

OCCUPATIONAL HEALTH

Ethically Correct, Economically Sound

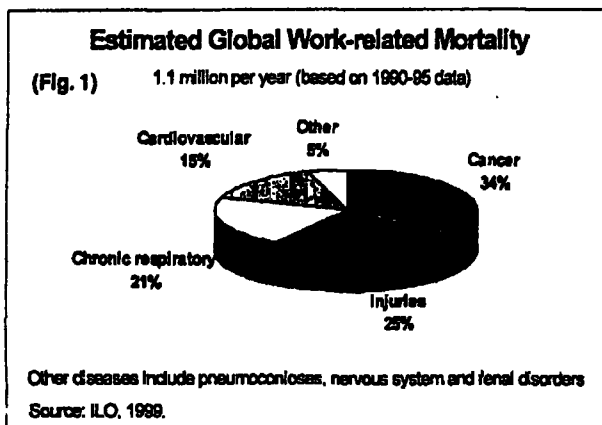
Hundreds of millions of people throughout the world are employed today in conditions that breed ill health and/or are unsafe.

- * Each year, work-related injuries and diseases kill an estimated 1.1 million people worldwide, which roughly equals the global annual number of deaths from malaria.
- * This figure includes about 300,000 fatalities from 250 million accidents that happen in the work place annually. Many of these accidents lead to partial or complete incapacity to work and generate income.

- * Only 5-10% of workers in developing countries and 20-50% of workers in industrialized countries (with a few exceptions) are estimated to have access to adequate occupational health services. In the USA, for example, 40% of the work-force of some 130 million people do not have such access.
- * Even in advanced economies, a large proportion of work sites is not regularly inspected for occupational health and safety.

Making working conditions safe and healthy - the *raison d'être* of occupational health is in the interests of workers employers and governments, as well as the public at large. Seemingly obvious and

Underestimated: The evaluation of the global burden of occupational diseases and injuries is difficult. Reliable information for most developing countries is scarce, mainly due to serious limitations in the diagnosis of occupational illnesses and in the reporting systems. WHO estimates that in Latin America, for example, only between 1 and 4% of all occupational diseases are reported. Even in industrialised countries, the reporting systems are sometimes fragmented. For example, a 1993 economic impact analysis of hazardous substances regulations in Australia found data lacking in many areas and had to rely on extrapolations from Scandinavian and USA data.



- * Annually, an estimated 160 million new cases of work-related diseases occur worldwide, including respiratory and cardiovascular diseases, cancer, hearing loss, musculoskeletal and reproductive disorders, mental and neurological illnesses.
- * An increasing number of workers in industrialised countries complain about psychological stress and overwork. These psychological factors have been found to be strongly associated with sleep disturbance and depression, as well as with elevated risks of cardiovascular diseases, particularly hypertension.

simple, this idea has not yet gained meaningful universal recognition.

The reasons for that are numerous and complex and include perceptions that there will always be plenty of young and strong workers to replace the old ones, both on production lines and in pension funds. Within the next 30-40 years, this will probably no longer be the case everywhere.

The burden of occupational diseases and injuries and world trends in this area should be a matter of special concern. Particularly, because today's picture is almost certainly based on underestimates.

There are two main problems common in developed as well as developing countries: unwillingness to recognize occupational causes of injuries or health problems, and failure to report them even when recognized. The history of occupational health is that of a struggle between workers fighting for protection and preventative measures or compensation, and their employers seeking to deny or reduce their liability for work-related diseases and injuries. This conflict has greatly influenced statistical reporting. As a result, the burden of disease due to occupational exposures is normally underestimated.

Economic Impact: The health status of the work-force in every country has an immediate and direct impact on national and world economies. Total economic losses due to occupational illnesses and injuries are enormous. Such losses are a serious burden on economic development. Thus, apart from health considerations, the improvement of working conditions is a sound economic investment.

- * The International Labour Organization (ILO) has estimated that in 1997, the overall economic losses resulting from work-related diseases and injuries were approximately 4% of the world's gross national product.
- * In 1992, in European Union countries, the direct cost paid out in compensation for work-related diseases and injuries reached 27,000 million ECUs.
- * In 1994, the overall cost of all work accidents and work-related ill health to the British economy was estimated between S.P. 6,000 Million and S.P. 12,000 million.
- * In 1992, total direct and indirect costs associated with work-related injuries and diseases in the USA were estimated to be US\$171,000 million, surpassing those of AIDs and on a par with those of cancer and heart disease.
- * In the USA, health care expenditures are nearly 50% greater for workers who report high levels of stress at work. (Fig. 2)

children born and more people living longer) will change considerably the proportions between working and retired populations. This will undoubtedly increase pressure on the work-force for higher productivity and greater contributions to pension funds. Only a healthy work-force will be able to bear this pressure.

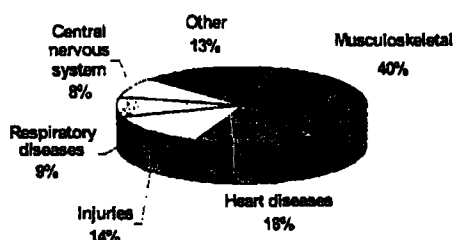
- * Currently there are some 590 million people aged 60 years and over in the world. By 2020, this number is estimated to exceed 1,000 million. By that time, over 700 million older people will live in developing countries.
- * Within the next quarter-century, Europe is projected to retain its title of the "Oldest" region of the world (elderly people represent around 20% of the total population now and will represent 25% by 2020).
- * According to a report, prepared by the French Government in 1999, by 2040 France is expected to have 70 people over 60 years for every 100 aged between 20 and 59, almost double the current ratio. As a result, the French social security and pensions system is expected to have a deficit of FF 800,000 million (US \$ 130,000 million) by that time.

Population Ageing : In certain industrialised countries, within the next quarter-century, population ageing (with fewer

Occupational Hazards and Exposures: Hundreds of millions of workers in both developed and developing countries are at risk from exposure to *physical, chemical, biological, psychosocial or ergonomic hazards* in the work-place. For many of these people there is often the risk of combined exposures to different occupational hazards.

- * Approximately 30% of the work-force in developed and between 50 and 70% in developing countries may be exposed to heavy *physical workloads or ergonomically poor working conditions*, which can lead to injuries and musculoskeletal disorders. Those most affected include miners, farmers, lumberjacks, fishermen and construction workers, warehouse workers and health care personnel.
- * Physical hazards, which can adversely affect health, include noise, vibration, ionizing and non-ionizing radiation, heat and other unhealthy microclimatic conditions. Between 10 and 30% of the work-force in industrialized countries and up to 80% in developing and newly industrialized countries are exposed to a variety of these potential hazards.
- * Exposure to hundreds of biological agents - viruses, bacteria, parasites, fungi and moulds - occurs in many occupational environments from agriculture to offices. The Hepatitis B and C viruses, HIV/AIDS infection and tuberculosis (particularly among health care workers) and chronic parasitic diseases (particularly among agricultural and forestry workers) are some of the most common occupational diseases resulting from such exposures.
- * Thousands of toxic chemicals pose serious health threats potentially causing cancer, respiratory and skin diseases as well as adverse effects on reproductive function. Workers can be and often are exposed to hazardous chemical agents such as solvents, pesticides and metal dusts.
- * Workers may also be exposed to various types of mineral and vegetable dusts. For example, silica, asbestos and coal dust cause irreversible lung diseases, including different types of pneumoconioses. Known since the time of Hippocrates, silicosis is still the most widespread occupational lung disease. Silicosis can predispose workers to tuberculosis and lung cancer, it is progressive and incurable but preventable. Vegetable dusts can cause a number of respiratory conditions (such as byssinosis) and allergic reactions (such as asthma).
- * The risk of cancer from work-place exposure is of particular concern. Around 350 chemical substances have been identified as occupa-

(Fig. 2) The Breakdown of Costs for Work-related Injuries and Diseases



Other diseases include cancer, skin diseases and mental disorders
Source: ILO, 1999

tional carcinogens. They include benzene, hexavalent chromium, nitrosamines, asbestos and aflatoxins. In addition, the risk of cancer also exists from exposure to physical hazards such as ultraviolet (UV) and ionizing radiations. The most common occupational cancers include lung, bladder, skin and bone cancer, leukaemia and sarcomas. In the European Union, approximately 16 million people are potentially exposed to hazards at work, including carcinogenic agents.

- * Exposure to thousands of *allergenic agents*, including vegetable dusts, is a growing cause of work-related illness. A large number of allergens have been catalogued which can cause skin and respiratory diseases (e.g. asthma). The number of these disorders, registered in several industrialized countries, is increasing steadily.
- * *Social conditions* at work,

which raise serious concerns about stress, include inequality and unfairness in the workplace; management style based on the exclusion of workers from the decision-making process; lack of communication and poor organization of work; strained interpersonal relationships between managers and employees. Stress at work has been associated with elevated risks of cardiovascular diseases, particularly hypertension, and mental disorders.

- * In the least developed countries, occupational health problems are found essentially in agriculture and other types of primary production. Heavy physical work, often combined with heat stress, pesticide poisoning and organic dusts, is frequently aggravated by non-occupational factors such as chronic parasitic and infectious diseases. Poor hygiene and sanitation,

nutritional problems, poverty and illiteracy heighten the risk of disease and/or occupational injury.

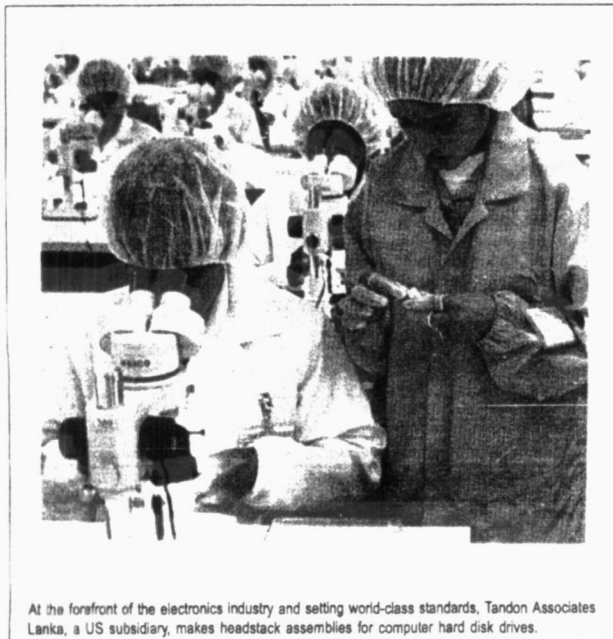
Occupational Health and Women: Women have been joining the work-force in increasing numbers, in sectors that include agriculture, industry and services, making up about 42% of the estimated global working population. Although they contribute appreciably to national economies, their special needs are seldom adequately met, even when they have access to some occupational health service.

- * When exposed to occupational hazards, women of fertile age are susceptible to specific adverse effects on reproduction, including abortions (embryotoxic agents) or malformations of the foetus (teratogenic agents).
- * Female workers often suffer from musculoskeletal disorders because neither the tasks nor the equipment they use, which is normally designed for men, are adapted to their built and physiology.
- * In addition, female workers have specific stress-related disorders, resulting from job discrimination (such as lower salaries and less decision-making), a double burden of work (work-place and home) and sexual harassment.

Child Labour: According to the ILO, of the 250 million children between the ages of 5 and 14 working in developing countries today, nearly 70% work under hazardous conditions. Asia has the most child workers with 61% of the global total, Africa has 32%, and Latin America 7%. Africa, however, leads in the proportion of working children, with around 41% of all children aged between 5 and 14; the proportion in Asia is 22%, and in Latin America 17%.

Vulnerable Populations : Women Migrants, minorities and children are particularly vulnerable to occupational hazards. This is especially true in the informal sector, where workers are not necessarily protected and are often subjected to highly unsafe conditions in makeshift factories. Entire families may be exposed to hazards associated with industrial processes in the home, or entire communities may be affected by uncontrolled hazardous emissions from factories located adjacent to their homes.

WHO's Response: Since its inception in 1948, WHO has recognized the utmost importance of improving the health status of working populations and has been developing international collaboration in this area. Today, WHO collaborating Centres carry out research, analyse data, identify trends, prepare and disseminate reports and make recommendations for national public health services and decision-makers. However, developing countries are yet to be fully involved in this work.



At the forefront of the electronics industry and setting world-class standards, Tandon Associates Lanka, a US subsidiary, makes headstack assemblies for computer hard disk drives.

In order to arrive at more accurate estimates of the global burden of occupational disease and injuries, there is a need for further improvements and standardization of occupational health reporting in all countries, most particularly in developing countries. Another area, which needs particular attention, is the development of methods to estimate the economic impact of occupational injuries and diseases, as well as the cost of early occupational health interventions.

At present, the emphasis of WHO's Occupational Health Programme is on data collection and analysis, research, formulation of strategies and recommendations for hazard prevention and control, human resource development with special emphasis of developing countries, as well as rational development of the intentional network of collaborating centres.

WHO's Occupational Health Programme also addresses groups of workers with special needs. These include women and workers in small enterprises or in the informal sector, who are usually not covered by legislation and do not have access to occupational health services.

Strengthening international partnerships in the field of occupational health is yet another area of importance. WHO has paid special attention to co-operation and co-ordination of its work with the ILO, which works hand in hand with WHO to protect the work-force and to ensure safety and health at work. The Joint ILO/WHO Committee on Occupational Health meets periodically to review occupational health priorities and to make appropriate recommendations for international action.

WHO collaborates actively with the International Commission of Occupational Health (ICOH), the International Occupational Hygiene Association (IOHA), the International Ergonomic Association (IEA), the European Commission (EC) and other non-governmental organizations striving to protect the health of workers.

WHO has also launched the Prevention And Control Exchange (PACE) initiative, which aims at the development of national capabilities in the field of primary prevention of occupational hazards. This is achieved through the promotion of awareness and political will, transfer of appropriate technologies, development of human resources, promotion of applied research and information dissemination. On-going activities include the preparation of documents on the prevention and control of specific hazards, such as noise and dust. The publication on dust is also relevant to the Joint ILO/WHO International Programme on the Global Elimination of Silicosis.

Each year, WHO and its Collaborating Centres and NGOs plan joint activities to implement the Global Strategy on Occupational Health for All.

Courtesy - WHO