
Chapter 7

Occupational Health

The systems operating in Japan to improve the general health of the population can be described as providing blanket coverage from cradle to grave, starting with regular medical examinations that are provided in local communities, schools and workplaces. With the aim of safeguarding and improving the general well-being of workers' workplaces in Japan and contributing to the provision of a comfortable working environment, a great variety of occupational health and safety strategies have been adopted over many years. Furthermore, occupational health initiatives have been taken by the centralized government regulation and enforcement, under an overarching legislative framework.

Before the war, because of poor working conditions many workers in Japan met with industrial accidents and fell victim to occupational diseases. After the war, thanks to regulation and enforcement by government agencies acting under the force of a wide-ranging legislative framework, a proper system was put in place to prevent the occurrence of such accidents and occupational diseases. In recent years, further progress has been seen in occupational health initiatives, with the implementation of measures in workplaces that will create healthy places to work and secure better levels of health for workers.

In developing countries currently undergoing rapid industrialization, such as in Asia and South America, work-related health problems have become rampant. Many aspects of the history of the development of occupational health measures in Japan may be applicable to these countries, particularly with respect to government regulation. From this perspective, this chapter will introduce the history of occupational health in Japan, focusing on the principal issues, solutions and government policies for a number of different eras. We will also

examine those approaches taken in Japan that may be of assistance to developing countries today.

1. History of Occupational Health in Japan

Occupational health in Japan has evolved in response to the health problems of workers employed in the major industries predominant in each particular era. Recent years, however, have seen increased emphasis placed on the role of the workplace in securing better mental and physical health for workers. This approach of providing a better working environment from the outset represents a move beyond the previous approach of tackling workers' health problems after, rather than before, they occur. Looking first at the pre-war era and then at the situation since 1945, this section will survey historical trends in occupational health measures in this country.

1-1 Worker Protection Measures Prior to 1945

The connection between work and diseases had already been observed in Japan's pre-modern period, as demonstrated by the results of research as far back as "Yojokun (A Teaching of Wellness, Ekiken Kaibara)", published in 1713. He found that mine workers often died within around three years of starting work as a result of pneumoconiosis caused by inhaling mine pollution, soot and smoke in the course of long working days. There was still no concept of occupational health at this time, however, whereby the health problems of workers might be redressed.

In the ensuing Meiji Era (1868~1912), the Japanese government established many state-owned industries under a deliberate policy of national industrialization. The workers at these

factories suffered from poor working environments, overwork and inadequate nutrition, with the result that tuberculosis, feared at the time as a “fatal disease,” broke out periodically within factories and workers’ quarters, thereby arguably qualifying as a kind of occupational disease.

The first law adopted in Japan with the aim of protecting these workers was the Factories Act of 1911, which came into force in 1916. Its principal provision was to prohibit night work by women and youths. Then in 1905 the Mining Law was enacted, which brought regulation of the mining industry in line with the country’s forest industry, agriculture and fishing industries. Both these laws contained many exemption provisions however, and were criticized as being essentially toothless.

Although the government first drafted the Factories Act in 1882, the proposed legislation provoked strong opposition from the nation’s factory owners, who put every obstacle in the way of its enactment. Even after it was passed into law, they succeeded in delaying its enactment for a further five years. In order to overcome this opposition, the government asked a physician, Osamu Ishihara, to conduct a wide-reaching fact-finding survey into the working conditions and work-related deaths of female rural migrant workers, and the results of that survey were a major impetus in getting the Factories Act passed in the diet¹. This was the first recorded use of the results of epidemiological research in the formulation of government occupational health policy. In addition, the concept of “occupational health” was first introduced to Japan with the opening of a hospital in a state-owned steel mill. Founded in 1896 in Yahata Village in Fukuoka Prefecture, the new hospital thereafter managed the occupational health of its workers.

The exemption provisions under the Factories Act and the Mining Law proved to be an obstacle to Japan’s admission as a permanent member of the International Labor Organization (ILO), which had been founded in 1919. These exemptions were

subsequently gradually phased out, thereby expanding the protection of workers. In 1923 the Factories Act was revised, introducing measures such as an increase in the minimum working age of minors, along with an expansion of the definition of night work. In 1924 the Mining Law was also amended.

As the Showa Era (1926~) commenced, a succession of ordinances were promulgated concerning living quarters for factory workers, as well as safety management at factories, mines and construction sites. Some progress in occupational health was also seen, for example in 1930 miners’ pneumoconiosis was officially recognized as an occupational disease, as was silicosis in 1936.

However, as the country headed down the path to the Pacific War, special wartime regulations were adopted one after another. These gradually rendered the above-mentioned laws and ordinances defunct in practice, thereby undermining their intended function of protecting workers.

1-2 Post-war Administration of Occupational Health

1-2-1 Establishment of a New Legislative Framework for Occupational Health (Immediate Post-war Period)

The Factories Act and Mining Law were resurrected immediately after the war ended, in 1946. As both laws were now inadequate in view of the international standards of the time, the Labor Standards Law was enacted in 1947, consolidating the two statutes, together with other pre-war worker protection ordinances. As the Labor Standards Law also set out a health and safety management structure for employers to adopt, at a stroke Japan had a proper legal system in place for the regulation of occupational health. With the establishment of the Ministry of Labour in 1947, the nation also acquired a specialist government agency that was dedicated exclusively to administering labor policies.

The pressing issue of the time was to prevent

¹ Kawakami, Takeshi (1965) *Gendai Nihon Iryo shi* [Japan’s History of Modern Medical Care] Keiso Shobo.

workers from contracting diseases such as tuberculosis, dysentery, silicosis, and heavy metal poisoning. The Labor Standards Law contained provisions that would prevent harm to workers, prohibited the manufacture of harmful substances, and provided for health and safety education along with medical examinations. Calls were made for medical examinations to be provided for all workers, and for the wearing of protective equipment to be strictly observed. From 1948 when the “Silicosis Control Committee” was set up, numerous policies were adopted to deal with silicosis from a variety of angles, and other ordinances concerning occupational safety protective equipment were brought into force. In addition, steps were taken to foster awareness of occupational health such as “National Industrial Health Week,” launched in 1950 with the aim of educating the general population about occupational health issues.

1-2-2 Responses to Frequency of Occupational Disease and Industrial Accidents (mid 1950s~1960s)

From the mid 1950s, occupational diseases and industrial accidents became more common as the country experienced rapid growth in heavy industry. The “Primary Industrial Accident Prevention Plan” was drawn up to address this problem, and between 1955 and 1960 various protection laws, a medical examination system, and preventive ordinances were introduced. In the 1960s, as the country entered a period of strong economic growth and technological innovation, new kinds of industrial accidents began to occur. In response, measures were adopted in the form of various kinds of preventive ordinances as well as legislative measures (see Table 7-2).

In 1964, with the aim of encouraging businesses to take the initiative in conducting health and safety management programs, the Law regarding Organizations for Industrial Accident Prevention was passed. At the core of this law was the establishment of the Japan Industrial Safety and Health Association (JISHA), as well as the creation of five industry-based health and safety

associations.

1-2-3 Enactment of the More Comprehensive Law on Industrial Health and Safety (1970~1980s)

Although by now a series of occupational health laws and ordinances were in place, Japan’s rapid development as an industrial society meant that it was no longer possible to effect a comprehensive approach to occupational health with an industrial accident prevention policy based on the system of laws centered on the Labor Standards Law. Having come to this conclusion, in 1972 the government passed the Industrial Health and Safety Law, which both split off those sections of the Labor Standards Law concerning occupational health and added more comprehensively to their provisions.

Whereas the Labor Standards Law was strongly characterized by a setting out of minimum standards and enforcing compliance with these, the Industrial Health and Safety Law went one step further, allowing employers to both develop measures for preventing hazards to workers’ health that were better suited to the changing nature of their business, and to undertake endeavors to develop more comfortable working environments. It also provided for assistance to small and medium-sized enterprises, and the training of specialist occupational health officers. Along with health and safety education, the Industrial Health and Safety Law actively promoted the “three managements” of occupational health (working environment management, work management, and health management), and it led to a dramatic fall in occupational diseases.

In the 1980s, demands were made to further promote measures to safeguard and improve workers’ overall well-being, and the 1988 revision of the Industrial Health and Safety Law imposed an obligation on employers to exert efforts to safeguard and improve the general well-being of their workers. It also gave further encouragement to organized occupational health measures in the workplace. Calls also began for workers too to

Table 7-1 Important Trends in Occupational Health Policy

1982	Factories Act drafted and deliberated
1905	Mining Law enacted and implemented
1911	Factories Act enacted
1916	Factories Act implemented
1919	Japan becomes permanent member of the International Labor Organization (ILO)
1938	Ministry of Health and Welfare established, takes responsibility for administration of labor policies
1941	Pre-war ordinances effectively nullified by wartime regulations
1946	Factories Act and Mining Law reactivated
1947	Labor Standards Law enacted and implemented, stipulates health and safety management structure for employers
1947	Ministry of Labour established
1948	Silicosis Control Committee created
1948	Mobile silicosis screening service launched for metal mine workers
1950	First National Industrial Health Week
1972	Industrial Health and Safety Law enacted
1975	Law for Working Environment Measurement enacted
1979	System of testing of noxiousness of chemical substances (amendments to the Industrial Health and Safety Law)
1988	Measures for safeguarding and improving workers' general well-being (amendments to the Industrial Health and Safety Law)
1996	Promotion of measures to ensure workers health and safeguard professionalism of industrial physicians (amendments to the Industrial Health and Safety Law)
1999	Management of health of night shift employees (amendments to the Industrial Health and Safety Law)
2001	Re-organization of Ministry of Labour as part of the Ministry of Health, Labour and Welfare

Table 7-2 Post-war Preventive Ordinances Related to Occupational Disease

1950	Regulation for Occupational Health Protective Equipment Certification
1951	Ordinance on the Prevention of Harm caused by Tetraethyl Lead
1955	Law for Special Protection against Spinal Cord Injuries
1956	Introduction of special medical examinations for pneumoconiosis and 16 types of occupational diseases
1959	Ordinance on the Prevention of Ionizing Radiation Hazards
1960	Ordinance on the Prevention of Organic Solvent Poisoning; Ordinance on the Prevention of Harm Caused by Tetraethyl Lead, etc.
1961	Ordinance on Health and Safety of Work Under High Pressure
1967	Ordinance on the Prevention of Lead Poisoning; Law for Special Measures to Prevent Carbon Monoxide Poisoning through Coal Mine Accidents.
1968	Ordinance on the Prevention of Tetraalkyl Lead Poisoning
1970	Standards for Chain Saws; Circular on Lower Back Injuries Caused by Handling Heavy Objects
1971	Ordinance on the Prevention of Oxygen Deficiency, etc.; Ordinance on Office Health and Safety Standards; Ordinance on the Prevention of Hazards due to Specified Chemical Substances
1979	Ordinance on the Prevention of Hazards due to Dust

become aware of, and strictly follow, measures to safeguard and improve their own well-being. As a result, in addition to existing occupational health measures whose aims were focused on early detection and treatment of sick workers, general

monitoring began of the health status of all workers, along with personalized counseling and guidance on positive steps that individual workers could take to improve their health, suited to their particular health requirements.

1-2-4 Increased Prevalence of Stress-related Disease (1990s~present)

From the early 1990s, Japan saw the rise of certain undesirable trends, such as the inability of older workers to adapt to the spread of new office technologies, working environments where people felt isolated, and the collapse of the “bubble” economy. This last event led to layoffs of older workers, and it also meant that longer working hours and working on holidays became a permanent feature of workers’ lives. Certain problems arose as a result, such as an increase in the number of workers with symptoms of neurological and psychological disorders, caused by a general deterioration in the working environment.

In 1996, as part of the organization of a new system of health management, the Industrial Health and Safety Law was revised to make it compulsory for medical practitioners to inform workers of the results of their medical examinations, and to provide recommendations on measures they could take to protect their health. The aims of these amendments were to safeguard the professionalism of industrial physicians, and to ensure the implementation of proper treatment for workers based on the results of their medical examinations. The Industrial Health and Safety Law now also provided for state aid to small and medium-sized enterprises to introduce these measures.

Despite this, Japanese society still experienced the problem of “*Karoshi*” (literally, “death from overwork”), which was officially designated a workmen’s compensation in 2001. *Karoshi* is caused by exhaustion that built up from working long hours and on holidays, a consequence of Japan’s protracted economic downturn. With no subsequent abatement in the severe working conditions with which Japanese workers had to contend, physical and psychological stresses continued to grow. There were signs of a rise in the suicide rate among the working age population, and for the four year period commencing from 1998, more than 30,000 people committed suicide in Japan each year. In particular there was an increase in the number of suicides among men in their fifties,

usually the family’s main breadwinner, and this has become a serious problem for society.

2. Main Initiatives for Occupational Health

Occupational health initiatives in Japan have been implemented in the form of regulation and enforcement by the central government. The government agency with jurisdiction for carrying out the government’s labor policies is currently the Ministry of Health, Labour and Welfare. The main departments are the Labor Standards Bureau, in particular, the Industrial Health and Safety Department; the Worker’s Compensation Division, responsible for the official designation of industrial diseases; and the Wages and Working Hours Division, which is responsible for wages and working hours

The government agencies with direct jurisdiction for occupational health matters, and are therefore on the front line of occupational health regulation in Japan, are the forty-seven Prefectural Labor Bureaus (one for each of Japan’s regional governments) and the 343 Labor Standards Inspection Offices (plus four branch offices). These agencies directly monitor and exercise control over occupational health issues, such as health management and working environment improvements at businesses. This essay will examine this regulatory structure from three broad perspectives: basic policies of occupational health regulation, initiatives within workplaces, and other measures.

2-1 Administration of Fundamental Occupational Health Policy

The administration of occupational health in Japan can be broadly divided into four areas: occupational diseases, industrial accidents, medical examinations and health promotion, and workers’ compensation. The Ministry of Health, Labour and Welfare divides these further into the following eight categories: Basic Measures (involving establishing management systems and conducting

occupational health education); Occupational Disease Measures; Chemical Substance Measures; Health Measures; Comfortable Workplace Measures; Industrial Healthcare Activities Promotion Measures; Small- and Medium-Sized Enterprise Measures; and Organization of Research Systems. This section will examine in particular the three main areas of industrial accidents, occupational diseases, and medical examinations and health promotion.

2-1-1 Industrial Accidents

The number of deaths and injuries in Japan caused by industrial accidents has been declining over the long term. In order to reduce industrial accidents and to create workplaces where workers can work in safety, as was seen above, the government has launched a great variety of policies, starting with the debate over the bill for the Factories Act in 1982. Particularly in the post-war period, the Japanese Government has addressed many individual problems; starting with its enactment of the Labor Standards Law in 1947 establishing minimum standards and providing for powers to enforce compliance (see Table 7-1).

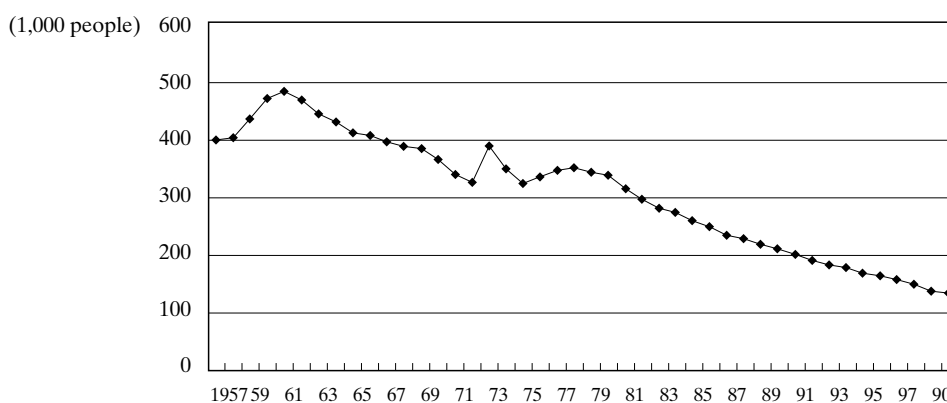
This establishment of a legislative framework providing for government regulation and

enforcement is an important approach that can also be applied in today's developing countries when setting up an appropriate fundamental infrastructure for occupational health. In particular, a proper legal framework needs to be put in place to define minimum safe working environments for enterprises such as workshops that lack modern automated equipment, a feature to be found in many developing countries.

While the number of deaths and injuries from industrial accidents in Japan (defined as four or more working days lost) has fallen markedly since the 1980s, it nevertheless still amounts to around 130,000 people a year (see Figure 7-1). In addition, the total number of people injured at work (defined as at least one working day lost) is around 550,000 people a year (these figures are taken from MLHW workers' compensation payments data for 2000).

While the 1970s saw the number of fatal accidents decline sharply, since 1996 the figure has plateaued at around 2,000 deaths a year, standing at 1,889 in 2000 (see Figure 7-2). For this reason the Ministry of Health, Labour and Welfare set objectives with a view to achieving a large improvement in this figure, and has been promoting strategies to prevent industrial accidents tailored to individual industry sectors. As a part of its aim of

Figure 7-1 Trends in Industrial Accidents (Either Fatalities or Causing at Least 4 Days Off Work)



Source: Japan Personnel Management & Safety Information Center

further raising health and safety levels in the nation's workplaces, the Ministry of Health, Labour and Welfare defined a series of processes for employers called "Planing - Implementation - Evaluation - Improvement," and in 1999 it also announced the "Guidelines for Labor Safety and Health Management System," a management tool which assists employers in initiating and maintaining their own health and safety programs. The Ministry of Health, Labour and Welfare continues to work to ensure the widespread and consistent use of these accident prevention strategies.

On the whole, Japan experienced few industrial accidents prior to its industrialization in the late nineteenth century. With the introduction of modern machine-based production methods, both the frequency and severity of industrial accidents increased. Although attempts are often made to attribute the cause of industrial accidents to workers' negligence or lack of care, there is also a need to eliminate the underlying causes for such worker errors. These include inadequate safety education; fatigue due to working long hours; boring work of a monotonous labor; late-night work; hot and humid conditions; improper lighting; high levels of noise; excessive alcohol intake; and

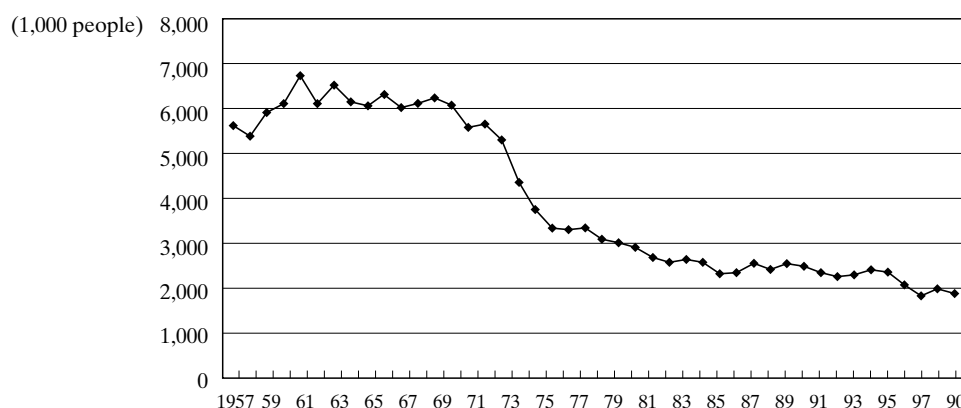
domestic problems. In any event, modifications should be made to deal with inevitable lapses of attention and oversights, such as installing safety devices that can prevent industrial accident².

2-1-2 Occupational Diseases

An "occupational disease" is a disease caused by the working environment and working conditions in a specified workplace, and can therefore be prevented by removing its cause. Occupational diseases can have three different causes: physical causes present in a worker's working environment, such as high-pressure hazards, industrial deafness, and vibration hazards; chemical causes, which can lead to pneumoconiosis, toxic gas poisoning, organic solvent poisoning, or heavy metal poisoning; and work processes, which can lead to neck, shoulder and arm conditions or lower back pain. Particularly in the post-war period, a system gradually took shape in Japan through the introduction of measures to combat occupational diseases, resulting in the adoption of many preventive strategies (including legislative measures), as well as the implementation of programs providing assistance for injured workers.

From around the start of the Showa Era in 1926, a series of measures were adopted to deal

Figure 7-2 Trends in Fatal Accidents



Source: Japan Personnel Management & Safety Information Center

² Suzuki, Shosuke and Hisamichi, Shigeru eds (2003) *Shinpuru Eisei Koshueisei-gaku 2003* [Simple Hygiene and Public Health 2003] Nanko do. p. 240.

with pneumoconiosis, a lung disease often seen in mine workers. After the war the Silicosis Control Committee was set up in 1948, representing the creation of a system that would deal with another important issue that the nation faced. Under one particular systematic policy, pursuant to the Law for Special Protection against Silicosis of 1955 medical examinations were conducted between 1955 and 1957 on around 340,000 workers around the country engaged in work involving high levels of dust, and this program subsequently became permanent with the passing of the Pneumoconiosis Law in 1960.

It is especially worth noting that initiatives taken at this time focused on creating national strategies. Since then, the Pneumoconiosis Law has been revised several times in response to medical advances and changes in Japan's industrial structure, and a policy has been adopted that aims to achieve comprehensive work management strategies against dust sources. In addition under the Pneumoconiosis Law, employers of employees engaged on a permanent basis in work involving high levels of dust are required to give those workers medical examinations for the early detection of pneumoconiosis. (There are four types of examinations: upon hiring, periodic examinations, extraordinary examinations, and when a worker leaves employment). As a result, workers with signs of pneumoconiosis are examined by a "regional pneumoconiosis specialist," and their subsequent disposition classification be decided by the local Prefectural Labor Bureau.

The Ordinance on the Prevention of Organic Solvent Poisoning of 1960 stipulated that ventilation had to be adequate and that workers wear proper respiratory protective devices such as gas protection masks and air-line respirators. Subsequently, the Ordinance on the Prevention of Hazards Due to Specified Chemical Substances of 1971 provided for protection against chemical substances linked with occupational cancers, dermatitis, nervous disorders, and other health problems.

The manufacture of benzene and other carcinogens was banned under the Industrial Health and Safety Law of 1972, and then in 1974 the ILO adopted a convention for the prevention and control of industrial injuries caused by carcinogens and carcinogenic factors. In 1975, stronger measures were adopted to deal with occupational carcinogens such as chromium. Then in 1977, in order to develop and strengthen a fully comprehensive strategy for dealing with occupational cancers, the Industrial Health and Safety Law was revised to create a new carcinogen testing system. Under this system, new chemical substances were tested for potential toxicity, existing chemical substances were tested for carcinogenicity, and epidemiological research was also conducted. The Japan Bio-assay Research Center was set up in Kanagawa Prefecture as the testing facility.

From the 1980s, with the spread of personal computers, VDT (Visual Display Terminal) Syndrome gave rise to public concern. The burden on workers' eyes through prolonged use of VDTs, and on their musculoskeletal systems through uninterrupted typing and maintaining the same posture over long periods of time, along with other forms of psychological and nervous fatigue, were collectively termed "technostress." The Ministry of Health, Labour and Welfare released "Occupational Health Guidelines for VDT Work" in 1985, and since personnel with knowledge and experience were first needed before these new health disorders could be tackled, systematic personnel training programs were set up through industrial health and safety associations, including education for occupational health officers and internal company instructors in workplaces using VDTs.

2-1-3 Medical Examinations and Health Promotion

Under Article 66 of the Industrial Health and Safety Law, employers have an obligation to provide medical examinations for all their workers. There are three types of workplace medical

examinations: “general medical examinations,” “special medical examinations,” and “medical examinations requested by night work employees.” These examinations provide feedback for management of health, work processes, and the work environment, in the form of an overall assessment of changes over time in the health status of employees. One aim of this process is to assist employees to be in the optimum health at all times, maximizing productivity. The 1996 amendments to the Industrial Health and Safety Law made it compulsory for medical practitioners to inform workers of the results of their medical examinations, and to provide recommendations on measures they can take to protect their health.

Whereas general medical examinations are for all workers, special medical examinations are provided for those workers engaging in harmful duties. The pneumoconiosis medical examinations mentioned earlier are a typical example. In addition, special medical examinations are compulsory for workers engaged in seven specified types of hazardous work, for example involving

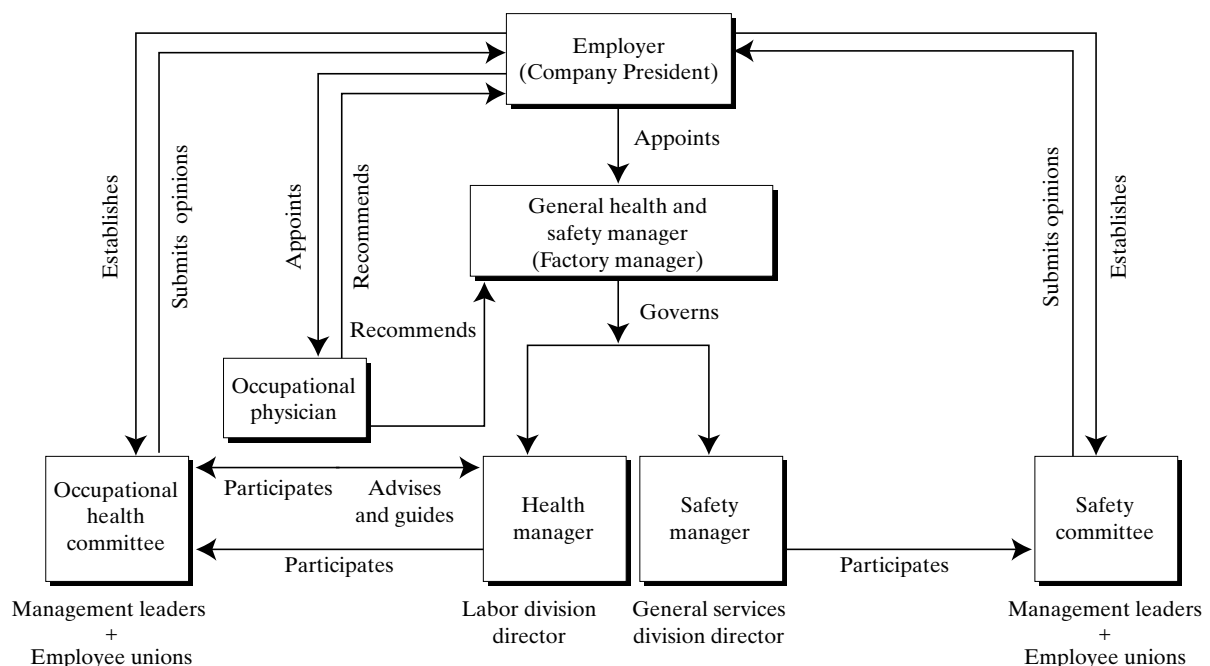
radiation, noise, operations within high pressure rooms, and certain organic solvents.

Putting in place a comprehensive system for medical examinations requested by night work employees was the aim of 1999 amendments to the Industrial Health and Safety Law. These provided that the results of medical examinations made at the request of night work employees could be given to their employer, and that the employer had to take appropriate responses in view of those results.

With the 1988 amendments to the Industrial Health and Safety Law, alongside their obligation to prevent the outbreak of occupational diseases among their employees, employers were also given an obligation to strive to prevent non-work-related injuries and illnesses as well as illnesses derived from their employees’ personal lifestyles and habits, with a view to improving their employees’ general health. On the other hand, the amendments also stipulated that employees too were to make use of the measures provided by their employer to safeguard and improve their own general well-being.

These amendments are in accord with the

Figure 7-3 System of Occupational Health Management Under the Industrial Health and Safety Law (Model)



Source: Health and Welfare Statistics Association

concept developed in recent years that attention should be given not just to workers' physical health, but also to their psychological health. From the perspective of promoting workers' psychological health, the government has led the way in pursuing reductions in working hours. As part of that process, amendments to the Labor Standards Law in 1988 saw the realization of the forty hour working week in Japan. Small and medium-sized enterprises have been particularly slow to adopt and strictly enforce this measure, however, and as of 1999 only 58.7% of all workers enjoyed a five day working week.

2-2 Employer Occupational Health Systems

Under the Industrial Health and Safety Law, employers have an obligation to establish a system of occupational health management that is appropriate for the size of their business. Figure 7-3 shows a model for an occupational health system. First, an employer with a staff of at least fifty people on a permanent basis must set up an "occupational health committee." Half the committee members, excluding the chairperson, must be employee representatives, and the committee must meet at least once each month. Committee meetings are a forum for expressing opinions to the employer

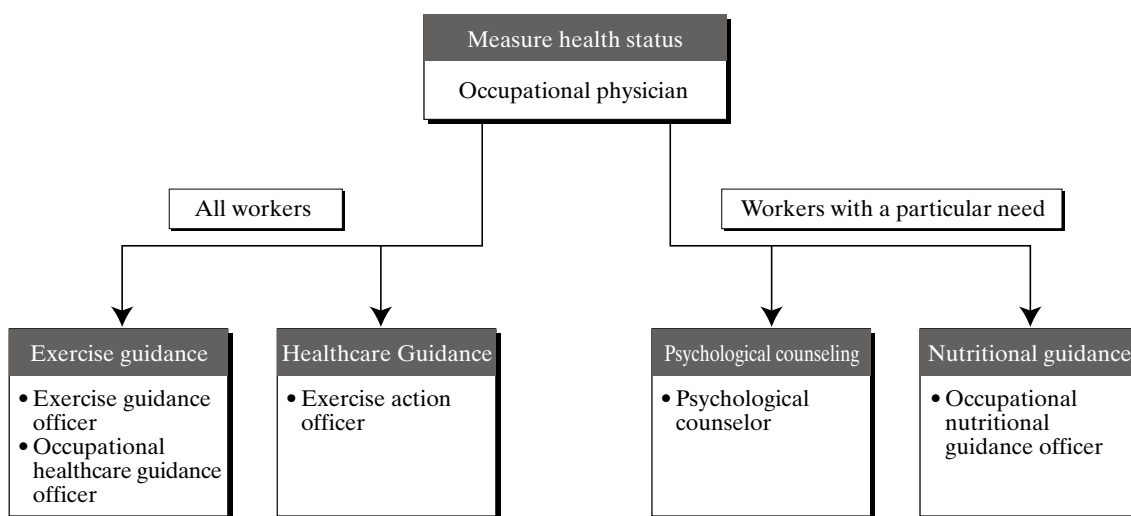
about preventing industrial accidents or harm to the health of workers.

An "occupational physician" is a medical practitioner who specializes in occupational health, principally in workplaces. Their duties include conducting regular health checks and medical examinations; providing health and hygiene education; advising about work management and working environment management; and investigating the causes of, and adopting measures to prevent the recurrence of, harm to workers' health.

The Industrial Health and Safety Law provides that a dedicated occupational physician is to be stationed at workplaces with 1,000 or more employees, and an occupational physician is to be appointed for workplaces with fifty or more permanent workers. For workplaces with fewer workers than that, several employers may join forces to appoint a shared occupational physician, and government financial aid is available to assist them.

Occupational physicians were not initially introduced as a government initiative; their use was pioneered when Magosaburo Ohara, president of the textile manufacturer Kurabo Industry LTD., instituted as system of medical examinations for his

Figure 7-4 Total Health Promotion Plan Flow Chart



Source: Health and Welfare Statistics Association

employees. Legislative provision was first made for occupational physicians in 1972 with the enactment of the Industrial Health and Safety Law, and then in 1996, in order to ensure the professionalism of occupational physicians, the Industrial Health and Safety Law was amended to stipulate certain professional requirements. These involved the certification of industrial physicians who completed Ministry of Health, Labour and Welfare-accredited training programs; standards to determine pass levels for occupational health consultant examinations; and requirements for university academics running courses in occupational health.

In addition, employers are required to appoint “health management staff,” the type depending on their size and industry type. At workplaces with fifty or more permanent workers, a health and safety officer has to be appointed to manage technical matters relating to occupational health issues. In the forestry and mining sectors, a general health and safety manager must be appointed for workplaces with more than 100 people. In hazardous workplaces, such as those involving high pressure rooms, boilers, radiation or specified chemical substances, a work manager with specified skills must be appointed.

To ensure their elimination from working environments, the presence of leading causes of harm, and the circumstances leading to their occurrence, must be properly monitored. To that end, the Law for Working Environment Measurement was enacted in 1975, introducing the qualification of “working environment measurement technician,” and specifying the qualifying criteria for this profession. The Japan Association for Working Environment Measurement was formed in 1979, contributing to an improvement in the professional standards of measurement technicians and measurement agencies. The “Guidelines for the Management of Working Environments based on Working Environment Evaluations” produced in 1984 stipulate that measurement results are to be assessed as one of three grades (“appropriate,” “room for improvement,” or “inappropriate”),

and appropriate measures are to be taken based on the assessment.

As part of recent strategies to deal with worker stress, attention has also been given to psychological health. Pursuant to the Industrial Health and Safety Law, employers are implementing total health promotion plans involving measures to safeguard and improve both the psychological and the physical well being of their workers. As shown in Figure 7-4, holistic health guidance, based on the results of health measurements, is provided by health promotion staff who have undergone specialized training. Furthermore, in order to promote psychological health strategies in the workplace, “Guidelines for Creating Psychological Health in the Workplace” were drawn up in 2000 with the aim of popularizing such strategies and making them a permanent feature in the workplace.

An occupational healthcare service support system has also been put in place for occupational physicians as well as small businesses. Occupational healthcare promotion centers have been set up in each regional government area, providing specialist advice and occupational healthcare information to occupational physicians and allied professionals. It is difficult for workplaces with fewer than 50 workers (where the appointment of an occupational physician is not required) to rely on their own efforts to seek occupational health advice from medical practitioners. For this reason, regional occupational healthcare centers have been established at most Labor Standards Inspection Offices around the country (numbering 347 as of the end of 1997), to provide small businesses with health consultation services and individual occupational healthcare guidance.

2-3 Workers’ Compensation Insurance System

Insurance on work-related accident and illness is provided under the Law on Workmen’s Accident Compensation Insurance. One objective of the Law on Workmen’s Accident Compensation Insurance is the provision of compensation to provide workers

with prompt and fair redress in the event of injury, illness, physical impairment or death suffered due to work-related causes, or in the course of commuting to or from work. A second objective is the advancement of the welfare of workers, for example by giving an impetus to the rehabilitation of injured workers.

The Law for the Collection of Insurance Premiums for Work-related Accident, Illness and Unemployment, which came into effect in 1969, consolidated the administration of workers compensation insurance and unemployment insurance into one system. Apart from “voluntary participation businesses” (meaning unincorporated agricultural, forestry or fisheries businesses that employ fewer than five workers permanently), all businesses in Japan have to take out workers’ insurance for their employees. Subsequently, because of the increased number of workers sustaining injuries while commuting in the era of Japan’s high economic growth, in 1973 commuting accidents were also brought within the protection of workers insurance³.

Under the workers’ compensation plan, compensation is currently payable for treatment, leave, residual impairment, surviving family members, long-term care givers, funeral payments, disability pensions, and secondary medical examinations. The government agencies that administer the workers insurance scheme are the Ministry of Health, Labour and Welfare at the central government level, and the Prefectural Labor Bureaus and Labor Standards Inspection Offices at the regional government level.

2-4 Strategies for Small Businesses

In Japan, small businesses (meaning those with

fewer than fifty employees) account for over 90 percent of the number of businesses, and for more than two-thirds of all workers (although the proportions will vary according to the type of industry). Compared with larger firms, the incidence of industrial accidents is rather high for small businesses, and in the area of occupational health management, initiatives such as medical examinations and working environment measurement have not been implemented by many firms⁴. For example, while the rate of implementation of health and safety education is close to 100% for large businesses, it is 39% for businesses with 10-29 employees. Medical examinations are provided by just one in five of all businesses with 1-4 employees⁵. Under the 1998 amendments to the Small and Medium-Sized Enterprises Basic Law, Small and medium-sized enterprises were ranked as a “driving force for the Japanese economy,” and extolled for their “diverse and vibrant growth and development.” There nevertheless remains a wide gap between small and large businesses in the area of occupational health.

For this reason, in 1999 the “Assistance for Small Organizations’ Safety and Health Activities” was launched, with the aim of increasing occupational health implementation by small businesses. Under the guidance of occupational health experts, plans are drawn up for health and safety activities that can be implemented by small businesses, and they are provided with support for basic occupational health measures, such as health and safety education. In addition, with the aim of endeavoring to make special medical examinations a more common feature at small and medium-sized enterprises, a “special health check mobile service for SME employees” has been running since 1961,

³ See for more detail on the Ministry of Health and Welfare (1997) *Nihon no Shakaihosho no Ayumi* [History of Japan’s Social Security System] Chuo Hoki.

⁴ Health and Welfare Statistics Association (2002) in *Kokumin Eisei no Doko, Kosei no Shihyo* [Activities in National Health, Welfare Indicators] 2002 Vol. 49 No. 9. No. 768. Health and Welfare Statistics Association. p. 302.

⁵ Japan Society for Occupational Health and Small and Medium Enterprise Occupational Health and Safety Research Society eds. (2002) *Chusho Kigyo Anzen Eisei wo Tsukuru* [Creating Occupational Health and Safety in the Small and Medium Enterprise] Rodo Eisei Chosa.

and the range of occupational diseases covered by this program has been gradually expanded since its launch.

- **Occupational Diseases in the Primary Industries Sector**

Although occupational health in Japan first evolved principally around secondary industry, after the Second World War occupational health concepts and methods also spread to the primary industry sector, as a part of rural community medical services. For example at Sawauchi-mura in Iwate Prefecture, as part of community medical services, regular medical examinations are provided for the employees of agricultural organizations such as agricultural cooperatives; a program that also covers seasonal and itinerant workers. Calisthenic exercises were also devised for farmers to prevent lower back injuries and neck and shoulder stiffness. Along with public health centers, women's associations have also been at the forefront of activities to improve the health status of Japan's rural population⁶.

In the Saku Region of Nagano Prefecture, the local general hospital has served as a base for the implementation of programs to improve the health of residents of farming communities. A mobile diagnosis and treatment unit was set up by the hospital to provide outreach medical services, and health education was promoted through performances by theater groups, as were projects to bring about improvements in the health of farming families that involved active participation by agricultural cooperatives and youth groups. A principal player in that process was Shunichi Wakatsuki, who along with his colleagues employed social medical methods to classify the diseases and injuries seen in rural regions into three groups: "farmer diseases," namely conditions suffered by individuals related to farmer's duties, such as

trauma, heat stroke, lower back pain, tenosynovitis of the hand and wrist, and agricultural chemical poisoning; "farm diseases," namely diseases derived from living a farm lifestyle, such as chronic gastrointestinal disease and vitamin deficiencies; and "farming community diseases," namely diseases derived from living in a rural environment, such as roundworms, dysentery, and goiter. By defining the causes of outbreaks of each particular disease and by pursuing countermeasures with clear improvement goals, the research group attempted to contain and prevent these diseases. Through the founding in 1952 of the Japanese Association of Rural Medicine, their experience could be shared by people around the country with an interest in rural medicine⁷.

2-5 Towards a Participatory Model for Occupational Health Programs

To date, efforts in Japan to address occupational health issues have been pursued through a framework of regulation and enforcement by central and local government. In the 1990s, in line with international trends in occupational health, calls were made to adopt a comprehensive risk management style whose central tenets were work-related safety and preventive improvements to workers' general health, and a change to a "participatory" style of activities, where management and employees work together to decide occupational health measures.

Based on the ILO Guidelines on Occupational Health and Safety Management Systems⁸, while acknowledging that "occupational health and safety management must be the responsibility and obligation of employers," the Ministry of Health, Labour and Welfare expects employers "to show strong leadership and responsibility for Occupational Health and Safety Management activities in the workplace, and to create a proper

⁶ Araki (1983)

⁷ Nishirai (1983)

⁸ International Labor Organization (2001)

system for the establishment of Occupational Health and Safety Management.” To that end the Ministry of Health, Labour and Welfare demands the participation of employees in all areas of Occupational Health and Safety Management, from planning and implementation through to assessment and improvements. In addition, through workplace health and safety committees, the Ministry aims to establish cycle management systems that will function with practical effect⁹.

3. Occupational Health in Developing Countries in the Light of Japan's Experience

3-1 From Government Directive to Worker-management Partnerships, a Century of Progress

Japan's initiatives in the field of occupational health have been pursued through a system of strong centralized regulation and enforcement by government under an overarching legislative framework. Perhaps such a system, where the state takes the initiative in setting minimum standards and enforcing compliance, is needed at the point in a country's history when employers and the broader community in general lack awareness of occupational health concepts, when employers hold great power over their workers, and when businesses have little technical knowledge or resources at their disposal to implement occupational health programs.

Prior to the enactment of the Industrial Health and Safety Law in 1972, Japan too operated under such a system, which provided minimum levels of health and safety for its workers. After 1972, however, improvements in occupational health were based on employers' greater sense of “ownership” of their occupational health issues, as

a result of their increased awareness, knowledge and experience. Then in the 1990s, in line with world trends, workers and management took their cooperation a step further, and the attitude became more widespread that efforts should now be directed to safeguarding and improving workers' overall well-being, and to developing more comfortable working environments.

The history of the expansion of Japan's occupational health system over more than a century has led the country to the developmental stage of a social economy, and to a fostering of awareness in the wider community. This history can furthermore be broadly divided into three periods, namely: the era of the leading role of government (1882~1971), when effort was focused on setting and enforcing compliance with minimum standards; the era when employers undertook principal responsibility for tackling occupational health and safety (1972~89); and finally the present era (from 1990 onwards), where workers and management work as a team on occupational health and safety issues. The most striking feature of the first era, of the leading role of government, is that it is by far the longest of the three, demonstrating that a considerable period was required to attain a certain level of national minimum standards.

Developing countries also need to address occupational health issues, although they must keep in mind that fully-fledged occupational health systems cannot be achieved overnight. What is required is a steady and comprehensive implementation of realistic measures that have practical effects, in a process that takes into account the particular stage of the country's development and the degree of readiness for participation by the principal players, namely the state, employers, and workers.

⁹ Japan Industrial Safety and Health Association ed. (2002) *Saishin Anzen Eisei Sekai no Ugoki* [Trends of the World's Industrial Safety and Health] Chuo Rodo Saigai Boshi Kyokai.

3-2 Promoting the Participatory Model of Occupational Health

We have already stated that the relative importance of the principal stakeholders in occupational health initiatives depends on the particular stage of a country's economic development. It is also important to introduce as far as possible a participatory model of occupational health activities, in keeping with current world trends. Even in Japan this approach only started in the 1990s, and it has not yet reached the stage where this approach has been systematically examined to produce definite results. Japan and aid recipient countries should therefore adopt the approach of learning from each other as they come to grips with this new occupational health model. For that purpose, in developing countries the first requirement is a full and widespread understanding on the part of both workers and employers of the value of improving occupational health levels.

To date, occupational health assistance offered by JICA to countries experiencing rapid economic growth has mainly taken the form of the classical "management" model of occupational health in large-scale workplaces, principally in secondary industries. A cooperative approach now needs to be developed that incorporates the participatory model. The Occupational Medicine Project of the Catholic University of Korea, College of Medicine and Nursing, a technical collaboration project supported by JICA that ran between 1971 and 1974, incorporated an anti-cancer strategy program with a group parasite eradication program that JICA had been conducting since 1968, as a ground-breaking combination. This method, using control measures for the most important diseases for the region, attracting the interest of workers and employers, as an entry point had much in common with Japan's successful experience of using parasite control programs as an entry point for maternal and child health and community-

based health projects. This suggests that similar methods can also be applied to occupational health strategies.

3-3 On-site Occupational Health and Safety Measures

In Japan, employers are required under the Industrial Health and Safety Law to establish an independent system of occupational health management for their business (see Figure 7-3). Specifically this entails the creation of an occupational health committee that includes workers' representatives, and the appointment of an industrial physician along with health and safety officers. Starting with measures to raise awareness of occupational health issues in the workplace and to identify key issues, the creation of a system that can provide feedback to upper management on health and safety improvements is an effective step in promoting the participatory approach to occupational health activities.

3-4 Promoting Epidemiological Research

In the very early days of occupational health regulation in Japan, the very concept of worker protection provoked considerable opposition from factory owners, making progress quite difficult. In order to overcome this formidable barrier, the government asked Dr. Osamu Ishihara to conduct a wide ranging, year-long fact-finding survey of the prevalence of tuberculosis in rural female migrant workers. The results of his survey were published in a famous report entitled "Female Mill Hands and Tuberculosis," and demonstrably provided the scientific backing required to bring about the enactment of the Factories Act¹⁰. Given the inevitability of opposition from employers to the promotion of occupational health, undertaking such epidemiological research was essential in order to obtain scientific evidence to back government efforts to win over opponents in the course of establishing a proper legal framework.

¹⁰ Kawakami (1965)

3-5 Occupational Health Awareness and Education Campaigns

The systematic organization of occupational health initiatives requires broad awareness and knowledge on the part of all members of society. In 1950, Japan launched the National Industrial Health Week with the objective of increasing awareness and educating the general population about occupational health concepts, with considerable success. Campaigns such as this will also be useful for developing countries in the early stages of initiatives in the field of occupational health issues.

3-6 Occupational Health Measures in Small and Medium-sized Enterprises

Little headway has been made in Japan in the comprehensive implementation of occupational health strategies by small and medium-sized enterprises. The basic problem is that those enterprises are not strong financially, and lack the resources to invest in occupational health. In developing countries also, almost all businesses other than state-owned and foreign-owned companies are thought to fall into this category of financially weak small and medium-sized

concerns. A key issue for these countries will be how their governments can boost and supplement the inadequate resources of such employers in order to raise their levels of occupational health.

Some specific initiatives in this area being implemented in Japan include guidance by occupational health and safety experts in formulating plans, support for health and safety education, and mobile services offering special medical examinations. In addition, through the establishment of regional occupational healthcare centers which provide health consultations and personal visit occupational healthcare guidance, as well as the opening of occupational healthcare promotion centers to provide support for occupational physicians, efforts are being made to expand the number of access points in regional communities to make it easier for local businesses to seek personal advice and guidance. Since it is difficult for small and medium-sized enterprises to rely on their own resources to set up proper occupational health and safety systems, it is incumbent on the government to expand its service delivery network by way of regional bases and mobile on-site services.