Kingdom, and around the world, safety increased through the establishment of limits for methane, coal dust, and equipment.

More recently, with the introduction of many new technologies and new management approaches, specification standards have been increasingly under attack, based as they are on the *á priori* premise there is one best method of improving the working conditions. With the rapid pace of process development, materials and process substitution, and automatic control such assumptions can increasingly be shown to be counter productive and specifications have given way to performance standards. Performance standards typically identify the desired state and leave the particular intervention to achieve that state to be determined on a case-by-case basis, often by the enterprise itself. In certain industries such as the automobile and chemical industries, and in certain societies this enterprise responsibility may be shared jointly between management and labor.

The drawback with such standards is that they are frequently difficult to evaluate prior to an incident and, by their very nature, require a higher standard of supervisory inspection. A further development of this philosophy might be seen in the Directives of the European Union, which, for example, may require risk analysis of jobs without specifying the nature of the risk analysis or identifying the interventions necessary to cope with the risk.

The tripartite view of safety, (i.e., involving government, employer, and labor), prevalent throughout the European Union is perhaps even more likely to produce the improvements necessary from such an approach.

## 2. ECONOMICS

In many developed countries, the costs associated with the absence of workers resulting from injury or sickness are, to various degrees, incorporated in the management decision-making process. In the United States the insurance costs, involving the total cost of medical treatment and indemnity, (i.e., lost wages) are paid by the employer, as is the bulk of the worker's family health insurance. Nominally, this provides a direct incentive as such costs are a direct component of the profit and loss account of an enterprise. Historically, however, such costs are borne at corporate levels rather than at the level of the decision-making manager. Thus, on a quarter by quarter budgeting cycle, it may appear cost effective to leave un-remedied a risk, as the decision-making unit may not be called upon to pay for the subsequent losses. In the last decade this has begun to change, there has been an increasing tendency to ensure that insurance costs are borne directly by the unit responsible for causing such losses, thus bringing at least partial costs to the decision-making process.

In societies with heavy commitments towards socialized medicine the situation arises where the medical costs and maybe even the disability costs of lost wages are borne by the society as a whole, through, for example, the National Health Service of the United Kingdom. Thus, the economic impact of inadequate management decisions remains, but at a significantly reduced level in the decision-making process.

In developing countries, such as China, tremendous progress has been made in developing Western-style economies, utilizing management models and techniques of modern Western management accounting. However with the traditional low cost of labor and, until recently, the significant and unreduceable overheads involved in factories owning housing, hospitals, and schools, the costs involved in safety and health have been largely ignored, other than in certain of the foreign-owned Enterprises.

With increased attention being paid to the expenses associated with inadequate safety and health, an effort has developed to determine the cost aspects of the process that leads to an injury becoming a disability. In most societies, the fact that someone is injured aggregates very little cost to the enterprise. However, if the injury is disabling (i.e., requires time away from the workplace) then frequently this so-called indemnity cost of replacing lost wages is matched by a greater increased medical cost burden. This has led, and is leading to, innovative approaches to ensure that workers are able to stay in the workplace, despite injury or health conditions. The introduction

of managed care, rehabilitation, allocation to light duty, or alternative tasks are all examples of changes in the safety and health environment arising from the concept that, even post injury, disability can be managed if not actually controlled.

This process is a far cry from requiring workers to stay in hazardous and unhealthy environments, which was typical of the Victorian environments and of early 20th century management styles. Instead, there is significant evidence to suggest that, in addition to maintaining an economic advantage for the enterprise, the inclusion of the injured worker in his or her workplace society has major benefits for the injured individual. Indeed, there is a body of research showing that the ejection of a worker from his or her working environment has major psychological and sociopsychological ill effects for the injured worker and potentially the whole worker's family.

With the increase in financial oversight of injury and disability costs, there is a tendency to pursue normal, financial control approaches and to examine further cost implications—in particular of the so-called uninsured costs. Uninsured costs are the corollary costs following an accident. Typically the direct costs are seen as the insured costs (i.e., the costs for medical treatment plus the lost wages), the exact formulation depending on the particular society. Uninsured costs are those costs that might also result, for example, from lost production, a decrease in quality, when the product or process is contaminated as a result of the accident, an increased labor turnover by colleague workers, the lost time of such workers in the immediate aftermath of such accident and the supervisory activities required to deal with the situation. Historically, ratios of direct to indirect costs have been fabricated and reproduced, from one text to another. Consequently they have as such, had little credence with management trying to make financial decisions, which affect workplaces. However in the early 1990s the British Health and Safety Executive did significant and detailed follow-up studies on a number of accidents, publishing a report, which established indirect costs as between 8 and 30 times greater than the actual cost of medical treatment and lost wages. These ratios are high, and are clearly dependent upon the process, but it should be noted are dependent on the social benefits, which in the United Kingdom are borne by broader society, rather than being the sole responsibility of the employer.

Further pursuit of such economic or financial control approaches may lead to consideration of the costs that arise owing to the absence of the worker from the workplace. Such costs include lost production, retraining of other workers, overtime premium in order to meet production schedules, and

the decrease in quality as other workers assume responsibility for the output. Currently, this is producing a relatively small number of forward thinking employers to become concerned with, and involved in, what the worker is exposed to outside the workplace. In fact, in the United States twice as many workers are killed at home as in the workplace. Thus, whether the worker is injured at work or outside work, the costs that arise from absence from work are the same. For the same reason there is even a significant interest in the risks faced by a worker's family—possibly with a little more emphasis on maternal absences, which may result from childhood sickness and injury.

In the United States such an interest in home safety is also driven by another economic driver, as most of the health benefits for covered individuals are in fact paid by the employer.

Thus, overall the economic drivers assume the relationship that reducing the incidence of injury and disease will ease costs associated with the production process. Conversely, the attempts to reduce costs by an enterprise are likely to lead to reductions in the levels of injuries and disease. There is however a potential risk involved in this approach. As the financial controllers pursue cost reduction, the costs associated with individual differences can be determined, which poses risks that, in future, will need close examination and potentially societal, that is, governmental intervention. Such individual differences could include gender, lifestyle, family history, and genetic disposition. Significant ethical questions will also arise from such increasing financial sophistication; current questions for example include the utilization of individuals with significant noise-induced hearing loss in noisy environments, or the prohibition of all women of childbearing years from work in high-lead environments. More generally the development of Threshold Limit Values and the relationship of such levels to the distribution of susceptibilities in the exposed cohort is already a part of the legislative debate.

### 3. CORPORATE VALUES

The third driver is that presented by corporate values. The impact of catastrophes on the actual economic survival of corporations is accelerating a trend, exhibited by the better corporations, to develop specific corporate values to control its dealings with workers, customers, and neighbors. Although driven by the negative pressure from catastrophes such as the use of asbestos, the Bophol Incident, and the use of Firestone tires, companies that

successfully establish corporate values in dealing with worker, neighborhood, product, and customer safety see other benefits. Benefits that may remove the trend of commoditization from the product or service that is being offered. As such, in almost all sectors of society there is an increasing interest by senior management in brand development and protection. The reputation as a good employer of safe products turns out to be very significant in the development of new business, maintaining old business, attracting and retaining high quality employees and, potentially, maintaining a premium component to product pricing.

Many major corporations have embraced this wholeheartedly and pursue safer and healthier workplaces as a corporate value. Frequently corporate values are identified in writing and supported by the chief executive officer, some companies even going so far as to produce reports, equivalent to the corporate annual report, addressing safety and environmental health effects.

The concerns and interest in brand will surely be strengthened by the process of globalization—and the backlash of public opinion. A steady stream of investigative reporting highlights worker safety and health abuses in the overseas manufacturing process of internationally recognized corporations. On an individual basis, corporations operating internationally are demanding global standards equivalent to the best practices of the home country. This trend seems to be inevitable as consumers are engaged with corporate values in their decision processes and are willing to use boycotts and stockholder pressures to support their views. Indeed in 2001 a whole industry—the American chocolate industry—accepted responsibility for working conditions at cocoa plantation growers far removed from the manufacturing process.

#### 4. CONCLUSION

Thus, three domains are exerting pressure to improve health and safety. Society's interest, corporate interest, and the manufacturing interest provide reasons to enhance the safety and health of workplaces and workers. As countries develop industrial infrastructures that allow considerations beyond basic survival, governmental involvement, cost benefit, and market forces will create continuing pressure for improvements in safety and health. The actual nature of the developments and the balance between these three domains will remain an idiosyncrasy of particular societies at particular times.