RESEARCH REPORT

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JUST AN OCCUPATIONAL HAZARD?

POLICIES FOR HEALTH AT WORK

SARAH HARVEY

KING'S FUND INSTITUTE

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No 4 in a series of research reports on current health policy issues.

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SUMMARY

Policies for Health at Work analyses the impact of employment on health in Britain and reviews the disparate elements of government policy which affect workers' health. In the 1980s there has been a worrying increase in major accidents in the workplace. There is also growing awareness of the extent to which work affects health, both directly and indirectly, and in positive and negative ways. Yet preventive strategies have not faced up to these challenges. There is now a clear case for a new approach to occupational health.

At national level occupational hygiene, occupational health services and compensation for work related injury and diseases have been viewed as largely separate policy arenas. *Policies for Health at Work* argues for a comprehensive approach to occupational health. This requires the co-ordination of strategies across government departments. Within individual firms it needs recognition of the connection between the physical and mental health of the workforce and working conditions, including both the work environment and the way in which work is organised. It also demands a greater understanding of the health impacts of work by primary health care professionals.

Drawing on international experiences, the report outlines a number of strategies which could form the basis of such an approach. Incentives for more effective self-regulation by industry itself, an extension of the coverage and scope of occupational health services and greater participation of workers at all levels in health and safety issues are essential to securing improvements in workers' health. The report argues that an occupational health policy should not be drawn up in isolation, but as part of a coherent strategy for achieving Health for All by the year 2000.

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GLOSSARY

APAU	Accident Prevention Advisory Unit
BMA	British Medical Association
CIA	Chemical Industries Association
COSHH	Control of Substances Hazardous to Health
DHSS	Department of Health and Social Security
EAP	Employee Assistance Programme
EEC	European Economic Community
EMAS	Employment Medical Advisory Service
HFA	Health for All
HSC	Health and Safety Commission
HSE	Health and Safety Executive
HSWA	Health and Safety at Work Act
ILO	International Labour Organisation
ISRS	International Safety Rating System
NAHA	National Association of Health Authorities
NIOSH	National Institute for Occupational Safety and Health
NUPE	National Union of Public Employees
OHS	Occupational Health Service
OPCS	Office of Population Censuses and Surveys
RCN	Royal College of Nursing
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurences Regulations
ROSPA	Royal Society for the Prevention of Accidents
SOHP	Sheffield Occupational Health Project
SRSCR	Safety Representatives and Safety Committee Regulations
WHO	World Health Organisation

1 INTRODUCTION

Work can damage your health! The dictum that work is good for you has been repeatedly challenged and qualified. Workers at all levels are increasingly aware of the health and safety hazards that their jobs entail. New technology and legislation have enabled hazardous substances to be detected and limited to increasingly smaller amounts. The passing of the Health and Safety at Work Act in 1974 was heralded as one of the most progressive pieces of employment legislation in Europe. Closer inspection, however, reveals that in the 1980s all is not well. Fatal and major accidents have shown a worrying increase, particularly in smaller companies, and the growing number of small businesses has made enforcement of health and safety legislation difficult. Policies for health at work are fragmented and despite the prominence given to prevention and health promotion in health policy, strategies focusing on the effects of work on health have been limited. This report examines the impact of employment on health and reviews the disparate elements of occupational health policy in Britain. Drawing on international experiences it outlines some of the policy options for improving the health of workers.

1.1 Work and Health

The mechanisms whereby work affects health are numerous and far reaching, but four key areas can be identified. First, work provides a source of income. As such it has an indirect effect on health by determining an individual's (or family's) ability to pay for goods and services. In turn, a person's health will affect their ability to work and earn. Second, the quality of the work environment and the work process itself may affect workers' health. The direct effects are seen in occupational accidents and diseases. These fall unevenly on the working population; those working in manual jobs or in hazardous industries being exposed to greater risks. Working conditions can also be contributory factors in major causes of death such as heart disease and lung cancer (Marmot and MacDowall, 1986). Third, the outputs of work processes, including consumable goods and services and waste by-products, affect both the health of workers and that of the wider population. Fourth, work conveys psychological costs and benefits. Paid work, in particular, is a source of self esteem and unemployment often has negative consequences for mental health. In each of these ways work may have a positive or negative impact on health. Despite these connections, the relationships between work and health have been underplayed in health services provision, in prevention and health promotion strategies and in research on social policy.

At national level, occupational health policy has developed piecemeal in three largely separate areas. Occupational health and safety standards and occupational health services each offer preventive approaches to the problem. The former has been largely the responsibility of industrial hygienists and specialist safety engineers, whilst the latter has traditionally been associated with the medical and nursing professions. Compensation for illness and injury is the third area of policy and aims to ameliorate the effects of work hazards. But measures designed to control or improve the health of workers have been devised mainly as elements of employment policy. Health policy has shown little explicit recognition of the role of work as a determinant of health. To identify the factors which might explain this apparent neglect, we need to look more closely at health policy and the underlying interests involved in workplace health and safety.

1.2 Policies for health

In Britain the role of prevention and health promotion in improving health status has been recognised for over a century. The publication of the Red Book, 'Prevention and Health: everybody's business', in 1976 marked the beginning of a reappraisal of prevention in health policy (DHSS, 1976). More recently, the Government has demonstrated its commitment to a broad ecological approach to health promotion by endorsing the World Health Organisation's (WHO) Health for All 2000 initiative (HFA). Whilst the significance of this approach is recognised at the conceptual level, to date most interest in HFA has focused on monitoring progress towards defined targets, rather than on devising practical strategies for achieving these objectives. There has been little development in government policy of measures explicitly targeted at ecological determinants of health. There is nothing that could be identified as a comprehensive health policy along the lines envisaged by the WHO. Other countries, such as Canada, have adopted a more coherent programme of policies aimed at improving health.

Central to HFA is the reduction of inequalities in health. It is a sad fact that despite the achievements of the National Health Service (NHS) in improving the availability of health care, there are still significant differences in health status between occupational classes and for some conditions the gap may be widening (Marmot and and McDowall, 1986; Whitehead, 1987). Strategies to reduce these differences need to focus on the key determinants of class inequalities including living and working conditions. The European targets for HFA make explicit reference to occupational health as a priority area. Target 25 states:

> *By 1995, people of the region should be effectively protected against work related health risks. The achievement of this target will require the introduction of appropriate occupational health services to cover the needs of workers; the development of health criteria for the protection of workers against biological, chemical and physical hazards; the implementation of technical and educational measures to reduce work related risk factors and the safeguarding of specially vulnerable groups of workers (WHO 1985).*

The effects of work on health are a neglected area of health policy in Britain. The Black report noted:

> *In our studies of inequalities in health, we have been struck by the ill developed nature of conceptions of and deprivation at work (DHSS, 1980, p. 334).*

There is no single reason for this, but a number of factors may be involved. Four are considered here.

First, there is a dearth of reliable information on the scale and nature of the problem. Official statistics underestimate the extent of occupational injury and ill health. Whether this is a cause or result of inadequate recognition of the effects of work is difficult to determine. International experiences suggest that better systems of monitoring can be developed. The poverty of information is in part due to the problem of defining which conditions are associated with occupation and which are not. For some diseases, it can be difficult to prove beyond reasonable doubt that work hazards were a contributory cause. For a number of reasons, occupational factors have tended to be omitted or overlooked in explanations of the aetiology and natural history of physical and mental illnesses (Blane, 1986). Traditional approaches to occupational disease and ill health, for instance, relying on medical expertise, have attributed little significance to workers' perceptions of their own health and the hazards to which they are exposed. Historical accounts of the recognition of conditions such as asbestosis (Sweeney and Castleman 1979), black lung disease (Smith, 1981) and lung scarring from man-made mineral fibres (Webb et al., 1988) as occupationally related demonstrate the political sensitivity of the issues and the existence of parties with conflicting interests. In the case of black lung disease in the United States, company doctors sided with employers and actively denied the contribution of occupational factors in the milder cases of pneumoconiosis and blamed housing conditions and alcoholism. Some physicians referred to lung disease as an 'ordinary condition'. One implication of defining work-related conditions as natural and inevitable is that the employer need not take any responsibility for developing preventive strategies (Smith, 1981).

Navarro (1986) offers a second explanation for the lack of emphasis on workers' health in health policy. He argues that in the health field work is typically understood as a source of income and that individuals are seen as consumers rather than workers. He suggests that this might explain the historical emphasis in government policy on compensation payments rather than preventive strategies based in the workplace. The prevention of occupational accidents and diseases, however, has received greater attention in recent years. But the 'individual as consumer' is also relevant to explanations of the types of preventive measures that have been adopted. If there is a general consensus that improvements in workers' health can be achieved by adopting preventive strategies, there is far more controversy over the form that these strategies should take.

As with health promotion measures generally, workplace prevention and health promotion programmes can follow two distinct theoretical models. The first blames individual lifestyles for poor health, whilst the second lays emphasis on the significance of structural and social factors (Anderson, 1983). Whereas control of working conditions has had a long, if chequered, history the introduction of preventive programmes based on individual risk behaviours is relatively recent.

In the United States, workplace health promotion programmes are now widespread. The individualist version of prevention has proved popular with US employers, not least for the reason that employers pay one-half the societal health bill and health promotion programmes are perceived as a means of reducing health care costs (House and Cottington, 1986). The individualist approach focuses on employees as consumers. Personal behavioural factors are given greater emphasis as determinants of health than environmental, social and psychological elements which are connected with their role as workers.

A third factor is related to the complex matrix of interests, experiences and responsibilities for health and welfare. Employers and their representative organisations, employees, trade unions, the Departments of Health and Employment, insurance companies, occupational health doctors and non-medical experts, approach the issue of occupational health and safety with quite different concerns and values. These include the costs and benefits of occupational health services, the role of the state and the private sector, corporate image, productivity, the balance of risk against income, and conflicts over power and control. These factors need to be understood and taken into account if realistic strategies for improving health at work are to be developed. It is easy to simplify these interests by depicting the state, employers and employees as monolithic groups with opposing interests. This is by no means the case; different grades and types of workers vary in their exposure to work hazards, and in their perceptions of and responses to risk. Generally speaking, the people with the most direct interest in and experience of the effects of working conditions on health are those whose work brings them into direct contact with physical and mental stressors. Workers may, however, remain unaware of hazards or choose to underplay the significance of risks in the absence of alternative job opportunities.

A further explanation for the low priority given to the impact of work on health may lie in the organisation of health services and the interests underlying that structure. Occupational health services are provided separately from the NHS and the state does not assume responsibility for their provision. The Heath and Safety Commission (HSC) admits that:

> *The separation of responsibility for occupational health from the NHS has inevitably led to a lower profile for occupational health issues within the NHS preventive, diagnostic, advisory and treatment systems than might otherwise have been the case (HSC, 1988, p. 22).*

It has become increasingly difficult to distinguish between disease and ill health arising from working conditions and that arising from other causes (EMAS, 1985), but the dichotomy of occupational versus non-occupational diseases has persisted in the organisation and delivery of health services. Historically, this distinction has been fostered by different professional groups intent on preserving their specific areas of expertise (Weindling, 1981). General practitioners feared the encroachment of occupational health doctors on their domain, whilst the latter saw the importance of securing the designation of occupational medicine as

a separate medical specialty. Weindling points to the preference in government policy for compensation and suggests that, in economic terms, this response may be less challenging to employers than policies based on the prevention of occupational hazards.

Changing conceptions of the determinants of health and illness, the organisation of health care in Britain, poverty of information on the true extent of occupational illness and injury, the relative power of different interest groups in society, and compartmentalisation of policies for health and policies for employment, may all help to explain why the effects of work on health have received little attention in general prevention and health promotion strategies.

The remainder of this report is organised in the following way. Chapter 2 identifies the available data documenting the impact of work on health. Chapters 3 to 5 outline the various strategies designed to limit, prevent, or ameliorate occupationally related ill health under the headings, occupational hygiene, occupational health services and compensation. The report concludes with a more speculative discussion of policy options for a preventive approach to health and work in chapter 6.

At the outset, it might be helpful to provide some clarification of terminology. The terms 'work' and 'employment' are often used interchangeably but are not the same. Work is a broad term which includes both paid and unpaid labour, in the formal labour market or external to it. Work, therefore, includes domestic labour and activities performed by people who are, by their own or official definitions, under — or un-employed. The term employment is used to refer to paid employment. For the most part, this report is concerned with employment and its effects on health, though the evidence that unemployment can be hazardous to health will be briefly discussed. The term 'workers' is used broadly to refer to all those who are employed. It therefore covers a wide variety of occupations and positions in the employment hierarchy, from shop floor to senior management.

2 HEALTH IMPACTS OF EMPLOYMENT AND UNEMPLOYMENT

2.1 Introduction

Interpreting evidence on the impact of employment on physical and mental health is complex: official records are limited in their coverage and the research literature is rife with conflicting assertions, inconsistencies and inadequate causal explanations.

With these limitations in mind, the aim of this chapter is to demonstrate the extent to which employment affects the health of workers. Typically, the effects of unemployment and employment on health are considered separately. In some ways this is

BOX 1 · UNEMPLOYMENT AND HEALTH

The problem of data

In establishing the effects of unemployment on health we must rely virtually exclusively on surveys. In general terms, the evidence suggests that the unemployed are less healthy than the employed and that the unhealthy have a higher chance of becoming and remaining unemployed. There is, however, far less certainty about whether the relationship between unemployment and health is causal, primarily because unemployment rates, morbidity and mortality measures are strongly associated with poverty. There is also something of a chicken and egg problem of whether unemployment or ill health comes first. In this sense the timing of measurements of changes in health status is crucial. The method by which health is measured varies in the research: self-reported health may lead to different conclusions from, say, psychological measures derived from standard questionnaires. Centrally collected data such as the Office of Population Censuses and Survey's (OPCS) Longitudinal Study has been used to analyse differences in mortality between employed and unemployed people, but can only identify associations between variables not demonstrate causation.

Unemployment and mental health

Paid employment conveys psychological benefits associated with self esteem and a sense of identity: the corollary is that unemployment can have a negative impact on an individual's psychological health. Three explanations may be offered for the association between unemployment and poor mental health. First, those in poor mental health are more likely to become unemployed and have difficulty in being re-employed. Second, psychological health may deteriorate during periods of unemployment. Finally, poverty and other aspects of deprivation associated with unemployment may lead to changes in mental health.

The observed effects of unemployment on an individual's health vary. This is due to the person's previous mental state and employment and their attitude to work in general. In a survey of 954 unemployed men, for example, one-fifth reported deteriorating mental health after job loss, including symptoms such as increased anxiety, depression, lack of concentration and an inability to sleep. Eight per cent of the sample, however, reported improvements in psychological health since becoming unemployed (Jackson and Warr, 1984). The DHSS cohort of unemployed men, however, produced no evidence of deterioration in self-reported health following unemployment (Moylan et al., 1984). The factors associated with unemployment which affect mental health include poverty, restricted environments and behaviour, lack of time structure to the day, reduced scope for making decisions and acquiring skills, anxiety about the future and reduced social contact and status (Warr, 1985). Some of these stresses may also be experienced by people who are employed. Routine, low paid work in which there is limited scope for making decisions, for example, has been shown to affect self-esteem and stress (Schwalbe and Staple, 1986). There is also an association between unemployment and both suicide and parasuicide. As with other indicators of mental health, the evidence is not sufficient to prove whether unemployment triggers suicide (Platt, 1984).

Unemployment and physical health

Much of the evidence on the relationship between unemployment and physical health is derived from surveys which were not specifically designed to address the question directly. The OPCS Longitudinal Study, for example, has been used to demonstrate links between unemployment and mortality. The unemployed seeking work had higher standardised mortality ratios than the employed even when age and class were controlled and the excess was present in all major causes of death (Moser et al., 1984). The authors were cautious in their interpretation of the results and were unable to conclude whether the association was causal. Others have placed more significance on the data. Scott-Samuels' (1984) interpretation is that for every 2000 men seeking work, two will die each year as a result of unemployment. Social class and behavioural risk factors complicate interpretation of the significance of mortality variations. Social groups with the highest morbidity and mortality rates are those most likely to become unemployed and to suffer multiple deprivation (Sinfield, 1981). From a comprehensive review of the literature on unemployment and physical health, Cook and Shaper (1986) conclude that the greatest health problems faced by the unemployed are related to their class rather than employment status.

In cases where working conditions are poor, unemployment or retirement can lead to improvements in physical health. Froehlich (1983) suggests that the physical health of 21 per cent of workers improves following unemployment, but in 24 per cent of cases their condition deteriorates.

Unemployment and families

The association between unemployment and health is not only limited to the individual worker, but can also be observed in their spouses and families, though again it is difficult to ascertain which factors are causal. Spouses of the unemployed have been shown to exhibit deterioration in mental health (Brown and Harris, 1978). A study of babies born in Glasgow showed that the mean birthweight of babies with unemployed fathers was 150g lower than babies of the employed, and babies with slow rates of growth were also more likely to have unemployed fathers (Cole, Donnet and Stanfield, 1983). One problem with the study was that it understated the cumulative effects of employment history over time.

unfortunate: employment, unemployment and retirement are intimately linked. Some of the mechanisms whereby unemployment affects health (such as poverty and psycho-social stress) apply equally to people in paid employment or who are retired. Moreover, the effects of the work environment on health will be better understood if the problems associated with changing employment status are known.

A distinction is made in officially collected data between occupational accidents and occupational diseases. Approaches to the prevention of these conditions have also tended to follow this somewhat arbitrary distinction. It is important to stress, however, that both injuries and occupational ill health are part of the same problem, being indicative of the priority given to workers' health.

The Chapter is divided into three sections. In 2.2 the effects of unemployment on health are summarised. Sections 2.3 and 2.4 examine trends in occupational injuries and diseases respectively.

2.2 Unemployment and health

The impact of unemployment on physical and mental health was well researched in the 1930s. In recent years there has been renewed attention devoted to the health consequences of unemployment and to questions such as:

- Is ill health caused by unemployment or are the sick more likely to lose their jobs?
- Is the association between unemployment and poor health due to poverty?
- Does unemployment affect both mental and physical health?
- If aspects of employment are bad for health will workers' health improve if they become unemployed?

There have been several comprehensive literature reviews which summarise the key trends and relationships (Watkins, 1986; Smith, 1987; Bartley; 1988). The main points to note are set out in Box 1.

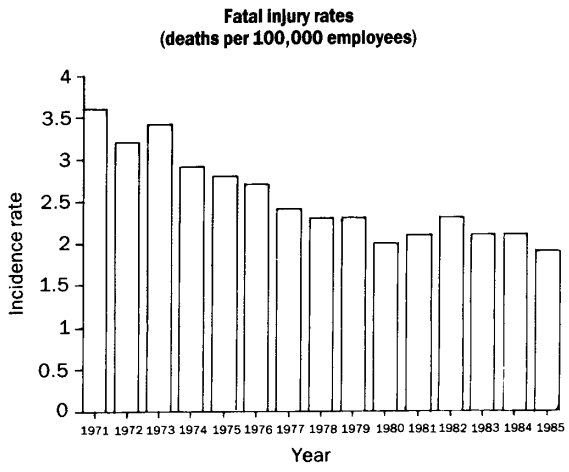
2.3 Accidents at Work

There are different arrangements for the reporting of workplace accidents and for occupational disease. This is primarily because accidents can be readily identified at the time they occur, whereas disease usually requires medical diagnosis. Official data on both work-related accidents and diseases, however, are notoriously imprecise and underestimate the true scale of the problem. Employers are not always aware of their duty to report accidents and disease. Moreover, the identification of illnesses as being occupational is by no means clear cut and causal associations can be difficult to prove.

The direct effects of occupation on health are most clearly seen in fatal and major accidents in the workplace. Information on workplace accidents is derived from statutory reporting to the Health and Safety Executive (HSE) and from social security claims. Changes were made in the reporting system in 1981, 1983 and 1986. This means that trends in workplace accidents from before 1981 are unlikely to be very meaningful. Prior to 1983, information was obtained indirectly from industrial injury benefit claims made to the DHSS. In 1983, this benefit was largely replaced by statutory sick pay administered by employers. The only information on occupational injuries and accidents now collected by the Department of Social Security (DoSS) is on claims for longer spells of disablement after the fifteenth week of illness. This has meant a loss of information on accidents resulting in more than three days absence from work. But the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) introduced in 1986 aims to reinstate this information.

Only a small proportion of workplace accidents are fatal. As an indicator of trends in workplace health and safety, however, they are relatively reliable in that almost all fatal occurrences come to the notice of the enforcement authorities and the arrangements for their reporting have changed little over time: the same cannot be said of non-fatal injuries. The long term downward trend in the number and rate of fatalities to employees has now levelled off. Figure 1 shows the decline in fatality rates and minor annual fluctuations from 1981 to 1985 at around 2.3 deaths per 100,000 employees (HSE, 1987). The number of fatalities to non-employees (including members of the public), however, increased by over 100 per cent between 1981 and 1985, from 129 to 217, although the relatively small numbers involved mean that trends can be distorted by a single large event such as the fire at Bradford football stadium in 1984. There was also a slight increase in fatal accidents sustained by self-employed people, though some of this will be explained by an increase in the numbers of self-employed.

FIGURE 1 · FATAL ACCIDENTS TO EMPLOYEES 1971-1985

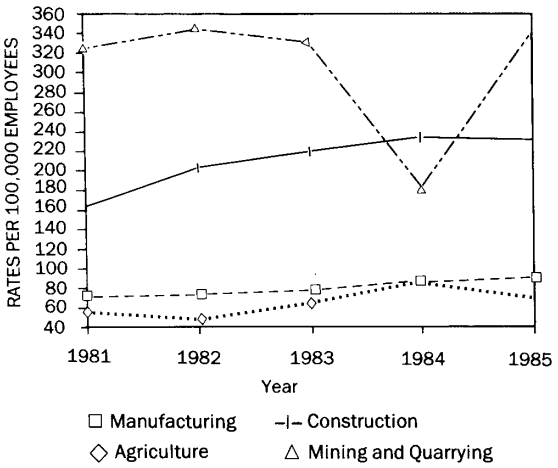


Source: HSC/HSE (1987)

Whereas the rate of fatal accidents sustained by employees has steadied in the 1980s (Figure 1), the record for accidents resulting in major injuries has been much worse. Overall, the number of accidents resulting in major injuries rose by 7 per cent between

1981 and 1985. However, there was a decline in the level of employment over this period. Accident rates per 100,000 employees, therefore, give a clearer indication of trends. The total incidence rate for reported fatal and major injuries, dominated by the latter, increased by eight per cent from 1981 to 1985. In some industrial sectors, the increases are particularly large. In the manufacturing sector major accidents rose by 29 per cent between 1981 and 1985; in construction the increase was 41 per cent; and in agriculture (including fishing) there were 34 per cent more major accidents in 1985 than in 1981 (HSE, 1987). Figure 2 shows that mining and quarrying was the most dangerous industry to work in; the sharp fall in 1984 was largely accounted for by the miners' strike in that year. In the construction industry the fatal and major accident rate was two and one-half times that of the manufacturing sector in 1985. Within manufacturing, however, there is considerable variation between different types of production. The rate is particularly high for coal and petroleum products and metal manufacture (HSE, 1987).

FIGURE 2 · FATAL AND MAJOR INJURY RATES BY INDUSTRIAL SECTOR



Nevertheless, in 1985 fatal and major accident rates were higher than those for 1981 in all manufacturing sectors except for shipbuilding (Goddard, 1988). The lower rate of accidents in the agricultural sector is partly explained by under-reporting and by difficulties in establishing employment status (that is whether a person is an employee, self-employed or non-employee) (HSE, 1987).

The poor record of major accidents involving employees in the construction industry has been noted, but a substantial proportion of workers in this sector are self-employed. The number of major accidents sustained by the self-employed rose from 91 in 1981 to 201 in 1985, a large proportion affecting workers in the construction industry. Some of this increase is explained by increased numbers of self-employed people and by a greater propensity to report accidents, but the generally low level of accident notification by the self-employed means that the scale of the problem is underestimated.

The incidence of fatal and major accidents also varies by the size of the firm. The greatest increase in accident rates in the 1980s has been in sectors which are labour intensive rather than capital intensive and in those where employment is skewed towards small establishments (Nicholls, 1986). People working in firms with less than 100 employees have a 50 per cent higher risk of serious injury than those working in larger establishments (HSE, 1986). Interestingly, this is a reversal of the pattern in the 1950s when major accidents were concentrated in larger firms (Revans, 1960). The observed pattern would be expected if small establishments were concentrated in the most dangerous parts of industry, but the Health and Safety Executive (1987) note that there is little evidence to support this assertion.

There is no single explanation for the increased rate of major accidents in the workplace. Some of the increase can be attributed to wider reporting duties and to employers' awareness of reporting obligations. The HSE (1987) believe that the increases do reflect broad changes in the safety of the industries concerned and consider the increase in the manufacturing and construction industries to be particularly worrying. Economising on health and safety practices may account for the higher accident rates. The Chief Inspector of Factories (1984) points out that many companies under financial pressure have cut back on maintenance activities and the services of safety specialists. In the construction industry, the move towards wider use of sub-contractors and consequent relaxation of safety standards has been identified as a possible cause (HSE, 1987). Managers of small businesses may not be aware of potential hazards or their legal responsibilities.

An alternative explanation might be that negligent working practices on the part of employees could have led to the increase in accidents. But in many instances it would be difficult to apportion blame. Moreover, it could be argued that negligence can only be attributed if employees are actually aware of potential hazards and safe working practices. A study of accidents and dangerous occurrences in the chemical industry between 1982 and 1985 found that in 75 per cent of cases management was responsible, while employees were mainly at fault in only 11 per cent: most of the incidents were preventable (Accident Prevention Advisory Unit, 1988). Employers must take responsibility for the training of managers, supervisors and employees in health and safety issues.

Another possible explanation for the increase in fatal and major injuries in the workplace may lie with the legislative framework or the effectiveness of its enforcement by the health and safety inspectorate (see section 3.1). But only a small proportion of accidents result from a breach of the law and most others would not have been prevented by more legislation. This is not to say that most industrial accidents are not preventable (Medical Commission on Accident Prevention, 1988). In principle, data on workplace accidents should provide a basis for targeting the regulatory work of the external enforcing agencies and for setting priorities within the individual firm. Small contractors in the construction industry, for example,

known to have particularly poor records of accidents have been the target of inspection blitzes by the HSE . Centrally collected information on the rate or prevalence of accidents, however, is of limited value. There is no clear correlation between rates, working conditions, and the type or severity of injury (APAU, 1985). More accurate information can only be obtained through systematic inspection and auditing of physical safeguards, systems and rules and procedures, either by external agencies or by industry itself.

2.4 Occupational Disease

Estimating the extent of occupationally-related ill health is difficult for two reasons. First, there is the problem of defining exactly what is meant by occupational ill health. Second, there is the difficulty of devising a system which can reliably record all appropriately defined occurrences. What is known is that the number of people who suffer from illnesses related to their work is far higher than the number injured at work. Deaths from occupational diseases in Britain are roughly 10 times higher than the number of deaths from workplace accidents (HSE, 1984).

Two factors must be considered when defining occupational ill health. One is that there may be a substantial lag between exposure to hazardous working conditions and its effect in terms of the development of disease. The second is that the effects of work hazards are seen not only in recognised occupational diseases such as asbestosis and byssinosis, but also in conditions caused by a combination of environmental, personal and behavioural factors. Schilling (1984) suggests three categories of occupational ill health in which work factors are:

(i) a necessary cause (in lead poisoning, for example)
(ii) a contributory cause (in coronary heart disease and bladder cancer)
(iii) an aggravating factor (eczema and peptic ulcer being the examples given).

Whereas the identification of work related disease in category (i) is relatively straightforward, the contribution of work factors to category (ii) and (iii) diseases is more difficult. Solvents, shiftworking, pesticides, some metals and carbon monoxide, for instance, have all been linked to an increased incidence of heart disease (US Department of Labour, 1980). Exposure to work hazards may be both a contributory and necessary factor in the onset of chronic disease. Behavioural factors such as smoking or alcohol consumption may act synergistically with exposures to toxic substances in the workplace and may intensify (or occasionally ameliorate) their effects. The risk of developing cancer, for example, is multiplied in smokers exposed to asbestos, ionising radiation or dyestuffs (Selikoff, 1968; Saracci, 1987).

The problem of determining the relative contribution of occupational factors to major causes of death is well illustrated by different estimates of the proportion of cancers attributable to work hazards. Doll and Peto (1981), reviewing evidence from the United States, conclude that between two and eight per cent of cancer deaths could be prevented if occupational hazards were removed. Others have speculated that around 20 per cent of total cancer mortality may be due to occupationally related cancers (Bridboard et al 1978). If only 4 per cent of all cancer deaths are due to occupational factors, this would account for around 6000 deaths in the UK each year. Whilst the proportion of all cancers which can be directly attributed to occupational factors is low, the size of population at risk (that is, those who are exposed to carcinogens in the course of their work) is also quite small. This means that the relative risk of developing occupational cancer in this group may be quite significant.

Distinctions between types of disease associated with work may appear to have little relevance for workers suffering from occupational illnesses, but they are important in compensation claims. Information on occupational diseases is closely linked to the system of compensation. These arrangements are described more fully in Chapter 5, but at this stage it is sufficient to note that state compensation benefits are based on a definitive list of prescribed diseases and specified occupations or work processes. Hepatitis, for example, is a prescribed disease, but only those whose work exposes them to human blood products, secretions and excretions can receive compensatory benefits. Centrally collected information on occupational diseases is derived from three sources.

i) Cases of prescribed diseases which are compensated under the industrial injuries scheme.
ii) Death certificates on which asbestosis or mesothelioma is mentioned as a cause of death.
iii) Cases of notifiable diseases reported to the HSE under RIDDOR.

None of these sources provides comprehensive coverage. Since 1983, industrial injury payments have only been paid for prescribed diseases leading to long term disability or death. Those cases in category (c) include most of the prescribed diseases, but exclude those conditions which account for the majority of cases (dermatitis, tenosynovitis, and occupational deafness).

It is too soon to know whether RIDDOR will result in better reporting of occupational diseases but the HSE point out that the first year's figures under RIDDOR indicate fewer cases of occupational disease than previously recorded (HSC, 1987). The likelihood of an employer reporting occupational disease in an employee is not only affected by the legal obligation to report: other factors include the importance attached to health and safety issues within the company. A large company with comprehensive occupational health coverage for its employees is more likely to have the appropriate systems for detecting notifiable disorders than a small business with no occupational health resources. The vigilance of medical practitioners in detecting work related disorders is also central to the collection of accurate data. Occupational health services and the primary care sector are discussed more fully in Chapter 4. There is a vicious circle in which the quality and coverage of information on occupational accidents and diseases is dependent on awareness of the effects of work on health, which in

turn is limited by the availability of comprehensive information.

Other countries have better systems of recording the incidence of occupational ill health. In Finland, for example, a register of occupational injuries and diseases has been kept since 1926. Data are collected from three sources: occupational disease reports from physicians sent to provincial medical officers; accident reports and physician diagnoses recorded by insurance companies; and cases diagnosed by the Institute of Occupational Health. In 1984, the register contained 58,000 cases of disease, with around 6,000 new cases being added each year (Institute of Occupational Health, 1985). Schilling (1984) suggests that taking account of the much smaller working population, Finland records about three times more occupational disease than Britain.

Routinely collected national statistics have been used to investigate the influence of occupation on mortality. The Registrar General's decennial supplement on occupational mortality is derived from two sources; occupation and cause of death recorded on death certificates, and census information on employment which is used as a denominator for calculating mortality rates. Both data sets have limitations. One of the most significant is that death certificates only record the last full-time occupation. For hazards which have a long latency period, recent occupation may have little relevance to cause of death (OPCS, 1986). The decennial supplement, therefore, is best used to provide background information for more specific studies. The OPCS Longitudinal Study has also been used to estimate mortality rates for different occupations. Although the numbers are small, these data avoid some of the bias evident in the decennial supplement.

The Longitudinal Study has been used to identify the contribution of occupational factors to observed inequalities in health between social classes. For the years 1976-1981, the standardised mortality ratio for someone in social class I (66) was one-half that of someone in social class V (124) (Fox et al., 1985). Fox and Adelstein (1978) conclude that 18 per cent of the variation in mortality between occupational orders (broad groupings of occupations which reflect socio-economic groups) is occupationally related. For specific causes, such as circulatory and respiratory diseases, the proportion is nearer 30 per cent.

Identification of the effects of occupation on physical health are confounded by the 'healthy worker effect'. This term has been used to explain the patterns observed in comparisons of the mortality rates of a cohort exposed to a specific work hazard, with that in the general population. Since the general population includes chronic sick, unemployed and retired people, who have worse than average mortality experiences, those in employment typically have lower mortality than the national rate. The biases pose a problem in interpreting the effects of potential hazards. A study of foundry workers in Finland, for example, demonstrated lower mortality than in the general population, but the healthy worker effect was masking a slightly higher overall mortality in the workforce (Koskela, 1976). The selection effect does not operate uniformly for all age groups and diseases and may diminish with length of employment (McMichael, 1976).

In 1987/88 there were 4792 new awards of disablement benefit for occupational disease (Hansard, 1988d). But this figure excludes large numbers of people whose health is impaired as a result of their work. It does not include those already in receipt of benefit, nor does it indicate those not claiming the benefit or those who were ineligible. On closer inspection the awards show downward trends for pneumoconiosis and byssinosis, but increases in awards for occupational asthma and mesothelioma (Table 1). The trend for mesothelioma is mirrored in information recorded on death certificates. Neither source is comprehensive, but death certificates are thought to be the more reliable (HSE, 1987) and show three times more cases than the rate indicated by disablement benefit awards. Because most of the prescribed occupational diseases take a long time to develop, cases now being detected tend to reflect working conditions of maybe 10 or more years ago.

TABLE 1 · PRESCRIBED INDUSTRIAL DISEASES RECORDED FROM DISABLEMENT BENEFIT AWARDS, 1981-1985

Year	Pneumo-coniosis	Byssinosis	Meso-thelioma	Asthma
1981	734	108	93	*
1982	733	133	123	95
1983	670	72	148	183
1984	577	56	201	137
1985	702	37	245	166

* not prescribed until 1982

Source: HSE (1987)

Since that time there have been significant improvements in control of atmospheric dusts and fibres, so it is to be expected that incidence and deaths from traditional occupational diseases, such as mesothelioma, asbestosis and byssinosis, will decline in future years. The problems of occupational health that must be faced in the next 50 to 100 years will therefore be quite different to those of the past. The more recently designated conditions such as occupational asthma, deafness, and musculo-skeletal conditions such as vibration white finger and tenosynovitis will become relatively more significant. Between 1982 and 1985 the number of disablement benefit awards increased substantially in three categories of disease; by 30 per cent for dermatitis, 80 per cent for tenosynovitis and 70 per cent for the 'beat' conditions. Some of this increase can be explained by increased awareness that these are prescribed conditions and by reduction in the time that it takes to process claims. Changes in eligibility for disablement benefit made in 1988 mean that the less disabling conditions will go unreported and uncompensated. This applies to approximately 75 per cent of dermatitis

and tenosynovitis cases, and 60 per cent for the 'beat' conditions.

Information on the effects of work on mental health is limited. As with the relationship between unemployment and poor mental health, it is difficult to determine whether the association is causal. Work may have a positive or negative effect on an individual's psychological state. It is extremely difficult to separate the stressful effects arising from the work process or work environment from those associated with domestic pressures and the factors may themselves be linked. The HSE (1988), however, estimate that between 30 and 40 per cent of all sickness absence from work can be attributed to some form of mental or emotional disturbance.

2.5 Conclusions

The toll of employment and unemployment on health is considerable. Major accidents in the workplace, in particular, have shown an alarming increase since 1981. In the future, many illnesses associated with traditional heavy industries and known occupational hazards will decline, but conditions associated with new hazards (manmade mineral fibres for instance) and working practices (such as VDUs) and those diseases with multi-causal aetiology continue to warrant action. On the basis of official statistics occupational illness and injury accounts for only a small fraction of the total burden of morbidity and mortality. Schilling (1984) estimates the contribution at around two per cent. The point to note, however, is that many of these conditions and injuries are preventable.

Occupational injury and disease is also costly, to workers and their dependents, to industry and to the economy as a whole. These costs arise from quantifiable factors such as medical care, loss of income and production and from more subjective factors such as pain and suffering. Recent estimates of the resource and subjective costs of occupational accidents and prescribed industrial disease put the total cost for Britain at between £1.5 and £2.2 billion at 1986/87 prices (HSE, 1987). If non-prescribed illnesses, estimated to be 5 times higher than prescribed, are included, the total costs will be significantly higher.

Some have argued that the work environment is more amenable to change than the personal lifestyle factors given so much emphasis in current health promotion programmes (Schilling, 1984; Harrington, 1987). Working conditions, as determinants of ill health and positive health and as contributory factors to class inequalities in health status, should be central to Britain's programme for Health for All by the year 2000 (WHO, 1988).

The policy and practical responses to the problems of occupational ill health can be divided into three categories: measures designed to secure safe standards and conditions in the workplace (occupational hygiene), the provision of occupational health services, and the payment of compensation. In each of these areas a distinction can be made between national policy and the procedures developed by individual organisations or employers. All three policy areas, however, are circumscribed to a greater or lesser extent by legislation, regulations or government guidelines. Within individual firms there may be some overlap between the categories: some occupational health services, for example, provide hygiene services and may be involved in providing evidence for compensation claims.

3 STANDARDS OF OCCUPATIONAL HEALTH AND SAFETY

This chapter considers the historical background to the development of current health and safety practices, the organisational structure for setting and monitoring standards and current trends in policy and practice. Section 3.1 examines the legislative framework governing occupational health and safety practice, and government provisions for monitoring standards. Occupational hygiene services in the workplace are discussed in 3.2; occupational hygiene being defined as broadly preventive strategies designed to control physical, chemical and biological hazards in the workplace.

3.1 Legislation and external regulation

Recognition of the problem of occupational diseases and accidents is long established. As early as 1700 Ramazzini identified specific workers' diseases and pointed to hazards such as poor ventilation and dusty atmospheres. But it was not until the nineteenth century that legislation to improve working conditions in Britain was passed. The key dates and developments in health and safety legislation are set out in Table 2.

TABLE 2 · KEY DATES IN HEALTH AND SAFETY LEGISLATION

DATE	LEGISLATION	KEY POINTS
1833	Factory Act	Established factory inspectorate with powers to prosecute employers providing unsafe working conditions.
1875	Factories and Workshop Act	Centralised the factory inspectorate, appointed a Chief Inspector of Factories.
1842		Inspector of Mines introduced.
1956	Agriculture (Safety; Health and Welfare Provisions) Act	Agriculture sector finally covered by health and safety legislation.
1974	Health and Safety at Work Act	Consolidated previous legislation. Established the Health & Safety Commission with responsibility for the health safety and welfare of people at work.
1977	Safety Representatives and Safety Committee Regulations	Provided a legal basis for the appointment of trade union safety representatives.

A fundamental principle of the present system of health and safety in the workplace is the complementary responsibilities of the state and employers. The 1974 Health and Safety at Work Act (HSWA) deregulated provisions by shifting the emphasis from external state regulation to responsible control by employers and employees. The Robens Committee, whose recommendations formed the basis of the Act, pointed out that:

> *The primary responsibility for doing something about the present levels of occupational accidents and disease lies with those who create the risks and those who work with them. (Cmnd 5034, 1972, p. 7)*

The Committee went on to note

> *There are severe practical limitations on the extent to which progressively better standards of safety and health at work can be brought about through negative regulation by external agencies. We need a more effective self-regulating system (Cmnd 5034, 1972, p. 12).*

The main agencies with responsibility for workplace health and safety are set out in Box 2.

BOX 2 HEALTH AND SAFETY AT WORK: KEY ORGANISATIONS AND THEIR RESPONSIBILITIES

Health and Safety Commission (HSC)

The body with key responsibility for ensuring the health safety and welfare of people at work. It has a tripartite structure with representatives from government, employers and trade unions. Various advisory committees within the HSC take responsibility for setting standards and codes of practice and have a similar structure.

Health and Safety Executive (HSE)

Enforcement of legislation is delegated to the HSE. It also reviews legislation and guidelines and makes proposals for their modification. The HSE advises employers, employees and the public and investigates worksites, accidents and complaints. The HSE has various formal arrangements with government departments and agencies which perform some functions on the HSE's behalf. The Department of Transport's Railway Inspectorate and the National Radiological Protection Board, for example, monitor health and safety standards in their specific areas of expertise. N.S. Oil, Civil Aviation, Sea and Rail transport and pesticides are the only areas of work which do not have independent inspectors.

Local Authorities

Environmental health departments are responsible for health and safety in non-industrial premises including shops, warehouses, offices, catering establishments and residential accommodation. There is a joint liaison committee consisting of HSE and local authority representatives which ensures a consistent approach to the enforcement of legislation. Local authorities also have licensing functions for industrial premises under the 1986 Housing and Planning Act and an EEC Directive on the Control of Major Industrial Hazards 1985.

Observance of standards rests on two key components; external monitoring by the health and safety inspectorate and self-regulation by employers and employees. The inspectorate can invoke a variety of sanctions against employers violating safety standards. In practice, the inspectorates see their role as primarily advisory and the penalties imposed have not been severe. No employer has ever been imprisoned for breaking health and safety legislation. There have been only two cases of suspended sentences and a similar penalty passed for contravening asbestos regulations (Hansard, 1987a). Fines for breaches of safety standards are often extremely low; the average fine being in the order of £400 (see Table 3). In part this is because most prosecutions for health and safety offences are held in magistrates' courts. The Secretary of State for Employment has indicated that there may be a case for reviewing the penalties (Hansard, 1988c).

TABLE 3 · AVERAGE FINES FROM CONVICTIONS RESULTING FROM PROSECUTIONS TAKEN BY HEALTH AND SAFETY INSPECTORATES, at 1986 prices

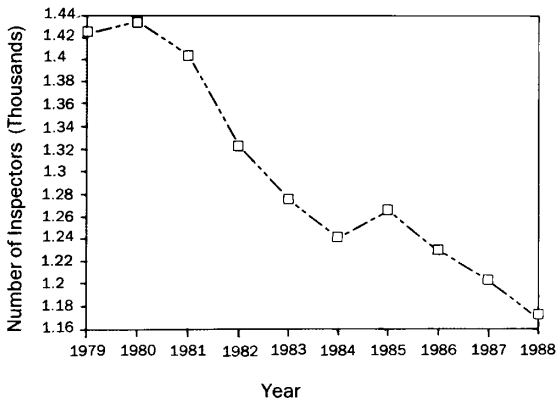
Year	Fine £
1983	252
1984	313
1985	437
1986	427

Sources: HSC/HSE 1987; Annual Abstract of Statistics, 1988.

Those sectors which are not the direct responsibility of the HSE face specific problems. In the offshore oil and gas industries, for instance, the inspectorate is administered by the same government departments which promote the interests of the industries concerned. Naturally, there can be conflicts of interest. In the case of the Piper Alpha and Zeebruge ferry disasters neither of the parent companies were prosecuted. An inspectorate, independent of industrial intrerests, is needed for all sectors.

The system of workplace inspection has been gradually weakened by a combination of factors. Between 1980 and 1986, the resources available to the HSE declined in real terms (HSC, 1987). Figure 3 shows the decline in the factory inspectorate from 1979, when it numbered 742 inspectors to 598 in 1988. The other inspectorates showed a similar fall in numbers. During these years, the level of employment in the population fell so the ratio of inspectors per 1000 employees remained stable (Hansard, 1987b). However, there are now more small, fragmented workplaces which put additional demands on inspectors' time. Between 1979 and 1987, for example, the number of workplaces covered rose by 30 per cent (Hansard, 1988b). The HSE has also acquired additional responsibilities, including asbestos licensing and gas safety. Coupled with these pressures

FIGURE 3 · NUMBER OF HEALTH AND SAFETY INSPECTORS 1979-1988



is a high turnover in health and safety inspectors and problems of recruiting new inspectors (HSC, 1987). These difficulties meant that by 1986 there was a backlog of 10,000 overdue workplace visits and fewer inspections and proceedings. Prohibition and improvement notices, for example, fell by 9 per cent between 1984 and 1985. Resource constraints mean that it is even more important that the inspection programme is targeted effectively. But this presupposes the existence of sensitive, reliable information on which to base decisions.

Government policy on occupational health and safety has shown two conflicting trends. The first is that of deregulation. Following the lead taken in the HSWA, the government restated its intention to reduce the burden of regulations on business in two recent papers. The green paper *Building Businesses, Not Barriers* (Department of Employment, 1986) and the white paper *Lifting the Burden* (Department of Employment, 1987) outlined plans to simplify arrangements and reduce health and safety obligations, including proposals for self-audit in larger firms. Interestingly, the Department of Employment's survey of employers found no evidence that current regulations are too onerous (Department of Employment, 1987). However, the Chief Inspector of Factories (1983) has commented that financial pressures have led some employers to cut back on health and safety practices. Arrangements for external monitoring of health and safety at work — specifically the level of fines and the probability of a violation being detected — will have some impact on employers' perceptions of the necessity of compliance with legislation and standards (Henderson, 1983), but other factors will influence organisational practices. Detailed research on variations in the observation of health and safety standards and the key determinants of behaviour would assist in enabling effective incentives to compliance to be devised.

The second trend in occupational health and safety policy is tighter specification of standards for health and safety. The HSWA is couched in very general terms. More detailed regulations are issued to cover

specific substances and work processes. Since 1974 some 30 new sets of regulations have been introduced. Regulations controlling the handling of lead, for instance, came into effect in 1980; procedures for the notification of new substances were clarified in 1981. Tighter controls on substances which are hazardous to health (COSHH) will be introduced in October 1989. The COSHH regulations aim to rationalise and update existing regulations. The regulations are accompanied by practical advice on methods of meeting the regulations' requirements. Carcinogenic substances are singled out for special attention in recognition of the fact that whilst occupational cancers can be prevented, only rarely can they be cured (HSC, 1984).

On the one hand, then, tighter regulations and controls on the use of hazardous substances and dangerous processes have been introduced, but on the other hand the enforcement and monitoring of these measures has been weakened. One possible explanation for the apparently conflicting trends in policy lies with the influence of the EEC on health and safety policy in Britain. In some cases EEC directives have resulted in tighter controls than would otherwise have been introduced. In other cases, such as the control of asbestos, Britain has tougher controls than other EEC countries. The impact on workplace health and safety of the single European market, which comes into effect in 1992, remains to be seen.

The result of these conflicting governmental approaches to occupational health has been to extend the significance of self-regulation in protecting the health and safety of workers.

3.2 Occupational hygiene services

Legislation and guidelines as means of securing healthy working conditions are only effective if they are observed and implemented. The people primarily responsible for monitoring acceptable standards of physical, chemical and biological factors arising in or from the workplace are occupational hygienists, although all health and safety inspectors have a basic training in hygiene and can provide general advice. Most manufacturers are too small to justify the employment of a full-time hygienist, but trade associations and employers' organisations may do so. In addition, private consultancies and some university departments offer occupational hygiene services on a contract basis. The Royal Society for the Prevention of Accidents (RoSPA) run an inspection advisory service for small companies.

There are two approaches to monitoring the effectiveness of health and safety procedures: the first focuses on the work environment, the second on the health of individual workers. Before 1984, the HSE used American standards of control known as threshold limit values (TLVs). These are time weighted concentrations which can be safely inhaled in the course of an eight hour working day. Subsequently, these were replaced by the HSE's own Occupational Exposure Limits (OEL's). Most standards are defined in terms of atmospheric concentrations since inhalation is the most common method of entry to the human body. But this does not indicate the degree of bodily absorption of a substance, nor the possible consequences for the health of a particular worker. For some substances, there are biological action levels which are indices relating to detectable levels of substances in the body. The COSHH regulations stress that health surveillance, typically performed by occupational health services, should be seen as an integral part of the control of work hazards (HSE, 1984). One anticipated outcome of the COSHH regulations is an increase in the amount of monitoring of both the work environment and of individual workers.

If the thrust of Government policy on health and safety in the workplace has been to place increasing emphasis on self-regulation of standards by industry itself, what evidence is there that employers have proved competent in this respect? The increased rate of major accidents does not inspire confidence. An important issue to consider is that of incentives for employers to monitor and maintain good health and safety practices. If employers had to bear all the damage and prevention costs associated with varying levels of health and safety at work, we would expect them to opt for very efficient systems of health and safety or cease business (Henderson, 1983). Most of the costs involved in treating injuries and occupational diseases fall on the NHS or on the Department of Social Security. Although workers and firms contribute to these services indirectly through taxation and national insurance contributions, these payments do not enter into considerations of the profit maximisation-cost minimisation equation (Henderson, 1983). Since employers bear only part of the damage costs from occupational accidents and ill health, other factors must influence their health and safety practices.

The low level of fines for breach of standards, together with a reduction of visits by health and safety inspectors, suggest that savings from improved health and safety performance are unlikely to come from reduced prosecutions. The system of compensation for occupational injuries and diseases was also intended to serve as a deterrent to negligence by employers. The current system is a combination of tort law claims and state benefits, neither of which offer incentives to the prevention of accidents and illness. Compensation payments to employees for occupational accidents or diseases are met from employers' insurance policies. Savings could accrue from reduced insurance premiums for firms with good safety records. However, the degree to which insurance companies take such risks into account is limited; premiums are mostly determined by the average performance of employers in a particular class of business (James, 1983). Tailoring premiums to individual records of health and safety performance would require more accurate information on performance than is currently collected.

The Robens Committee identified three prerequisites for effective self regulation. The first is general awareness of the importance of safety and health at work; the second is a clear definition of legal and operational responsibilities; and the third is methodical assessment of problems translated into practical objectives and courses of action. General awareness of health and safety is dependent on a number of factors including the nature of the industry

and its risks, the commitment of management to the health of its employees, availability of information, advice and training on work hazards and preventive measures, pressure from the workforce to improve working conditions as well as economic factors. Larger firms tend to be more aware of health and safety issues than smaller businesses. Large companies are also more likely to receive information and advice from employers' organisations or from health and safety inspectors. The Chief Inspector of Factories identified that:

> *The majority (of small new enterprises) are not alert to hazards to which their employees are exposed and are not well briefed on health and safety legislation and practice... (Chief Inspector of Factories, Manufacturing and Service Industries, 1984).*

The HSE have produced guidance material which aims to improve awareness of and responsibility for health and safety issues in small businesses (HSE, 1988b).

Legal responsibility for health and safety is outlined in the 1974 HSWA and in the 1977 Safety Representatives and Safety Committees Regulations. These envisaged self-regulation as involving both employers and employees. Essentially, this requires the commitment and involvement of senior managers, but it also depends on the integration of health and safety responsibilities into job functions at all levels. The role of employees in the regulation of workplace health and safety varies. Those who are members of a recognised trade union have the right to appoint a safety representative who has powers to investigate hazards and dangerous occurrences, the circumstances of accidents in the workplace, workers' complaints, to receive information from health and safety inspectors and to conduct routine workplace inspections. Most safety representatives work with a safety committee. Employers are obliged to set up a safety committee if requested by at least two safety representatives, though some voluntarily do so. Safety committees, whilst providing a forum for airing health and safety concerns, do not have any legal rights in the duties they may carry out.

Employee participation also takes place through collective bargaining procedures, through the work of union officials at national level with responsibility for health and safety, and on an informal basis in the workplace. The Robens Committee recommended that there should be a statutory obligation on employers to consult with their workpeople on measures for promoting safety and health (Cmnd. 5034, 1972, p152). Subsequent legislation, however, restricted the obligation to unionised workforces. Millward and Stevens (1984), reviewing a number of surveys, concluded that there are notable differences in the form of participation between private and public sector employers. The proportion of companies with no formal structures for employee participation, where decisions on health and safety issues were made solely by management, was 30 per cent for the private sector, compared with 10 per cent for public sector employers. A further point to note is that small firms typically have low trade union membership and few have safety representatives (HSE, 1981).

Trends in the structure of the labour market, in the level of unemployment, and in government policy have meant that trade union membership has declined by 22 per cent since 1979, members accounting for just 41 per cent of the total workforce in 1985 (Towers, 1986). These trends and the restricted clauses in legislation mean that the formal safeguards for employee participation in the self-regulation process probably apply to less than one-half of the working population. It could be argued that the assumptions of the Robens Committee were ill-founded, naive and overlooked conflicts of interest which exist between employers and employees.

If employers and employees are to be jointly responsible for the regulation of safe working conditions, there must be a commitment to sharing information on known hazards and risks. The 1974 HSWA laid a duty on employers to provide a written company policy for safety and health for their employees. These documents should state objectives, rules and procedures for dealing with hazardous substances and the extent of responsibilities. Currently, this applies to firms with more than five employees. In keeping with other proposals for deregulation, the government have recommended that the threshold be raised to 20 employees (Department of Employment 1986) to reduce the burden on these companies. But, as noted earlier, the Department of Employment's (1987) survey, found no evidence to suggest that small businesses find current legislation too onerous. In small businesses there is, typically, limited knowledge of and experience in health and safety issues. Their employees are more likely to sustain fatal and major injuries, less likely to be involved in health and safety matters through membership of trade unions and, as we shall see, less likely to have access to occupational health services. It is ironic that recent policy proposals aim to reduce health and safety obligations in this sector. The trend should be reversed to ensure compliance with regulations and guidelines.

The final criterion for effective self-regulation is for a systematic assessment of the key problems and a clearly defined course of action for overcoming them. This is primarily applicable to individual firms. Problem identification and targeted responses depend upon effective systems for identifying potential hazards (both materials and processes), investigating accidents and ill health, for monitoring compliance and auditing the health and safety system itself. The continuous training of managers, supervisors and employees should be an integral part of such systems. In many organisations these systems are partial and piecemeal (Ward, 1987). A systematic approach to the monitoring and management of health and safety is needed.

3.4 Key issues in occupational health and safety

This chapter has outlined measures for defining, controlling and monitoring standards of health and safety at the national level and at the level of the workplace. A number of issues have been identified which could form the basis for improvements in occupational health policy. These are summarised below:

- Occupational hygiene in small business poses particular problems in terms of general awareness of health and safety issues and their limited resources for monitoring and controlling standards. The problem is more than just a lack of expertise. The economic state of many small firms means there is 'an inevitable temptation to do only what shows a commercial or tangible benefit in the short term' (Chief Inspector of Factories, 1984). Against the background of proposals for deregulation, there is a need to consider measures which both increase awareness of health and safety issues amongst small firms and enable them to develop healthy work practices.
- The system of health and safety regulation provides only limited incentives for employers to observe legal requirements. The system of workplace inspections has been weakened, sanctions for violations are not sufficiently high to act as a deterrent, and insurance arrangements may not be flexible enough to take account of variations in the health and safety performance of individual firms. Measures which could enhance the effectiveness of external monitoring and self-regulation need to be considered in conjunction with one another.
- The HSWA 1974 envisaged that both employers and employees would contribute to self-regulation in health and safety. Formal arrangements for employee participation are restricted to unionised workforces, which are typically concentrated in the larger firms. Recent policy statements have called for more self-regulation but, in the absence of clear statements of what this entails, the relative balance of responsibilities between employers and employees has been left as a matter for negotiation within individual companies.
- Occupational hygiene services tend to operate separately from occupational health services. Both approaches are central to a comprehensive system for monitoring exposure to hazardous substances and for preventing occupational accidents and diseases occurring. Some companies have integrated their health and safety and environmental functions.

4 OCCUPATIONAL HEALTH SERVICES

4.1 Introduction

This chapter examines trends in government policy on occupational health services (OHSs), on the organisation and content of occupational health provision and on key issues concerning the type of services which should be provided. In general terms, OHSs operate on two broad fronts: the investigation of the effects of work on health, and the effects of health on capacity to work. These can be respectively termed occupationally-related and occupationally-relevant ill health. This report is primarily concerned with the former.

4.2 The historical background

There were some attempts to provide medical services for industrial workers in the nineteenth century. Employers' desire to keep down compensation payments and the high demand for labour during the First and Second World Wars were more significant incentives to the development of occupational health services than concern to protect workers from industrial diseases. During the 1950s and 1960s there was increasing debate on occupational health services. The Gowers Committee (Cmnd 7664, 1950), the Dale Committee (Cmnd 8170, 1951), the British Medical Association (BMA, 1961) and the Medical Services Review Committee (1962), were united in calling for the government to ensure some form of comprehensive provision of occupational health services (OHSs).

The strength of opinion did not result in government action. The Robens Committee (Cmnd 5034, 1972) took a different view and warned that occupational health services could duplicate those already provided by the NHS. The government agreed and saw their role as primarily advisory and in 1972 established the Employment Medical Advisory Service (EMAS) under the Department of Employment. EMAS was subsequently incorporated into the Medical Division of the Health and Safety Executive (HSE). The main function of EMAS is to advise government and employers on all matters relating to the medical problems of employment, including occupational health, first aid, employees' fitness for particular jobs and health promotion in the workplace.

The most recent review of occupational health services was carried out by the House of Lords Select Committee on Science and Technology (1983). The Committee took the view that OHSs should be funded by employers, but suggested that the problems faced by small businesses warranted additional expenditure by the state. Addressing the problem of lack of incentives for employers to provide occupational health services, the Committee urged the HSE to draw up a voluntary code of practice on the type of services which should be provided in different types of industry. In its response to the Committee's report the government rejected any recommendations that entailed increased expenditure on the grounds that it 'remains committed to reducing public expenditure' (HL 289, 1984).

More recently, the International Labour Organisation's (ILO) Convention 161 called for all member countries to undertake development of occupational health services for all workers (ILO, 1985). In the long term the proposals would probably mean that a legal obligation would be placed on employers to arrange some form of occupational health coverage for their workforce. The Convention has drawn support from organisations as diverse as the Chemical Industries Association (1987) and NUPE (1987). Despite the involvement of the HSE and EMAS in the development of the Convention, it seems unlikely that the government will now ratify its proposals, though the less stringent obligations in Recommendation 171 could still be accepted.

4.3 The organisation of occupational health services

Occupational health services play an important part in the detection and prevention of occupational and general ill-health. They are recognised as 'the most effective means of demonstrating that control is adequate and of assessing risk' (HSE, 1984, p.7). But the availability of OHSs is limited. In 1976, a survey by EMAS for the HSC revealed that less than one-half of the nation's workforce had access to such services (HSC, 1978). The survey found that 85 per cent of all firms in the industries surveyed had no OHSs other than first aid. Many other firms employed occupational health staff just for treatment duties, and the proportion of doctors and nurses employed with occupational health qualifications was low. Size of firm was the most important factor in explaining the availability of services: the nature of industry in which the firm was engaged was relatively insignificant. In 1985, the HSE reported that the results of the 1976 survey were still broadly true (HSE, 1985).

There is a variety of arrangements for the provision of occupational health services. The House of Lords Select Committee (1983) identified four basic types of provision. The most common in large firms is an on-site service provided exclusively for the firm's employees. There is considerable variation between large employers in the type and level of the service which they provide. Marks and Spencers' OHSs, for example, which serve 54,0000 people and consist of some 219 doctors and 249 dentists as well as chiropodists, dental hygienists and nurses, have been heralded as a model of good practice (Burling, 1985). The NHS, by contrast, as the largest single employer in Europe, provides only a limited service for its employees. There has been no shortage of guidance on NHS staff health (Ministry of Health, 1968; DHSS, 1982). But appointments of consultants in occupational medicine have been few, particularly at the regional level.

A second arrangement for the provision of occupational health services is for large firms to offer spare capacity in their OHSs to smaller firms on a contractual basis. Arrangements of this type have grown up piecemeal and are not extensive.

A third type is the group service such as those operating in Slough, Harlow, and Milton Keynes. Most of them were established as private limited companies with charitable status. Some have faced financial problems as major firms have withdrawn from the scheme (HSC, 1978). The House of Lords Select Committee (1984) concluded that any extension of services of this type would require some form of grant to cover initial capital and revenue costs.

The fourth type of provision is where private consultants operate on a fee for service basis. Typically, these are general practitioners who may or may not have specialist training. Some occupational health nurses have also established independent practices.

4.4 A preventive approach to occupational health

The state does not place any formal obligation on employers to provide OHSs, so there is little guidance on their function in legislation. International bodies such as the ILO and WHO have attempted to define broad functions which member states might adopt. The WHO (1982) defines the aims of OHSs in broad terms as: promoting working conditions which maximise quality of life by protecting workers' health, enhancing physical, mental and social wellbeing, and preventing ill health and accidents.

Some diversity is necessary if services are to be sensitive to the type of production, the hazards to which workers are exposed, and the resources available to the company. Historically, OHSs have consisted of routine or episodic medical examinations, with some treatment of work-related disease and injury and limited consideration of the rehabilitation of

BOX 3 · WORKPLACE HEALTH PROMOTION: ADVANTAGES AND DISADVANTAGES

ADVANTAGES

- The distinction between illnesses which are related to work and those which are not is increasingly blurred. Some behavioural factors, such as smoking, are known to intensify the effects of work hazards. Psycho-social factors which underlie behavioural practices may, in turn, be related to work experiences. Programmes based in the workplace may present more possibilities for preventive control since risk factors for diseases with multi-causal aetiology can be tackled together.
- Companies may gain in improved productivity from having healthy employees. The costs of illness and injury to employees and to their employers are considerable and many of these costs apply irrespective of whether the cause is occupational. For example, alcohol misuse was estimated to cost industry £1396 million in 1983 (McDonnell and Maynard, 1985). At least one-fifth of all work accidents may be alcohol-related (Herbert, 1987). Smokers average two to three more days sick leave each year than non-smokers and are also more likely to have an accident at work (Fielding, 1982).
- Preventive health care is not carried out systematically by the NHS (Schilling, 1984). Some companies may already have structures and human resources for tackling a range of influences on health. Personnel departments, occupational health services, safety representatives and safety committees, for instance, may add health promotion issues to their work on occupational hygiene and safety.
- The frequency of contact between professionals and workers enables early detection of conditions amenable to treatment or further prevention. The length of time which people spend at work means that health promotion programmes can be targeted on a relatively stable population over a period of months.

DISADVANTAGES

- Worksite health promotion programmes can be wasteful in that they duplicate services which are provided by GPs or the primary health care team.
- Some health promotion programmes may be cost-effective for the employer and not all require large capital outlay. However, there is typically a time lag between a preventive intervention and its effect on health. This can mean that the employer investing in the health of a particular worker may not be the same one who gains in improved productivity.
- Health promotion programmes, particularly those which involve screening for conditions or behavioural factors which do not affect work performance, shift the boundaries between work and private life. This raises a number of ethical issues. American companies are increasingly testing employees for drug use in pre-employment medicals and check-ups. In Britain such tests are not widespread, British Nuclear Fuels and the Ministry of Defence being exceptions, though there are signs of increasing interest. Some companies are already demanding AIDS tests for all job applicants.
- There is a danger that workplace health promotion programmes adopt a victim blaming approach, concentrating on individual behavioural factors and neglecting the impact of the work environment on health (House and Cottington, 1986). The provision of these programmes can serve a legitimation function, giving the impression of a caring employer, yet, in placing the emphasis on lifestyle factors, does not challenge the role of the work environment and work processes as a determinant of health. On the other hand, programmes which take an individualistic approach may be important in that they attempt to raise the level of awareness of health issues amongst employees.
- There is some uncertainty about what programmes offer best value for money in terms of improved health per unit of expenditure. If the risk factors for major diseases are well known (smoking, alcohol abuse, poor diet for example), the policy responses which should follow are less clear. A review of worksite smoking intervention programmes in the US could not demonstrate which approach was most effective and it was not possible to identify whether workplaces with different demographic and behavioural profiles need different types of intervention (Hallett, 1986). Evidence for the effectiveness of hypertension programmes is similarly inconclusive (Russell, 1986; Foote and Erfut, 1983).
- Workplace health promotion programmes may not be targeted on those in greatest need. The level of participation amongst employees is important. In the US, programmes provided at the workplace have an average participation rate between 20 and 40 per cent of employees, whilst offsite programmes attract just 10 to 20 per cent. Moreover, the health promotion message may have a differential impact on social groups and may exacerbate existing inequalities in health status (Morris, 1982; Conrad, 1987b).

employees disabled in the course of their work. The EMAS survey (HSC, 1978) indicated treatment of acute emergencies and minor injuries to be the most common activity, though clearly these data may now be out of date. The treatment function is the most likely to duplicate services provided by the NHS. Good treatment services can serve an important function in gaining the confidence of the workforce, opening the way for health education and other preventive work (HSC, 1978). Others have argued that if an employer chooses to provide or pay for such services then it increases the total resources devoted to health care.

There is a growing recognition of the preventive and health promotion functions of OHSs. The Black report, for example, among its recommended strategies for reducing inequalities in health, proposed that:

> *government departments, employers and unions should devote more time to preventive health through work organisation, conditions and amenities (DHSS, 1980 p. 336).*

New guidelines produced by the HSE identify that the workplace is often an ideal centre for promoting measures that prevent ill health which is not directly related to work (HSE, 1988). As the traditional occupational diseases decline, there is likely to be increased attention on those conditions caused by the interaction of several risk factors.

This broader understanding of the remit of occupational health care means that there are now several types of approach to the prevention of ill health. Webb, Schilling and Babb (1988) suggest five categories based on the main health hazards being targeted.

- Hazards where working conditions are a necessary cause of occupational disease (e.g. lead, asbestos).
- Hazards which are contributory causes of disease
- Hazards at work which aggravate existing diseases or promote latent conditions (eg. peptic ulcer or eczema).
- Situations where work offers easy access to potential hazards (such as alcohol and drugs, hence the high rates of cirrhosis of the liver in bar tenders and overdoses amongst medical laboratory workers)
- Aspects of the health of employees that can be influenced by health promotion programmes at work (typically behavioural factors such as smoking, diet and exercise).

Some conditions may have causative factors in more than one category. Coronary heart disease (CHD) and obstructive pulmonary disease, which have multiple causes, may be affected by hazards in categories 2, 4 and 5. Furthermore, some behavioural factors which fall into category 5 act synergistically with work hazards.

A survey of some major public and private sector employers and trade unions has demonstrated that health promotion programmes are receiving increasing attention (Webb, Schilling and Babb, 1988). These programmes have tended to be adopted on an ad hoc basis rather than as part of a specific policy for health promotion. The topics covered in workplace health promotion programmes include alcohol, screening for cervical and breast cancer, smoking, stress, immunization and nutrition. Relatively little interest has been shown in family care issues, contraception, sexually transmitted diseases, fitness or obesity control. The government, too, has actively sought the cooperation of industry in implementing its two national heart disease prevention programmes: Look After Your Heart and Heartbeat Wales. Seventy-five companies employing almost two million people have signed 'healthy living contracts' (Hansard, 1988d).

This broader view of occupational health warrants more critical examination for both its advantages and disadvantages. Some of the arguments are set out in Box 3.

Programmes vary substantially in the type of issues covered, in the way that the programmes are devised and made available and the point at which prevention is focused. In the US, for instance, a distinction is made between health promotion programmes aimed at behavioural risk factors, which are essentially primary prevention strategies, and Employee Assistance Programmes (EAPs) which deal with symptoms of ill-health which have already emerged. EAPs may be devised to help employees tackle alcoholism or smoking for example and tend to be more enabling than exhortatory. As a result they have proved more popular with the labour unions than straightforward health education approaches (Fielding, 1982).

The level of provision of OHSs in Britain is low. Although workplace health promotion programmes are becoming more widespread, OHSs that prevent ill health and promote and enhance well being are far from a reality for most workers. Most of the examples of good practice in workplace health promotion are restricted to larger workplaces. The problem of low provision in small offices, shops, factories and workshops is persistent (McEwen, 1987).

Voluntary extension of occupational health services and health promotion programmes has not happened on a large scale. Several constraints can be identified. The first is that current legislation does not provide a sufficient incentive to their development and in particular to services oriented to prevention and health promotion. The survey by Webb et al. (1988) sought information on the factors which had influenced the development of preventive programmes. The most common factor cited by respondents was government legislation.

A second factor which might explain the limited extension of OHSs is lack of research on the effectiveness of existing services and programmes. Any call for improvement or extension of OHSs should be based on evidence of their effectiveness (Smith and Jacobson, 1988). Evaluation of economic and other benefits to employers providing OHSs and health promotion programmes and dissemination of information on models of good practice could encourage other employers to act similarly. But evaluation is costly and initiatives are unlikely without some lead from a central directive or organisation such as the HSE.

The availability of resources to provide OHSs is a further factor which might explain their limited provision. The House of Lords Select Committee report

on OHSs identified that some resources might need to be provided by the government to enhance the development of OHSs in small and medium sized firms.

> *The Committee believe there is a need for some pump priming support for extending group services and increased support for training of practitioners (HL 287, 1984, p.35).*

More generally, the committee commented that:

> *Occupational health in Britian today is an area where relatively modest additional expenditure applied imaginatively, will produce disproportionately greater benefits which far outweigh the cost (HL 287, 1984, p. 35).*

In its response, the Government rejected measures requiring further expenditure.

A fourth constraint to the development of comprehensive OHSs is that, despite general statements from the HSE about the significance of workplace health promotion, there has been little specific guidance material or statements of priorities for future action. Similarly, issues like the relationship between health promotion programmes and traditional, but still important, occupational health concerns such as the identification and prevention of occupational diseases and injuries, and the staffing skills required by the broader type of workplace health service, have received little attention.

4.5 Structures and roles

Broadening the scope of OHSs carries a number of implications. How would these services intersect with those of the NHS ? What skills are needed for the effective delivery of OHSs? What can employers gain from providing occupational health for their employees? What forms of service or approaches are effective?

The interface between occupational health services and the NHS has been the subject of continued debate. Much of the controversy has centred on duplication of treatment for illness and injury. More recently, the debate has shifted to prevention and health promotion activities. The Robens Committee (Cmnd. 5034, 1972) thought the danger of overlap sufficient to recommend no further government involvement in occupational health service provision. They did, however, encourage recognition of the interface with primary health care and called for greater emphasis on occupational health in the training of GPs and of hospital doctors. The House of Lords Select Committee put the case more strongly:

> *Occupational Health should be considered an integral part of the primary care of patients and GPs should take full account of the effects of occupation on health (HL 287, 1984, p 52)*

It is not clear how such integration could be achieved. It is increasingly difficult to distinguish between occupationally related ill health and that where work factors are not a contributory cause. But professional boundaries and divisions in responsibility have reinforced the distinction in practice. One- half of the working population has no access to occupational health services of any kind. For these people, the identification of work related conditions will depend on the vigilance of their general practitioner (GP). GPs are unaccustomed to recording the occupational histories of their patients and where illnesses may be due to multiple causes (such as bronchitis) the non-occupational causes tend to be given greatest significance (Blane, 1987). The implications of the COSHH regulations, however, are that there will be greater demand for doctors with occupational health expertise to perform medical inspections, a large proportion of which are expected to be GPs (Taylor, 1985).

Until occupational health services are available for all workers there will continue to be a need for better practical knowledge amongst primary health care workers of the role of working conditions and practices as determinants of ill health. The most obvious way of securing improvements in this direction is by integrating occupational health into the training of primary care workers, including GPs and community nurses (WHO, 1988); a point endorsed by the government in its response to the House of Lords Select Committee's report (HL, 289; 1984).

A slightly different approach is demonstrated by the Sheffield Occupational Health Project (SOHP). The project employs workers with trade union experience and training in occupational hygiene to record work histories of patients visiting their GP. The records are then kept with the patient's medical notes. The project workers, who currently cover six practices, are employed under the ancillary staff scheme. The project offers health monitoring (lung function and hearing tests for example), information and medical evidence for people wanting to raise health and safety issues at work, and also offers advice on compensation (Pickvance, 1988). One advantage of the project is that it provides a means of reaching workers from smaller firms who, typically, have poor access to occupational health services and information.

Accurate information on the extent of occupational illness depends to some extent on awareness of the role of work factors in primary health care. The frequency of such conditions being seen by a GP, however, may be small. Some crude calculations provide evidence, that at the level of the individual practice, work related conditions are rare events. Assuming levels of occupational ill health based on the Finnish data, on average each GP would be likely to encounter 2.2 new cases each year. Whilst multi-causal conditions in which work is one of several contributory factors will be relatively common, the probability of seeing a case in which work has directly caused the condition is low. For example, each GP can expect to encounter 7.5 new cases of cancer a year. Conservative estimates attribute up to five per cent of cancers to occupational factors, which would put the number of occupational cancers seen in general practice in the order of one every three years. A survey of 200 patients in 1987, however, indicated that the scale of illness related to work seen in general practice may be much greater. One in 10 people were visiting their GP on the day of survey for a work-related problem and one in 3 had suffered some health damage from work at some time (Pickvance, 1988). Precise diagnosis is important if

sensitive prevention or treatment programmes are to be devised: it is also important to workers who may be able to claim compensation for their disability and in ensuring accurate records on the level of occupational ill health.

The interface between occupational health and primary health care presents specific problems for occupational health doctors and nurses who face ethical and moral issues associated with treating other doctors' patients. The issue of professional boundaries is a growing problem within occupational medicine. These specialists are also in the difficult position of being employed by a company and having to serve the interests of both employer and employees. Conflicts may arise if a company doctor is expected to breach the contract of confidentiality with a patient at the request of the employer: in the case of sickness absence or liability in an accident, for example. This has meant that historically workers have had ambivalent reactions to occupational health services. Watkins (1987) lists several examples which indicate that the lack of independence of occupational health doctors can lead to the interests of the employers being promoted at the expense of employees. In 1980, for example, a pathologist's enquiries demonstated that the results of health tests on workers at a Coalite chemical factory had been distorted since the company doctor had selected only the normal results. Both the BMA and the Royal College of Nursing have been unequivocal about the duties and responsibilities of occupational health doctors and nurses (BMA, 1984; RCN 1985), but it is easy to see how, in practice, lack of independence may compromise their role.

The shift towards prevention and health promotion in occupational health services may require a different blend of skills than are currently offered by occupational health doctors and nurses (WHO, 1982). In the United States (US), where workplace health promotion programmes are more widespread, the impetus for such approaches has developed largely outside the medical care system, with little participation by physicians (Conrad, 1987). OH nurses have argued that the broader view of OHSs based on prevention and health promotion requires a different conceptual approach to the medical model and that nursing training equips them with more appropriate skills (Lloyd, 1984). Both the House of Lords Select Committee (1984) and the Government's response to that report pointed to the potential for a wider role for OH nurses.

Ideally, the preventive approaches of occupational hygiene and health services should be seen as complementary elements of an overall programme designed to protect and promote the health of workers, along the lines envisaged by the WHO. A comprehensive preventive service would involve the collective expertise of a range of professionals including hygienists, engineers, architects, chemists, physicians, nurses, health education workers, psychologists, safety engineers and paramedics (such as physiotherapists) (WHO, 1982). Employing experts in all these areas will be beyond the means of all but the largest firms, nor will the input of each professional need to be on a regular or continuing basis. Collective arrangements for organising these services may be feasible, but there is a need for experiments on different forms of organisation and evaluation of their relative costs and benefits.

Employees themselves can be involved in the organisation and delivery of preventive OHSs. A central principle of the WHO's interpretation of health promotion is that individuals and community groups should be directly involved in defining their health needs. The declaration of Alma Ata on primary health care in 1978, which Britain was a signatory to, also stressed the right of individuals to participate in the planning and implementation of their health. The involvement of the workforce in health and safety has a number of advantages. One is that workers have direct knowledge and experience of working methods and potential hazards to their health and can elaborate preventive measures based on this experience. A second advantage stems from evidence that the level of control over and involvement in work processes is inversely related to the degree of psychosocial stress caused by work (House and Cottington, 1986).

It was noted earlier that the tripartite structure of the national policy making body (HSC) and regulations for safety representatives and safety committees provide the legal basis for worker participation in occupational health issues, but that the provisions are skewed in favour of trade union members. Some observers have pointed out that the radicalism of the concept of worker participation has not been matched by practical experience and that expectations of what safety representatives could achieve have been frustrated by a lack of managerial commitment and the effects of economic recession (Gee, 1980). The latter has resulted in reduced expenditure on health and safety, increased fear of redundancy and a channelling of trade union activity towards job preservation (Glendon and Booth, 1982). Trade unions also face greater difficulty in pressing health and safety demands in an adverse economic climate. Although trade unions have shifted the focus of their activities from compensation issues to prevention (Glendon and Booth, 1982), employee participation has been focused on working conditions: there has been little involvement in occupational health services per se.

4.6 Key Issues for Occupational Health Services.

The key issues for occupational health policy to address in the field of occupational health services can be summarised as follows.

- The level of availability of OHSs is low. Although the government anticipated that employers would extend the provision of OHSs voluntarily, coverage has changed little over the last 10 years. Availability is particularly poor in small and medium sized firms. Lack of supportive legislation, an absence of firm targets and statement of priorities at the national level, limited evaluation of the costs, benefits and effectiveness of different forms of provision and the difficulty of funding in small businesses are factors which may have limited the provision of OHSs.
- The workplace may have a wider role to play in the protection and promotion of health among workers. Traditional occupational health concerns, however, continue to warrant action. Ideally, a comprehensive occupational health service should tackle both work hazards which cause, aggravate or contribute to ill health and personal behavioural factors which can be influenced by prevention and health promotion programmes. There has been relatively little evaluation of existing workplace health promotion programmes. Neverthelesss, despite an absence of information about their formal costs and benefits, OHSs are important in that they raise the profile of health and safety issues.
- The interface between OHSs and primary health care is particularly blurred. In the absence of comprehensive OHSs available to all workers, primary health care workers will continue to play an important role in the identification and treatment of conditions related to work. Options for improving awareness of occupational ill health at this level should be explored more fully. The Royal Colleges, EMAS and the HSE could pursue the matter jointly.
- The wider view of OHSs may require new roles and skills in place of the predominantly medical model which has dominated traditional approaches to occupational health. For instance, the preventive training of the occupational health nurse may be more appropriate to services oriented to the promotion and enhancement of wellbeing amongst workers. The role of workers themselves in identifying work hazards and in developing occupational health programmes is also important. Methods and structures for enhancing the development of services along these lines need further consideration by the various professional and interest groups involved.

5 COMPENSATION

5.1 Compensation for occupational accidents and injuries

Since the first Workmens' Compensation Act of 1897, compensation has been the most consistent response to the problem of occupational injury and disease. The Royal Commission on Civil Liability and Compensation for Personal Injury (the Pearson Commission) define compensation as:

> *the provision of something to the injured person (or a dependent) in consequence of injury and for the purpose of removing or alleviating its effects (Cmnd 7054, 1978, p.8).*

Compensation can take the form of money, services (such as health care) or goods and there are different arrangements for payment, depending on the degree of liability accepted. For occupational accidents and diseases, compensation may take the form of higher wages to reflect the higher risk of death in certain jobs (Marin and Psacharopoulos, 1981), may be legally awarded in the event of specific occurrences on a fault or no-fault basis, or may be paid from the social security system. Awards which take into account liability are the province of civil claims under tort law. The social security system, or more specifically industrial injury benefits, provides compensation on a virtually no-fault basis. Payment of these benefits is restricted to all accidents and injuries in the workplace and a limited list of (prescribed) occupational illnesses. The system of compensation for occupational injury or disease is complex. In some cases compensation may be available from more than one source. The Pearson Commission (Cmnd 7054, 1978) found that two per cent of personal injuries received money from four or more sources, the most common combination being occupational sick pay, social security benefits, private insurance and a tort award. The inter-relationships between different types of benefits and compensation must be taken into account in thinking about alternative compensation strategies which might be adopted.

The Workmen's Compensation Acts of 1897 and 1906 made significant changes in workers' rights by introducing the concept of employers' liability for accidents in the workplace and the provision of cash benefits regardless of who was to blame for the incident. The 1906 Act extended coverage to most people working under contract and additionally made compensation available for six occupational diseases, the list being added to in subsequent years. Despite minor changes, the structure of compensation laid down in these Acts lasted until 1948. Although this was an improvement on a tort only system, in practice many employers were not adequately insured to enable them to pay employees' benefits. The workmen's compensation system was replaced by the terms of the National Insurance (Industrial Injuries) Act 1946 as part of a radical reform of the social security system.

Industrial injury provisions were based on the premise that accidents at work are the responsibility of the whole of society and that the high rate of accidents in some industries, such as mining, should be accommodated by pooling risks. Industrial injury benefits were set at a higher level than supplementary and unemployment benefits to reflect an element of compensation and covered all employees apart from the self-employed. In 1983 industrial injury was abolished as a separate benefit, and replaced by statutory sick pay administered by employers. Disablement benefit is still available for long standing incapacity lasting more than 15 weeks, the awards being dependent on loss of faculty assessed on a percentage scale . The Social Security Act, 1986 introduced further restrictions on eligibility for disablement benefit. Workers who are less seriously injured (less than 20 per cent disabled) will no longer be eligible. As a consequence, it is estimated that 90 per cent of industrial injuries will go uncompensated (Lewis, 1987; Disability Alliance, 1987). A further change to the compensatory benefits system which took effect from April 1988 is the abolition of death benefits to the dependents of workers whose death was caused by an accident or illness due to employment.

The state system has provoked longstanding debate, primarily over arrangements for compensating occupational diseases. Claimants must be able to demonstrate that not only are they are suffering from a prescribed disease, but also that the disease is prescribed in relation to their particular occupation. The main drawback of a list system is that it can never be exhaustive. The Royal Commission (Cmnd 7054; 1978) suggested that an individual proof system might be preferable. This would enable workers suffering from a non-prescribed disease to claim benefits if they could prove that the disease was caused by their occupation. This recommendation was endorsed by the Industrial Injuries Advisory Committee (IIAC) (DHSS, 1981) with some reservations. They expressed concern about the number of claims which might result from a fully open proof system and argued that some specified conditions could be excluded. These would include conditions where occupational causation was most difficult to determine, such as heart disease, lung cancer and bronchitis. A proof system could conceivably present similar problems to those of civil law in that the procedures for establishing proof of causation can be lengthy and costly. Furthermore, in many cases medical science may not be capable of establishing with accuracy the cause of disease (Wilson, 1982). The government has not acted on the recommendations of the Royal Commission and those of the IIAC, so the problems of restricted eligibility for compensation of occupational diseases remain.

Employees may also claim damages from employers through civil law proceedings (tort) if they can establish that their injury or illness arose from the employer's negligence or breach of statutory duty. A few schemes pay lump sums as a substitute for tort damages, such as the pneumoconiosis compensation scheme run by British Coal and the British Nuclear Fuels Compensation Scheme for Radiation Induced Cancer. Lump sum payments are also available under the Pneumoconiosis etc (Workers Compensation) Act 1979 for sufferers of dust related diseases (including silicosis, byssinosis, asbestosis and mesothelioma) who cannot make claims on their employers. Information on the tort system of compensation is limited. Evidence cited by the Royal Commission for 1973, however, indicates that 46 per cent of all tort claims were

employers' liability claims; only 1.2 per cent of all claims were for occupational diseases (Cmnd 7054, 1978). The equivalent numbers for actual tort payments were 42 and 0.8 per cent, suggesting that a smaller proportion of disease than injury claims were actually successful. The figures indicate that the proportion of people issuing compensation claims against employers for occupational diseases is extremely small. The evidence also suggests that the proportion of injuries at work for which tort compensation is obtained is about 10 per cent (Cmnd 7054, 1978, p.24). These figures may not accurately describe the current situation.

Tort law is based on negligence rather than strict liability and has two main functions: first to compensate people injured as result of negligence; and second, to deter people from acting negligently (Harris, 1984). The process of tort litigation also acts as an inquiry into the cause of negligence. Compensation through tort law is long established, but it is not without its critics. Litigation is expensive, lengthy and the burden of proof which falls on the claimant can be high. In the case of cancers, for example, it can be difficult to establish 'beyond all reasonable doubt' that exposure to workplace hazards was the cause. Moreover, occupational diseases may take many years to develop by which time a company may have ceased business. The system is also unpredictable in that people may be awarded quite different sums for similar injuries and circumstances and is unfair to those who receive nothing. Tort compensation is not based on need, but on the ability to prove negligence. The Robens Committee (Cmnd 5034, 1972) criticised the effectiveness of the tort system as a deterrent to negligent health and safety practices by employers. They argued that the task of maintaining and enforcing health and safety regulations is made more complex because the possibility of litigation had to be taken into account. Furthermore, the possibility of compensation litigation also hinders investigations of particular accidents. The contrary might also be true; pressure from insurance companies to reduce compensation claims and fear of adverse publicity on corporate image may encourage employers to improve health and safety performance. The Royal Commission, however, did not take these criticisms on board and recommended no significant changes to the tort system (Cmnd 7054, 1978).

Further grounds for compensation which workers may resort to in the case of occupational accidents or illness are offered by law on product liability. Britain lags behind the US where manufacturers can be held liable for the safety of their products; the classic example being where the manufacturers of asbestos insulation materials were prosecuted for the hazardous nature of their products (eg. Borel v. Fibreboard Paper Products Corporation cited in Asch, 1979). The Pearson Commission (1978; Cmnd 7054) suggested that producers should be strictly liable for death or injury caused by defective products, but this recommendation was not taken up. The Consumer Protection Act 1987, which implements an EEC Directive on product liability, makes manufacturers of defective or hazardous products liable, without the need to prove negligence. This should enable workers to sue producers of hazardous materials used in the course of their work.

If occupational hygiene and health services operate as preventive responses to the problem of occupational ill health, compensation payments act as a safety net for those whose who fall through the system. The evidence suggests that the holes in the state compensation net are rather large. There are three problem areas. The first is that government plans for social security have been based on the assumption that disablement in general should be supported. The differential payments to the occupationally disabled which reflected an element of compensation have therefore been diminished. The second point to note is the trend towards containment of expenditure on social security payments generally and the abolition of various types of benefits has restricted eligibility and levels of payment. The third problem of the state system of compensation is the limited provision for compensating occupational diseases.

5.2 Key Issues for Compensation Policy

- The state benefit system for compensating occupational illnesses is limited and excludes many conditions. Changes in the regulations have limited eligibility and available benefits. Although workers may resort to civil law to claim compensation for occupational diseases, the burden of proof is large. The available evidence indicates that the proportion of employers' liability claims for occupational diseases is quite small; the vast majority being for occupational injuries.
- The tort system of compensation is costly, time consuming and the burden of proof on the claimant can be onerous. In the case of diseases such as occupational cancers, where there is still considerable uncertainty in aetiology, lack of medical knowledge may mean that it is not possible to establish that a particular hazard caused the cancer. A scheme based on a scale of probabilities or risks could provide the basis for a fairer system and would be less costly to administer.
- The appropriateness of tort law has been challenged both in terms of its ability to deter negligent action on the part of employers and as a method of providing compensation. Other deterrence factors include sanctions imposed by health and safety inspectors and the morale of the workforce. If these are sufficiently effective, this function of the tort system is not essential. Its more important function is to provide compensation for workers. Alternative systems for compensating workers suffering occupational injuries and illnesses warrant further attention.

6 NEW DIRECTIONS IN OCCUPATIONAL HEALTH POLICY

6.1 Introduction

Earlier chapters of this report outlined the main features and limitations of policies for health at work in Britain. This chapter returns to some of these issues and, drawing on international examples, outlines various policy options which could address these deficiencies. None of these should be seen as a magic bullet: they were devised in different political and economic environments and may not 'travel' well. Some provide cautionary lessons, others offer potential models of good practice. Following the organisation of earlier parts of the report, the discussion is divided into three sections which cover the regulation of health and safety standards in the workplace, occupational health services and compensation for occupational injuries and diseases. There are, however, overlaps and inter-relationships between key issues and suggested areas for policy development.

6.2 Regulating standards

Workplace health and safety policies are based on the premise that better standards of performance are dependent on self-regulation, with some inspection by external agencies, such as the health and safety inspectorate. Both approaches have faced problems in recent years: the system of workplace inspection has been weakened, whilst self-regulation may not have been effective in all sectors. Similarly, civil law proceedings (tort) may not act as a sufficient deterrent to negligent practice.

6.2.1 External regulation

Recent increases in major accident rates have drawn attention to the need for improvements in the way that health and safety at work is regulated. The rates vary by type of industry, but accidents are more likely to occur in small businesses, a growing number of which are not registered with the health and safety inspectorate or the local authority (Chief Inspector of Factories, 1985). In the construction industry, subcontracting is widespread and work sites tend to be transient. The changing nature of industry and new responsibilities have put greater pressure on the health and safety inspectorate. The most obvious response to the problem would be to increase the size of the inspectorate. Indeed, the HSE noted that 54 more inspectors were needed to restore the backlog of 10,000 inspections due in 1986/87 (HSC/HSE, 1987). There are plans for modest increases in the factory and agricultural inspectorates in 1988/89 (Hansard, 1988).

A different response would be to organise the inspection and regulation work more effectively. For example, the HSE have targetted a series of inspection blitzes at problem sectors, such as the construction industry. Information which might enable the inspectorate to focus its work, however, is limited. Data on the frequency or incidence of accidents alone are insufficient. Currently, the factory inspectorate's work programme is planned according to a rating system based on known hazards, the risks which sites present to the public health, and the competence of managers to control risks. Local authorities have been encouraged to adopt a similar approach to their enforcement work. More meaningful information could be obtained by systematic inspection and auditing of safeguards, systems of work, rules and training methods (APAU, 1988). This could make the existing system of external inspection and self-regulation by industry itself more effective.

Information is not only derived from routinely collected data: detailed analysis and research could also help the HSE identify priorities for future work. The House of Lords Select Committee on Occupational Health and Hygiene Services (1983) identified that the majority of research is on epidemiological issues and that little research is carried out into the development of appropriate standards for exposure to work hazards. Moreover, research is fragmented between government departments and various non-government organisations. The Committee recommended that resources (either public or private) for research on occupational hygiene could be better organised and that the HSE should act as a clearing house for research and information. Databases of published information such as HSELINE and that collated by the US National Institute for Occupational Safety and Health (NIOSH) and the new computerised system of reporting by EMAS (the MIRANDA database) should go some way towards achieving this objective.

Incentives for employers to comply with health and safety regulations are limited, not only by the frequency of inspections but also by the sanctions which inspectors have at their disposal. Fines levied on breaches of safety standards have been low. The HSWA 1974 provided for the possibility of imprisonment for violation of health and safety legislation: to date this option has not been exercised in successful prosecutions of employers. Increasing the severity of penalties in practice could strengthen the hand of the external inspection agencies. A further option for external regulation of health and safety performance might be taxing employers for accidents and diseases that arise in the course of work. Conceivably, this may have the effect of suppressing accident reporting and the information that is currently collected would not be sufficiently comprehensive to enable a fair system to operate.

A similar approach would be for insurance companies to negotiate premiums with employers based on individual safety performance and the level of occupational health provision rather than the industrial averages which are currently used. Atiyah (1975) suggests that experience rating, as this is known, is only viable for larger firms with over 500 employees. This is because assessments are based on incidence rates, so an accident involving one person in a small firm employing say three people, would be recorded as affecting 33 per cent of the workforce, whereas the equivalent proportion for a larger company would make the incident seem less significant. It is also conceivable that a firm could have an excellent experience rating but upon inspection could be found to be violating health and safety standards. In this sense risk assessments may be better. There is a need for sensitive performance indicators or defined minimum standards to be

developed which can reflect conditions in a range of employment units.

Increasing field inspectors and imposing stiffer penalties can only be part of the response to the problem of health and safety in the workplace. Policies based on enforcement by external regulation may have little overall impact on working conditions or on promoting the health of the workforce. The relative significance of factors affecting compliance with regulations is not known. Given the changing nature of production and the momentum of those changes, the policies which are likely to have the greatest impact on health and safety at work will be those which aim to improve self-regulation procedures.

6.2.2 Self-regulation

The three criteria for effective self-regulation identified by the Robens Committee (Cmnd 5032, 1972) are awareness of the importance of safety and health at work; assessment of problems, practical objectives and defined courses of action; and clear legal and operational definition of responsibilities. Of these, the first is the most fundamental.

Small businesses pose particular problems in that the level of awareness of health and safety issues may not be high and resources to monitor and control standards or to buy in expertise are typically limited. There are, however, some examples of projects which address the specific needs of small firms. There are now five Health and Safety Advice Centres, or Hazards Centres as some are more popularly known (London Hazards Centre Collective, 1988). The Birmingham Centre, for example, provides information and advice on hazards in the workplace and the community and provides monitoring equipment for groups who may not be able to afford the services of an industrial hygienist. The centre identified working conditions amongst the Asian community as particularly poor and with funding from the Manpower Services Commission and Birmingham Inner City Partnership has appointed an Asian worker to produce basic advice literature in appropriate languages (HSAC, 1986). A second example of work specifically tailored to the needs of small businesses is the Birmingham Safety and Information Centre set up by the Health and Safety Association which offers courses for those working in small businesses outlining basic structures for safe systems of work. These include accident reporting and recording, information on where to get advice, and help with writing a company safety policy (Corfield, 1988).

The problems of small firms are compounded by the lack of financial and information resources. One proposal for tackling these problems is based on the Scandinavian Work Environment Funds which operate in Sweden and Denmark. The funds are raised from a payroll levy of about 0.1 per cent. In the UK this would generate about £200 million (GMB, 1987) which could be used for a variety of purposes, such as the development of group based occupational health and hygiene services, or providing information on hazards and standards.

The second criterion for effective self-regulation is clear identification of problems and defined programmes for action. Section 3.3 noted that this requires effective systems for monitoring hazards, investigating incidents and auditing health and safety systems. One criticism of a system based on self-regulation is that if employees are not involved, those evaluating safety arrangements typically have the company's profits as their primary concern: at best, safety will be a secondary objective.

The Royal Society for the Prevention of Accidents (RoSPA) have recently introduced an International Safety Rating System (ISRS) to Britain, based on a programme developed at the International Loss Control Institute in Atlanta, Georgia. The ISRS is an evaluation tool for determining the quality of a company's safety system and the level of compliance with legal requirements (RoSPA, 1988). The system offers a broad approach to safety issues by emphasising both the control of occupational injuries and diseases and the prevention of damage to property. The standardised approach enables safety systems to be evaluated internally or by an external auditor and comparisons of relative performance to be made, both over time and in relation to similar companies. RoSPA appeal to the profit motive by arguing that the cost of accidents to companies can be substantial. Costs arise from medical and compensation payments but also from damage to property and equipment and these can be between one and three times higher than medical expenses. The framework might also encourage insurance companies to offer discounts to firms who organise approved health and safety systems (Medical Commission on Accident Prevention, 1988).

Clear definition of legal and operational responsibilities is the third criteria for effective self-regulation. The HSWA 1974 and SRSCR 1977 provide the legislative background for joint self-regulation by employers and employees, but provisions for participation by employees are limited to unionised workforces. There are no clear guidelines on the role of employees in self-regulation.

Chapter 4 outlined some of the arguments for the involvement of employees in health and safety issues. The effectiveness of employee involvement in health and safety issues has not been proven, but there is some support for the view that participation has a positive effect on company safety performance (James, 1983). Employee participation in the occupational health and hygiene services may also counter-balance the partial interests of employers and the medical profession (Gevers, 1985). There are a number of international examples of methods of securing worker involvement in health and safety issues. Legislation in the US, Italy and France, for example, has defined legal entitlements for employees in more specific terms than the HSWA 1974. These provisions cover areas such as access to information, investigation of work hazards, and suspension of work in the event of imminent risk of serious harm or injury.

In recent years there have been a number of campaigns for greater freedom of information across a variety of areas of public life. The sharing of information between employers and employees is central to joint participation in health and safety issues. The United States, which generally speaking has adopted a more open approach to information than Britain, provides some interesting examples. The New

Jersey Worker and Community Right to Know Act, 1984, among other things, strengthens citizens' claims on information about elements in the environment which could be hazardous to their health. Although in the UK section 28 of the HSWA 1974 and the safety representative regulations of 1978 provide a basis for the disclosure of hazard information to employees through safety representatives, the wording of the legislation is open to variable interpretation. Furthermore, many workplaces do not have union representatives or safety committees. Whilst legislation does not provide a guarantee that its provisions will be implemented, existing regulations could be extended to encourage wider safety representation in non-unionised workforces.

For some environmental hazards, there is a case for thinking about access to information in broader terms, since the hazards of the work environment may also affect the wider public. Whilst safety representatives are currently informed by health and safety inspectors of any violations of occupational hygiene standards by their employer, the general public (and indeed non-unionised workers without the legal rights enjoyed by officially recognised representatives) are not provided with such information. The Environment and Safety Act, 1988 proposes that a public register of enforcement notices served on employers should be kept. The Act aims to provide the public with better information about a company's record on health and safety and to strengthen the hand of the health and safety inspectorate by making enforcement notices a more powerful sanction.

The difference between American and British approaches to information accessibility may be rooted in the understanding of responsibility for occupational injury and ill health. It could be argued that the British approach to workplace health and safety, which relies to a large extent on safety education rather than on provision of information on work hazards, is implicitly based on a 'victim blaming' approach to injury causation. The assumption is that by changing the behaviour and vigilance of individual workers, the number of accidents will be reduced. Individual awareness and observance of safe methods of working, however, is only one side of the story. It is also questionable whether accidents arise from negligent behaviour on the part of employees. Other countries have adopted a different approach by aiming to improve workers involvement in the investigation of suspected hazards, or more fundamentally through their whole approach to the issue of work and health. France provides an example of the former approach, whilst the Scandinavian Work-Environment laws illustrate the latter.

In France, there has been increasing regulation of employee-employer relations by legislation. Current regulations provide for compulsory hygiene and safety committees in all firms with over 50 staff. The committee's function is to oversee the effective operation of safety devices and occupational hygiene standards, and to conduct investigations into accidents and occupational diseases if they occur. The 1982 Auroux laws extended the committees' remit giving them the right to call in experts to investigate hazards or incidents and to be consulted on all aspects of working conditions and the organisation of work. On paper this legislation provides workers' representatives and safety committees with greater powers than those possessed in Britain. But legislation is not necessarily mirrored in practice: many companies in France do not have committees, and the committees often do not operate effectively in those that do. As in Britain, small businesses have a poor record of employee participation (Cassou and Pissaro, 1988).

One further element of the French system which should be mentioned and which is mirrored in occupational health policy in Canada, Sweden and Norway, concerns workers' right to stop working, without loss of pay, if they consider that their safety is in jeopardy. Whilst such provisions could clearly be abused by employees, in practice this privilege is not exercised very often; its main function being to encourage employers to plan for safety and to consult workers on matters concerned with the work environment (GMB, 1987). This provision is implicit in section 7 of the HSWA 1974, but it is not widely realised. Legal clauses may not offer much protection in practice. Workers refusing hazardous work may be simply replaced by others who do not complain (Clayson and Halpern, 1983). If the right to stop work is to convey any advantage it must be supported by legislation which protects against discrimination for questioning safety standards.

In Norway and Sweden, this provision forms just one aspect of a comprehensive approach to occupational health and safety. The main point of departure of Scandinavian policies for health at work is recognition of the limitations of conventional strategies for workers' protection. In particular, it is argued that normative approaches based on the specification of occupational hygiene standards are limited in that it is extremely difficult to specify standards for some stressors, particularly those concerned with work design or psychosocial factors. Moreover, the separation into individual standards and measurements means that interactions between elements in the work environment are overlooked (Gustavson, 1980). The Norwegian and Swedish Work Environment laws offer legislation which is designed to support and enable local activity. A key assumption is that evaluation of the health effects of the work environment needs to be based on the active participation of those with first-hand experience of the work involved, in collaboration with experts in the field. Extensive research had previously demonstrated the relationship between job design and stress. The legislation, therefore, recognises that improving the psycho-social aspects of working life and elements of the physical environment are often two sides of the same coin. The Norwegian act requires the organisation of work and work time to take opportunities for self-determination and maintenance of skills into account. The HSE (1988) have recently pointed out that the value of employers instituting an occupational health policy which routinely includes consideration of aspects of mental health.

Another interesting element of the Norwegian work environment law concerns the burden of proof in hazard control. In most countries the burden of proof

to, say, ban a particular chemical is great. The work environment law, however, places greater emphasis on activities within the workplace, allowing faster adaptation to new conditions. More value is given to the perceptions of employees so that the health effects of working conditions are accepted on a lower level of proof. Minimum standards, however, are still used to define the bottom line of good practice in occupational hygiene.

In summary, the Norwegian and Swedish legislation offers an approach to occupational hygiene which enables a more comprehensive view of the relationship between work and health to be taken. As enabling legislation, however, the success of this approach can only be judged at the level of the individual enterprise. Critical evaluation of the extent to which participatory strategies have been implemented and have achieved their objectives should provide valuable information as to whether this can be truly considered a model of good practice.

6.3 Occupational health services

6.3.1 Level of Provision

Government policy towards occupational health services has changed little since the nineteenth century. With no formal statutory provision, the onus is on employers to provide services for their employees or not. The HSWA 1974 anticipated that provision of OHSs would be extended voluntarily, but there has been little overall change. The House of Lords Select Committee on Science and Technology (1984) drew attention to the need for OHSs, particularly in small and medium sized firms, and outlined three possible strategies for achieving this. The first would be to continue the existing system. The other two suggestions warrant more detailed analysis.

The second option would be to impose a statutory obligation on employers to provide an occupational health service for their employees. A number of countries have adopted this approach: employers in Finland, France and Czechoslovakia, for instance, are obliged to arrange preventive occupational health care for their employees regardless of the size, location or type of workplace. Ratification of the ILO Convention 161 would move Britain one step nearer this approach. The Convention calls for services to be developed 'for all workers ... in all branches of economic activity and in all undertakings'. Commitment to the Convention would not mean that services would have to be provided immediately. It would, however, place an obligation on the government to draw up plans for the extension of OHSs (HSC, 1984). The Select Committee considered that mandatory OHSs might impose unacceptable costs on industry. Instead the committee proposed that this option should not be pursued without having explored what could be achieved by the third option: a detailed voluntary code (or codes) of practice. Some guidance material has now been produced (HSE, 1988). The Chemical Industries Association (1987) have also begun to develop principles and strategies for the development of a comprehensive approach to occupational health in the chemical industry. It remains to be seen what impact the guidelines will have on the level of occupational health service provision.

At best, a voluntary code of practice will increase awareness of the need for OHSs and the types of services that could be offered. It remains the case that it will not be viable to provide OHSs in-house in many small firms. There is therefore a need for the development of different forms of private and collective provision. Private companies such as BUPA and AMI are extending the scope of their occupational health work beyond the traditional annual executive medical. Other specialist companies have been established with a focus on health promotion issues. Fitness for Industry, for example, provide fitness testing and advice for employees, whilst Chestcare Ltd. offers a mobile breast and cervical cancer screening service. One option, identified by the House of Lords Select Committee (1983) which has yet to be developed, is for the NHS to sell occupational health services to other employers. As noted earlier, however, provision of these services for NHS staff is poor, so any spare capacity to sell to external users is unlikely unless services are developed with this specifically in mind. Occupational health services of this kind could be organised at the regional or district level. The present climate of NHS funding, which encourages innovative approaches to income generation, may mean that such schemes could become more widespread. Scunthorpe health authority, for example, has introduced a scheme to provide occupational health for small workforces. It offers two services: the basic service which costs just £10 per annum per employee and the comprehensive which is £16 per annum (Kazem, 1987). Worcester DHA is already planning to sell OHSs and advice to local businesses, whilst Bolton DHA has introduced charges to commercial organisations for extracting medical records for reports on the health of employees (NAHA, 1988). With NHS based services there is the risk of a partial approach to occupational ill health if services focus on disease identification and treatment and overlook opportunities for prevention through action directed toward the work-environment and work processes. However, they do have the advantage of providing a means of promoting better health for workers whilst also providing a source of income to health authorities.

Extension of the coverage of OHSs on either a mandatory or voluntary basis might make some form of monitoring and evaluation of company, group and contract services desirable. In the future the Employment Medical Advisory Service (EMAS) is likely to take a more enabling role, promoting other sources of occupational health advice and encouraging the development of shared services. This function could be extended. EMAS could take responsibility for establishing services organised on an area basis and could additionally oversee the general level and quality of services outside such a system. The agency would also be in a prime position to co-ordinate the skills of a range of professionals including occupational health doctors and nurses, paramedics, hygienists and engineers necessary for a comprehensive approach to the prevention of occupational injury and disease and the promotion of wellbeing amongst the workforce (Webb, Schilling and Babb, 1988).

A further constraint to the development of OHSs is

funding. Clearly for those companies which have already developed occupational health provision for their employees, meeting the costs of the service is not a problem. For small and medium sized firms, there may be a case for some level of state support. Bearing in mind that the state already meets the cost of occupational and non-occupational ill health through the health and social security systems, incentives to encourage employers to take greater responsibility for the health of their employees could make sense in economic terms. Grants to employers with less than a threshold number of employees would be one option. The grants could be funded partly from a Work Environment Fund of the type suggested earlier and partly from National Insurance/NHS funds. The grants could be used to finance group OHSs or could be used by individual companies to arrange their own OHS package with an external contractor(s). One problem in operating such a system would be determining the value of grants since there is a lack of information on the costs of providing OHSs with different forms of organisation. A limited number of costed and evaluated experiments might provide a more informed basis for future policy. If the grants were funded in part from a payroll levy then the large companies would effectively be subsidising small and medium sized firms. The scheme would therefore need to provide tangible benefits to all types of companies if it were to be acceptable.

6.3.2 Towards a comprehensive occupational health service

Since the nineteenth century, there have been substantial improvements in occupational health and hygiene. But there is still considerable room for improvement. Chapter 5 of this report outlined the arguments for a comprehensive approach to occupational health which tackles both workplace hazards and broader areas of health that can be influenced by health promotion programmes. Some of the pitfalls of workplace health promotion programmes were also discussed.

One of the major constraints to a comprehensive approach to work and health in Britain is the lack of an overall health policy. Canada has adopted a broad programme of health measures which are divided into five defined strategies. Employers and trade unions are recognised as important contributors to the programme's success. In the health promotion strategy, for example, the following courses of action are identified.

- Encouragement among employers of programmes designed to ease the transition from employment to retirement.
- Enlistment of the support of employers of, and trade unions representing, sedentary workers in the establishment of employee exercize programmes.

Under the health care efficiency strategy, the approaches include strengthening the industrial health services, including the training of personnel, and promoting employer programmes for employees with alcohol problems (Lalonde, 1978). The advantage of this model is that occupational health is not seen as entity in itself, but as part of a national commitment to promoting and improving the health of the population.

In Britain, health promotion programmes in the workplace are not widespread and those which have been adopted vary in the types of issues focused on and in their approach to the problem. Although the HSE has recognised the wider role that OHSs can play in promoting the health of the workforce, it has not developed policies or programmes that actively encourage the development of such services. Policy responses at national level and at the level of the individual firm need to be considered. In most countries legislation does not give adequate support to the promotion of occupational mental and physical health and wellbeing. We have already noted the examples of Norway and Sweden where legislation provides a framework which encourages the development of workplace prevention and health promotion programmes. Britain might follow this approach, but existing legislation and structures could also be used more imaginatively. The Public Health (Control of Diseases) Act 1984, for example, gives local authorities the power to publish or display information on health issues. Local authorities could use this clause to provide occupational health education, either through their own officers, or by grant aid to appropriate agencies (Lawrence, 1987). Health promotion bodies, such as the Health Education Authority and the Sports Council, are also beginning to consider how their activities relate to occupational health.

A particular problem with workplace health promotion programmes is the lack of evaluation of their costs and benefits, uptake often being based on largely assumed advantages. An action research programme could be established to evaluate and identify good practice examples in occupational health which could be followed by other workplaces of similar sizes or in similar industries. The work-environment fund discussed earlier could provide a framework for this. Applications for funds could be made by individual employers, trade organisations, trade unions or independent bodies (Webb, Schilling and Babb, 1988). An alternative model would be a central initiatives project along the lines of those which the government has established for care in the community, drug abuse and intermediate treatment. The New Directions Grants set up by the Carter Administration in the United States is a similar arrangement.

Evaluation of occupational health programmes is not an uncontentious issue. The WHO have spelled out some evaluation criteria for occupational health and industrial hygiene services (WHO, 1982), including programme relevance to needs and problems, the efficiency of resource use and the programme's effectiveness in relation to defined goals. But evaluation can be problematic. An employer's criteria for judging a programme's success might be different from those thought important by employees or occupational health doctors. This is illustrated by the evaluation of trade union health promotion programmes which have been developed in Sweden. The programmes, which are jointly funded by the National Board of Health and Welfare, the Confederation of Trade Unions and the Confederation of County Councils, are based on the principles of

equity and participation rather than being oriented to individual health risks such as smoking, alcohol or occupational hazards. The evaluation criteria are, therefore, based on behavioural and attitudinal changes and structural changes in work organisation rather than on medical criteria such as lowering of blood pressure or cholesterol levels (Petterson, 1987).

In the absence of financial or structural support from the state, prospects for the immediate extension of occupational health provision and the uptake of prevention and health promotion programmes in Britain depend on employers being convinced of the benefits of these services. Evaluation of existing programmes and dissemination of the results is central to that process. But this is unlikely to develop spontaneously without the active involvement of a lead organisation such as the HSE.

Two implications which arise from the broader approach to occupational health are the inter-relationships between OHSs and primary health care and the appropriate professional skills needed for the new type of service. It is important to recognise the contribution of primary care workers in the detection of occupationally-related ill health. A key problem is how to raise the level of awareness of the interactions between work and health in this sector. The Sheffield Occupational Health Project has been described as one approach to integrating occupational health concerns into primary health care. The project uses non-medical manpower, funded from the NHS scheme for the reimbursement of ancillary staff. This means that currently GPs can reclaim 70 per cent of the costs of the project. Provisions in the Health and Medicines Bill 1988, however, mean that the level of reimbursements administered by Family Practitioner Committees will be made more discretionary. This may have implications for the SOHP or the establishment of similar projects. A different approach would be the periodic attachment of an occupational health nurse to a health centre or group practice. The WHO (1980) identify the need for a greater occupational health component to the training of generalist physicians and community nurses so that they have greater understanding of these problems in their daily practice.

A comprehensive approach to occupational health requires the participation of a wide range of professionals as well as workers themselves. Increasingly, occupational health nurses are becoming key professionals in preventive occupational health services and it is likely that they will expand their role and responsibilities in the future. It is important to ensure that there are adequate numbers of nurses with specialist training: a substantial proportion working in the field do not have occupational health qualifications. Currently, training courses for the certificate in occupational health nursing are funded almost entirely by private means, either by individual nurses or by employer sponsorship. A distance learning programme has been pioneered by the HSE and the Royal College of Nursing, but it remains to be seen whether this will generate increasing numbers of trained occupational health nurses.

Independence of occupational health doctors and nurses is a further issue to address. Occupational health professionals under contract to an employer may find themselves compromised over issues such as company policy and confidentiality of records. Group based systems reduce the risk of this occurring since the professionals are not directly employed by a single company. Employee participation can also be an effective counterweight to the interests of employers and medical specialists and need not be a threat to autonomous professional practice if carefully structured. A participative approach to occupational health would require a redefinition of the role of occupational health and safety professionals as supportive rather than leading agents. To date, workers have been more directly involved in issues of occupational hygiene than in OHSs. There are, however, some international examples where employees have been more active in the administration of OHSs.

In Belgium, for example, the company health and safety committee, at least one-half of which consists of worker representatives, must be consulted before an occupational physician can be appointed or dismissed: the committee can also instigate dismissal procedures. Gevers (1985), however, reviewing arrangements for employee participation in EEC countries, concludes that for the most part, workers have remained agents of communication and information rather than consultation. He suggests two ways of shifting the balance in favour of the latter. One is that workers' representatives could be granted the right to demand inspections or examinations by a doctor or safety engineer. The second is that representatives could participate in the administration of OHSs (whether provided in house or on a group basis) through some form of management committee. A basic limitation to employees' influence on the organisation and functioning of OHSs, however, is the size of the budget for the service. This brings us back to the issue of funding and provision. In short, approaches which attempt to safeguard employees' control over OHSs through legislation or guidelines could be putting the cart before the horse. Some agreement establishing the level of occupational health care that should be provided is necessary before the privilege of being involved in its organisation and administration can be exercised.

6.4 Compensation

In the event of failure of preventive measures, workers who suffer from occupational injuries and diseases may be compensated for both their loss of income and for the pain and suffering endured. Chapter 5 outlined the limitations of current arrangements for compensating occupational injuries and diseases. But dissatisfaction with the current system has led to quite different alternative proposals. The TUC, for example, has argued for an expansion of no-fault liability compensation administered through the state (TUC, 1986), whilst the general workers union favour a system of strict liability for occupational accidents and diseases (GMBATU, 1987).

New Zealand and Canada already run no-fault schemes. Prior to 1974, New Zealand had a compensation system similar to that of the UK. The current system, which covers accidents from all causes,

aims to provide speedy, efficient payment of compensation at low administrative cost. Payments include compensation for loss of earnings, lump sum payments for permanent impairment of physical functioning, for pain and suffering, and for the costs of medical care. The system is funded from a levy on employers, from general and motor vehicle taxation and interest on investments. The employers' levy is calculated on the basis of estimated risks in 128 categories of industry as a rough performance indicator of accident records. No-fault schemes have proved effective in providing compensation, but they share some of the problems of the tort system in that they do not provide sufficient incentives to employers to provide safe systems of work (Sass, 1985). Furthermore, the New Zealand system has encountered financial problems in recent years, following pressure from employers to reduce their levy by 30 per cent (Ham et al., 1988).

Schilling (1978), in his evidence to the Pearson Commission, also argued for the abolition of tort action for work injuries on the grounds that it is counter-productive to accident prevention. Abolition would mean that employers' liability insurance premiums would no longer be necessary. These funds could then be diverted to a national insurance fund supporting an expanded state no-fault compensation system. They could also be tailored to reflect the actual accident and occupational disease records of individual firms as opposed to industrial averages. An alternative model might be to have an average levy with penalties and bonuses depending on safety and health records. This provision exists in New Zealand but has never actually operated. A strict liability system might have the advantage of making employers more accountable for occupationally related injury and disease but would be unpopular with employers and might prove too costly to industry.

Both the state system of industrial injury compensation and tort action present particular difficulties for people suffering from conditions not included in the list of prescribed diseases and related occupations. It would be difficult to establish no-fault compensation for occupational ill health without these sorts of criteria for delimiting conditions associated with work and those which are not. For conditions such as cancers it can be very difficult to establish 'beyond reasonable doubt' the precise contribution of occupational hazards. Automatic compensation schemes and payments based on a balance of probabilities were mentioned in Chapter 5. These offer alternative approaches to the tort system and could be adopted for other conditions or in other industries.

One of the main difficulties underlying the various policy proposals for workers compensation has been the dual role of the compensation system. On the one hand, it is seen as providing a means of payment for loss of faculty and earnings or for the costs incurred in the event of injury or disease. On the other hand, arrangements for compensation are intended to act as a deterrent to negligent action. In Britain, the problem is compounded by the fact that the organisation with ultimate responsibility for compensation is administratively separate from that responsible for regulating policies for health and safety at work. The former is overseen by the Department of Social Security, whilst the latter is the remit of the Health and Safety Commission responsible to the Secretary of State for Employment. In the Canadian provinces of Quebec and British Columbia the system of compensation is integrated with that for monitoring health and safety, the Workmen's Compensation Board also being the enforcement authority for health and safety legislation. This arrangement has the advantage of simplifying the structure for collection of information on occupational injury and disease and for planning initiatives across the spectrum of occupational health policy issues.

7 CONCLUSIONS

This report has outlined some of the key problems in occupational health policy in Britain. Despite improvements in the health and safety of workers over the long term, in recent years there has been a worrying increase in major accidents and growing awareness of the direct and indirect effects of employment on physical and mental health. Policies for health at work have yet to respond to these challenges.

Since the Health and Safety at Work Act 1974, occupational health policy in Britain has shown two conflicting trends. On the one hand, regulations and guidelines have become increasingly detailed. On the other hand, there have been attempts to deregulate the control of health and safety in the workplace. Whilst some employers have independently established an excellent reputation in this field, there has been little discernible improvement in the level of occupational health service provision in the last 14 years. For at least half the workforce consideration of the working conditions and processes which affect their health falls a long way short of that envisaged by the WHO.

The report has argued for an integrated approach to occupational health. A recent report on 'The Nation's Health: A Strategy for the 1990s' confirmed the need to revitalise policies for health at work (Smith and Jacobson, 1988). At the national level this requires recognition of the impact of work on health in both health and employment policy and coordination of strategies across government departments. Within individual firms it demands acceptance of the relationships between health and safety, the physical and psychosocial conditions which give rise to occupational injuries and diseases, and occupational health and hygiene services. Such an approach must also be based on the joint responsibility and participation of employers and employees. This approach represents an extension of the basic principles of the 1974 Health and Safety at Work Act. It also encapsulates, in a practical way, the principles of Health for All 2000 to which the government is committed. Strategic plans of this type, however, are easily made. It is less easy to specify how this approach could be taken forward and how it might transform existing occupational health and hygiene procedures.

This report has described some of the gaps in occupational health policy and in the level of knowledge about the functioning and effectiveness of occupational health and hygiene measures and has outlined some policy options which could be followed. International experiences can already demonstrate some of the potentials and pitfalls which different options may offer. Much remains to be done in considering how an integrated prevention and health promotion approach to occupational health can best be organised and implemented. In setting out some of the key issues, constraints and options this report is a first step towards a comprehensive policy for health at work.

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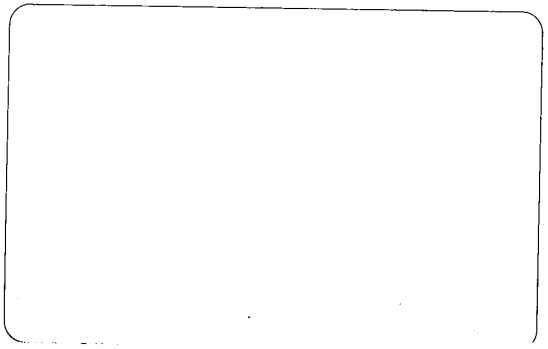

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