

occupational health management system, and contributing to the safety and health supervising administration including periodic supervision.

2) Establishment of the obligation to prepare a report on results of medical examinations in all sizes of business offices

An implementation rate of periodic medical examinations in small-sized business offices remains about 70%: the smaller the size the business office, the lower the implementation rate. However, both business operators and workers point out the spreading of lifestyle-related diseases at a high rate as an anxiety for the health control of workers. Under the present laws, business offices which employ 50 or more workers at all times are only obligated to report to the competent Labor Standards Inspection Office about results of periodic health examinations and medical inspections of employees engaged in specific jobs. It is necessary, therefore, that the obligation to report on the results of medical examinations should be established in all sizes of business offices, in order to collect basic data for health control and promote periodic health examinations in small-sized business offices.

Proposal 5. Introduction of a merit system into business offices in establishment of a new system

The merit system of the industrial injury insurance aims at raising the incentive of business operators to preventing labor disasters. In this insurance system the payment of a labor insurance premium is reduced when industrial accidents have decreased, and inversely the payment of a labor insurance premium is increased when industrial accidents/work-related accidents have increased. At present, the measures for safety and health to which this merit system applies are limited to those for forming a comfortable environment for working. It is clear that a reinforced occupational health management is effective for preventing industrial accidents/work-related accidents, and it is also indispensable for the business operators to reduce their economic burden in order to perform a wide range of reinforced occupational health activities under their motivated consciousness.

1) The implementation of occupational health activities should be added to the application of the special merit system of the workers' compensation insurance.

(i) In accordance with the Kihatsu No. 619 of September 9, 1997 issued by the Ministry of Labor "Implementation of Promoting Occupational Health Activity Support for Small-size Business Offices," a business office of the group that made an application for a subsidy to Japan Labor Health and Welfare Organization (a prefectural occupational health promotion center) shall make out and implement "A plan for promoting occupational health activities" that meets the requirements of (ii) and (iii) below.

(ii) The plan shall include one or more of the following health activities:

- A. Holding of a health committee
- B. Implementing of health and hygiene patrols
- C. Holding of a review meeting on disaster cases
- D. Implementing of risk prediction
- E. Holding of a safety and health meeting, or participation in it
- F. Holding of a seminar on prevention of traffic disasters, or participation in it.

(iii) The business office shall implement six or more of the following occupational health activities (the activities of A to E shall be certainly included).

- A. Implementing of medical examinations, and raising a rate of taking medical examinations
- B. Patrols in workplaces
- C. Health education and consultation based on the result of medical examination
- E. Hygiene education
- F. Overwork management
- G. Holding of a hygiene committee
- H. Measurement of work environment
- I. Improvement of work environment
- J. Improvement of hygienic aspects, and proposal of ideas
- K. Improvement of hygienic facilities
- L. New procurement of hygienic protection tools, and inspection and maintenance of

- them
- M. Management of harmful work
- N. Implementing of gymnastics at work and sports athletics
- O. Mental health management

We think that the obligation of reports on the above activities will lead to expanding substantial occupational health activities.

2) The application of the special merit system of the workers' compensation insurance shall be revised to read from "a continuous business that meets the conditions of [the number of workers $\geq 0.4 \times$ premium of work-related accidents/industrial accidents] in a business office with 20 or more to 100 or less employees" to "a business office with 20 or more to 100 or less employees."

The special merit system of the workers' compensation insurance is infrequently applied to small-scale business offices because the business office must be a continuous business meeting the above conditions. Since a reduction in the scale of business office is now seen, the above proposal is necessarily adopted to deploy more reinforced occupational health activities.

3) The period of applying the special system of the workers' compensation insurance should be prolonged from three years to five years. Also, this special system should be also applied to the construction industry.

We think that the period of application for three years under the present laws is insufficient for the business office to understand and deploy the continuing occupational health activities. It will need five years of the application period to make the business office and operator to understand the spirit of the system and establish the base for continuously implementing the occupational health activities. Furthermore, since one third of the business offices that jointly select occupational physicians belong to the construction industry, the construction business should be included in the application of the above special merit system.

Proposal 6. Ensuring of international coordination

In the Anglo-Saxon type, the point of emphasis in the occupational health activities is moving to how it should be positioned in the business management, and in the type of North Europe, France and Germany, the providing of occupational health services is the obligation of enterprises as a social responsibility. The Japanese system lies midway between those two types. Even if each country adopts its own occupational health system suitable for the country's culture and establishment, many of the main tasks are common among the systems of individual countries, including increase in working ability, health enhancement, proper placement, measures against infectious diseases, crisis management, mental health management, overwork, and young workers. In order to promote the solving of these common problems and protect the health of workers in the world, we propose as follows:

- 1). Harmonization of standards of individual countries for labor safety and health
- 2). Necessity to develop capable people who respond to independent management
- 3) Ensuring of international agreement to high-level specialist qualifications
- 4). Mutual recognition of qualifications of occupational physician, nurse, labor hygienist, ergonomist, and counselor
- 5). Ensuring of international coordination of education and training curriculums for high-level specialist qualifications
- 6). Preparation of guidelines for occupations relating to occupational health businesses

Table 1. Current Issues of Occupational Health Services

- (1) Corporate social responsibility (CSR)
Environment fund, making occupational health a priority in companies and organizations
 - (2) Occupational health issues in overseas expansion
Prevention of infection, risk management, global risk and local risk
 - (3) Mental health measures, measures to prevent excessive heavy labor
Expansion of “pay for performance” concept, increased competition, increased compensation for deaths from overwork and mental illness, diversification of forms of employment
 - (4) Harmonization of work safety and health management systems with existing occupational health activities
 - (5) International harmonization of occupational health qualifications, training and education
 - (6) Consolidation of occupational health service system
 - (7) Establishment of various systems for applying and managing information
 - (8) Provision of occupational health services to every worker
-

Table 2. Definition of the range of services provided by occupational physicians
(by utilizing the definition of occupational health management)

	Health management	Work environment management	Work management	Occupational health education	Comprehensive management
Definition	Management of "humans"	Management of "workplace"	Management of "working"	Operation of "education"	Goal of management
Management	Treatment of diseases Management of diseases	Emergency measures against harmful environment, and investigation of work environment	Suspension of working Pursuit of cause :Trouble of upper limbs	Therapy Exercise therapy Diet regimen	Observance of legally specified matters
Prevention	Health examination and subsequent measures	Improvement of work environment	Improvement of working :Rotation	Health guidance	Obligation to care for safety and health
Development	Retention and enhancement of health (Nutrition, exercise, rest)	Creation of comfortable work environment	Making working comfortable :Working gentle to humans	Health education	Risk assessment
Qualification of person in charge	Physician, nurse, and Industrial health manager	Working environment measurement expert Industrial health manager, physician	Physician Industrial health manager	Physician and nurse Industrial health manager	

Table 3. Redefinition of occupational health management by vector
(by utilizing the definition of occupational health management)

	Goal of comprehensive management	Work environment management		Health management	Work management	Education
Management	Management of dangerous machinery and harmful materials	Patrol	Understanding of measurement results of work environment Protective tools	Consultation with physician in charge of disease management Diagnosis for rehabilitation	Alleviation of muscular burdens	Education for checking diseases (second opinion)
Prevention	Measures for preventing risks and health troubles	Improvement and maintenance of work environment Risk share	Evaluation of biological monitoring	Health examination, and subsequent measures	Evaluation of muscular burdens	Guidance given to person with symptom
Development	Efforts for creating comfortable workplace	Understanding of hazard risk	Measures against tobacco smoking	Support for retention and enhancement of health	Work gentle to humans	Education required for THP activities

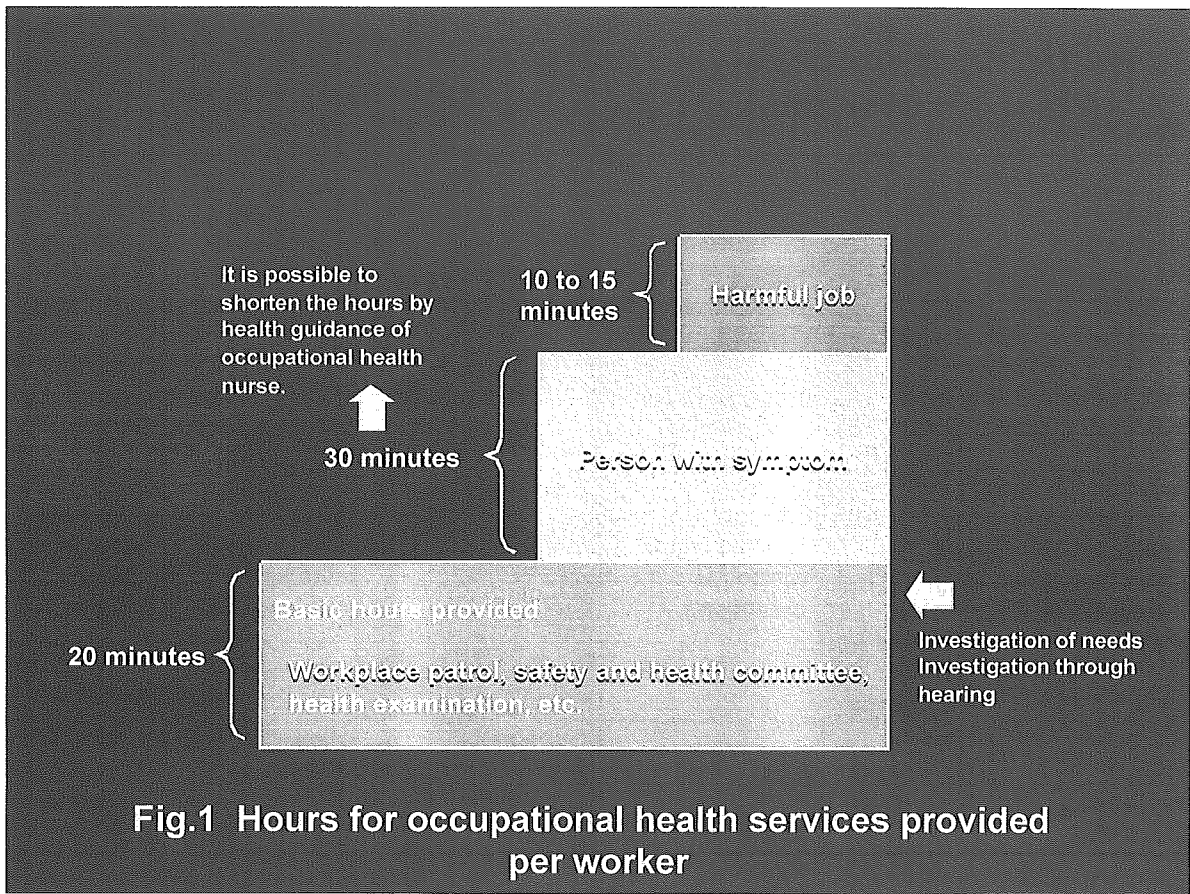
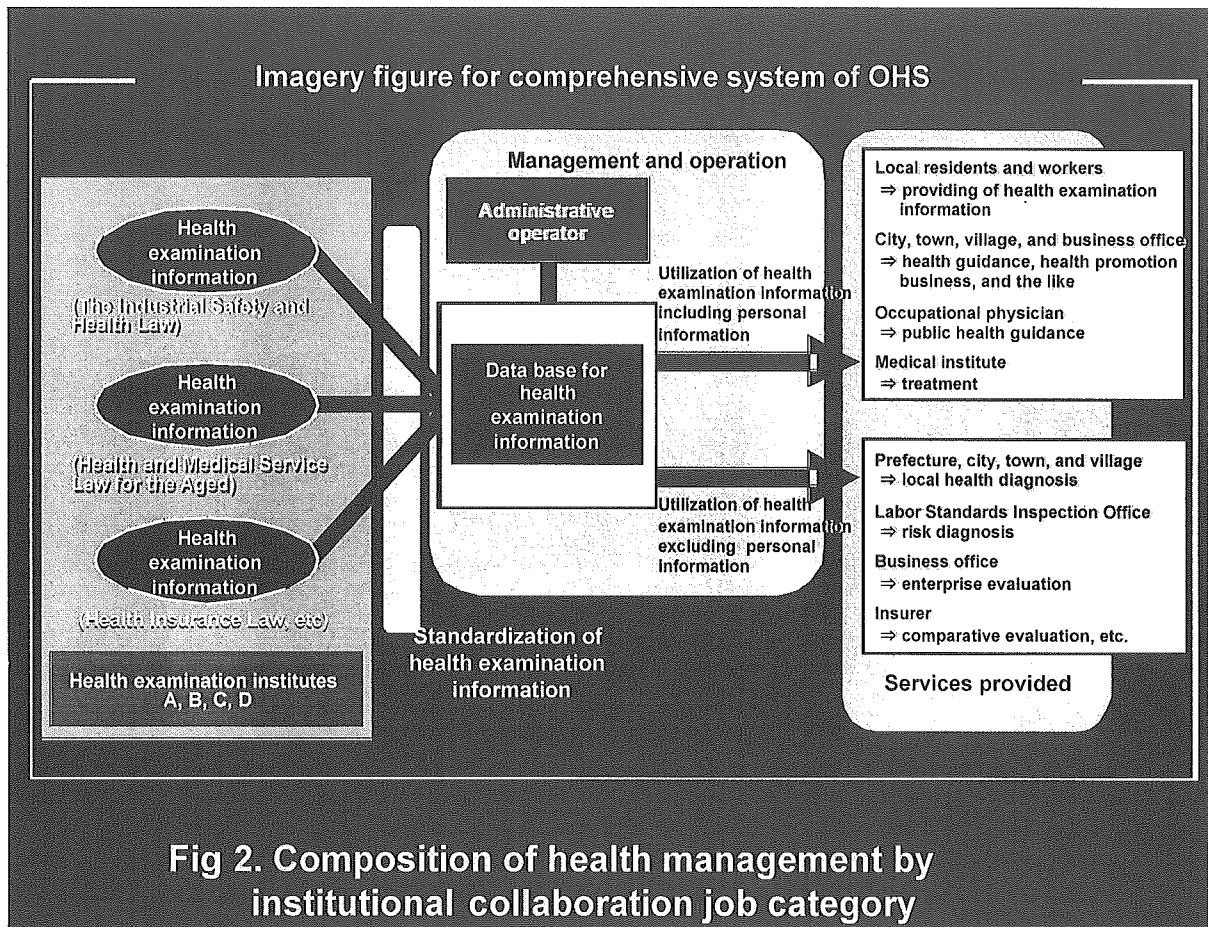


Table 4 - 1. Hours provided by staff involved for occupational health

Staff	Absent (number of persons)	Hour provided (median value)	Present (number of persons)	Hours provided (median value)	p value (Wilcoxon rank-sum test)
Industrial health manager	5	42.2	69	37.2	0.49
Occupational health nurse	64	39.7	10	23.4	0.014
Consultant (industrial health)	28	39.5	46	36.3	0.27
Consultant (engineering)	65	36.8	9	42.8	0.22
Clinical physician	15	38.7	58	37.1	0.40
Measurement expert for work environment	67	37.5	7	37.1	0.49
Counsellor	57	38.9	17	32.8	0.15
Clinical psychotherapist	71	37.1	3	47.8	0.20

**Table 4 – 2 Time (hours) spent for subsequent measures:
Harmful jobs, and hours provided for the jobs**

	Number of answers	Median value	Range	First quartile	Third quartile
Persons with no symptom	111	0	0 - 5	0	0.1
Persons with symptoms	110	0.5	0 - 40	0.3	0.75
Persons with symptoms (special health examination)	106	0.5	0 - 16	0.2	1
Diagnosis for returning to work	106	1	0 - 30	0.5	2.5
Suitable work assignment	101	1	0 - 30	0.5	2
Suitable work assignment (Case examples of mental health)	105	2	0 - 30	1	4



Future challenges of occupational health services (OHS) in a changing working world

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Abstract. From a historical and ideological viewpoint, there has been a dramatic transformation in the nature of work, working style and work-related stress. As these changes continue to evolve, it is necessary to detect tasks changing with the times, provide interventional services by taking in results from studies, including those in related scientific fields, and verify the results of the intervention. The important issues in occupational safety and health are 1) establishment of a service system for all workers and 2) continuous review of occupational health service (OHS) content depending on the social condition and 3) introduction of new evidence and evaluation. Development and introduction of the indices displaying the degree of health and the marker for predicting future condition is essential for the promotion of workers' health.

Keywords: Historical view, occupational health services, hazards, working life, health promotion

1. Introduction

Society has undergone a dramatic transformation due to technological developments and internationalization. At the same time a low birth rate and an aging population have resulted in an increase in the number of women and foreign workers in the workplace. In addition, work conditions and types of occupation are rapidly diversifying due to the widespread adoption of a discretionary work system, an increase in small-scale distributed offices, small office home office (SOHO) and telework, etc. There is concern that the effects of these changes on occupational health are also diversifying. In this paper, we introduce desirable content and channels of occupational health service (OHS) in Japan in response to these changes, drawing the result of "A Study on the Way that the OHS should be in the Future (2002-2005)".

2. Historical aspect and current condition

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From a historical and ideological viewpoint, the development of a policy for the protection of workers' health in Japan can be classified into the following categories: 1)

- 1) Prewar era (before 1945) – paternalistic approach,
- 2) Postwar era (from 1945) – concept of protecting workers,
- 3) Era of high economic growth – concept of the development of the workforce,
- 4) Present age – concept of a personal way of life and work.

In the present age, the percentage of workers experiencing strong anxiety and stress in relation to their jobs and the working environment and the number of suicides are increasing. Current issues in OHS in Japan are summarized in Table 1.

Table 1. Current issues in OHS in Japan 2)

-
- (1) Corporate social responsibility (CSR)
Environment fund, making occupational health a priority in companies and organizations
 - (2) Occupational health issues in overseas expansion
Prevention of infectious diseases, risk management, global risk and local risk
 - (3) Mental health measures, measures to prevent excessive heavy labor
Expansion of "pay for performance" concept, increased competition, increased compensation for deaths from overwork and mental illness, diversification of forms of employment
 - (4) Harmonization of work safety and health management systems with existing occupational health activities
 - (5) International harmonization of occupational health qualifications, training and education
 - (6) Consolidation of the OHS system
 - (7) Establishment of various systems for applying and managing information
 - (8) Provision of OHSs to every worker
-

3. Revised content of OHS in this era

Risk management against infectious diseases and terrorism as new threats to occupational health has been examined, and at the same time, the content of effective services have been considered along with enterprise size, disparity between trades, and diversification of employment forms, and the method for providing the services. The occupational health and safety management system is expected to be the most suitable method that, in effect, functions as a mechanism for solving these new tasks. Today, the entry of different cultures and different social environments into Japan is increasingly found, and multilingualization is on the increase. In these circumstances, it has become necessary to actually address the content of OHS and establish an information exchange and training system responding to the OHS. Furthermore, in a society of rapid aging of the population amid extremely low birth rates, the support for increasing the retention of health especially for working people becomes extremely important for maintaining the vitality of society. The recommended list of revised service content in OHS in Japan is shown in Table 2.

4. Channels of OHS

It is necessary to support the continuity of employing individuals of working age with various backgrounds and have them participate in society. In the stressful economic system of today, tailor-made OHSs adopting IT systems and a common franchise-store

network will be important channels for SSEs and individuals, and the well-trained OHS staff will play key roles in the provision of these services.

As a natural consequence, OHSs are now expected to provide an Employee Assistance Program (EAP), consulting and other functions that were formerly considered outside the realm of occupational health. What are needed are health services with greater independency that correspond more closely to the objectives of various types of business (Table 3).

Table 2. Proposal of definition of service content of OHS in Japan 2)

-
1. Medical examinations and subsequent management
 2. Workplace inspections (comprehension of the present situation of the workplace)
 3. Health Committee and Occupational Health Committee
 4. Health education and occupational health education
 5. Personal interviews (health guidance, health education, health guidance, health consultation, etc.)
 6. Mental health management
 7. Overwork management
 8. How to cope with industrial accidents and health impact investigations
 9. Health and health crisis management (crisis management)
 10. Health-related information management
-

Table 3. Providers of OHS and occupational physicians' services 2)

-
- 1) Reinforcement of outside occupational health agencies, occupational physicians (OPs), occupational health nurses, nutritionists, sports instructors etc. as providers services at a desirable quality.
 - 2) Fostering occupational health consultant firms to steadily respond to demand for services in a district.
 - 3) Development of an institute of occupational safety and health that will act as designated offices of OHS which can be easily recognizable to enterprises as the office to consult, to provide effective services, to clearly explain the range and nature of the services provided.
 - 4) Support of activities by authorized OPs in the field by providing information and training opportunities to the OHS professionals who can perform qualified risk assessment and address special problems.
 - 5) Expanding of joint selection of occupational physicians
 - a) Increase of subsidy
 - b) Extending the subsidy period to five years
 - c) Revise the system to lighten the economic burden on businesses and thereby provide OPs and OH services to as many workers as possible.
 - 6) Licensing of new entrants undertaking OH activities
-

5. Education and training of OHS professionals

There are several levels of specialization among OPs and both corporate and independent occupational health service agencies (OHA) require physicians with a high skill level. One of the primary purposes of universities for occupational health and medicine should be to train such resources and ensure that they receive appropriate recognition for their level of skill. It will be important for corporate and independent OHAs to actively recruit medical specialists as experts who have the requisite skills to win the trust of society and who can be used to appeal to the public. Agencies providing services to medium and small-scale businesses and workplaces in particular will need a framework for accumulating and exploiting skills and ability that will enhance the effectiveness of OHS. It will therefore be necessary to train human resources with a high

level of expertise and to promote de facto rather than de jure social recognition. It is anticipated that OHAs provide venues for the practical training of such human resources.

6. Ensuring of international coordination

Even if each country adopts its own occupational health system suitable for the country's culture and establishment, many of the main tasks are common among the systems of individual countries, such as maintaining working ability, health promotion, proper placement, measures against infectious diseases, crisis management, mental health management, overwork, and so on. In order to solve these common problems and protect the health of workers in the world, we propose as follows: 1) harmonization of standards of OHS; 2) mutual recognition of the qualifications of OP, nurse, occupational hygienist, ergonomist and counsellor; 3) harmonization of education and training curriculums for high-level specialist qualifications; 4) preparation of guidelines for occupations relating to occupational health businesses.

7. Technology for future

Occupational health is primarily to support social activities through the health retention of individuals, and there are many problems that should be solved in this area. Thus, occupational health is characteristic of an interdisciplinary study from medicine through to social science. We should detect tasks changing with the times, provide interventional services by taking in results from related scientific studies, and verify the results of the intervention. In the future, introduction of the indices from diseases screening to displaying the degree of health and the marker for predicting change in the future will be the tasks to be addressed.

8. Conclusion

As society changes, the trend of OHSs must move beyond prevention to promotion, and away from a one-size-fits-all system to a tailor-made system suited to the diverse background of society, workplaces, working life and lifestyles. In order to contribute to society, we must maintain a continuous effort to adapt our services to the evolving social environment.

Acknowledgement

The present study contains the results of "A Study on the Way that the OHS should be in the Future (2002-2005)" supported by Scientific Research Fund on OHS by MHLW, Japan.

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The Present Topics in Working Life and Trends of Occupational Health Services in Japan

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1. Background

Societal changes such as technological development and internationalization of businesses, aging of labor forces associated with the falling birthrate and the aging population has progressed. the following trends in work as increasing introduction of female workers into various workplaces, introduction of labor force from overseas countries, expansion of discretionary labor system, increase in small distributed business offices, and SOHO/telework, diversification of the form and mode of work. Among them, occupational diseases caused by conventional

accidents and chemical and physical factors has been certainly decreasing in the occupational health in Japan (Fig 1).

The multiplicity of health effects associated with strong anxiety and stress related to the work and life at workplaces due to new employment patterns associated with these changes has, on the other hand, been feared. The numbers of workers who committed suicide and died from cerebro and/or cardiovascular diseases associated with overwork are increasing; and the proportion of workers lying off due to stress-related diseases are growing as well..

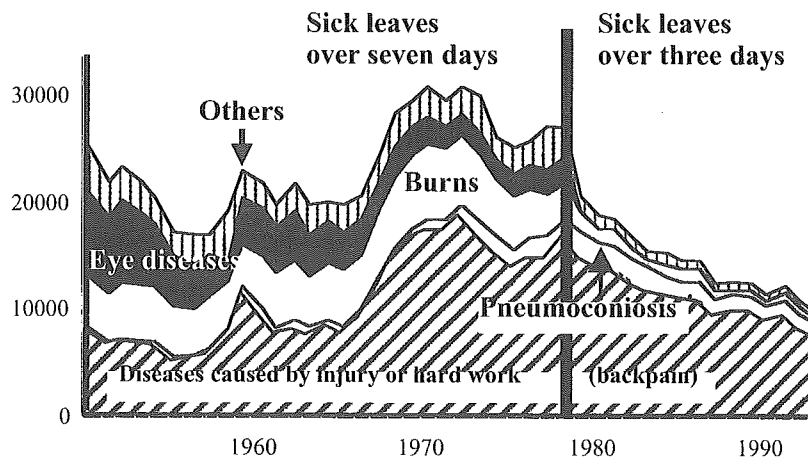


Fig1. The Transition of Major Occupational Diseases

2. Issues of occupational health in Japan

The issues of occupational health in the present Japan include an increased number of recipients of occupational health services due to mental health, overwork, health promotion, measures for old workers and maternity protection as well as crisis management and control of chemicals substances.

1) Disparity in enjoyment of occupational health services

The coverage rates (%) of services provided by occupational health physicians in various countries are as high as theoretically 100% in France (actually above 80%), 94% in Finland and 80% in Sweden, as middle as 43% in Netherlands and 31% in the United Kingdom and as low as 13% in

Denmark in which the medical services are covered by community health and 17% in the U.S.A. in which the medical services are controlled independently (Table 1). The estimate of 40% in Japan (about 50% estimated on the outside irrespective of the details of services) indicates the necessity of measures for workers in medium and small scale enterprises (Fig 2, Table 2). In addition, the employment patterns are various, including employment as permanent employees, temporary staffing, outsourcing, part-time work, discretionary work and working at work, which require large changes in the method of provision of occupational health services, such as systematic and distributed provision methods.

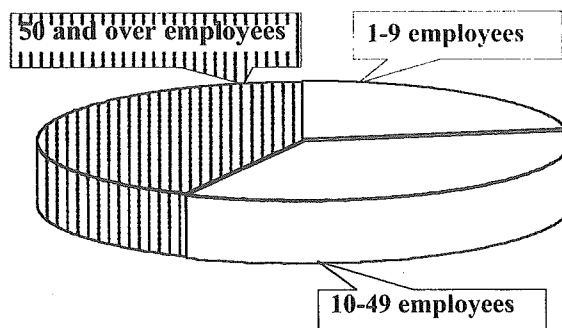


Fig 2. The ratio of workers by the scale of their workplace

Table 1. : The percentage of service Covered by industrial physicians

Holland	>90% (95%)
Finland	90%
France	80% (systematically >99%)
Sweden	68%
Japan	27% (0.8 0.34) (theoretically 70%)
UK	31% (physician or nurse)
USA	17% (based on self-report)

Table 2. The percentage of implementing measures ex post facto unit:workplace

Scale Of The Workplace	Events Happened	Implementing Ex Post Facto Measures
5000 or more employers	100.0	98.3
1000 or more	99.5	96.6
100 or more	95.2	89.1
50 or more	89.3	78.9
30 or more	84.7	72.2
10 or more	75.3	68.4
Average	79.5	71.9

Source: Ministry of Labor: 1997

2) Mental health/overwork

Increased stress has been shown not only in companies but also in the whole society. In the measures for health maintenance of the producing population, a base of society, the measures for mental health/overwork are of critical importance (Fig 3). The proportion of workers with a certain stress as a cause or incentive of medical leave reached 45.6%, and about 15% of the causes of medical leave for more than 1 month are mental disorders. In addition, suicides of workers tend to increase and reached about 14,000 in 2004. About 70% of suicides of workers have been assumed to be due to depression (Fig 4).

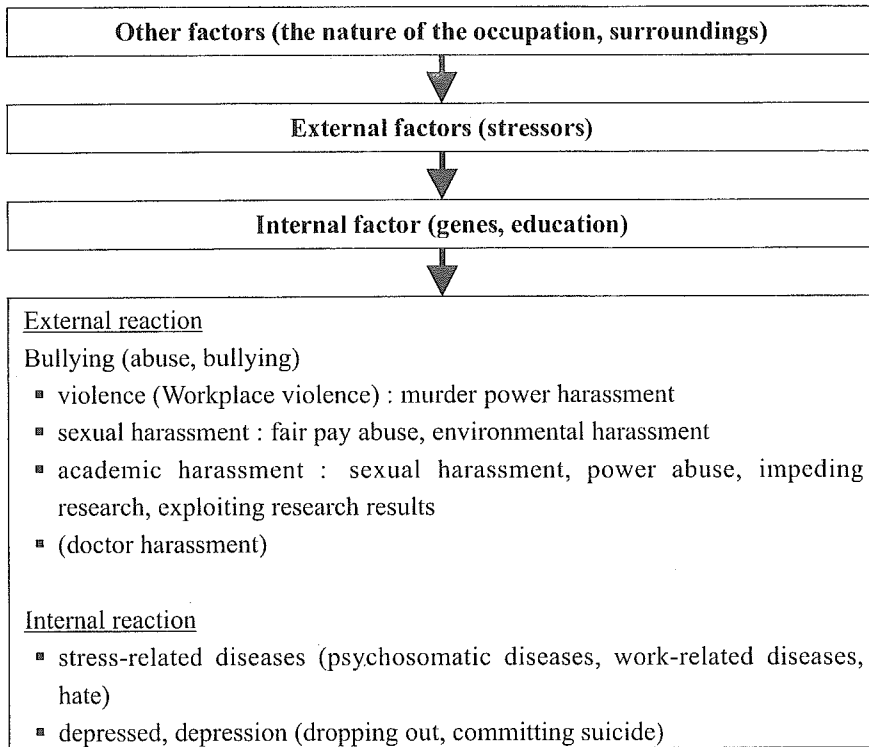


Fig.3: The image of stress-induced influence on health in the workplace (Higashi, 2003)

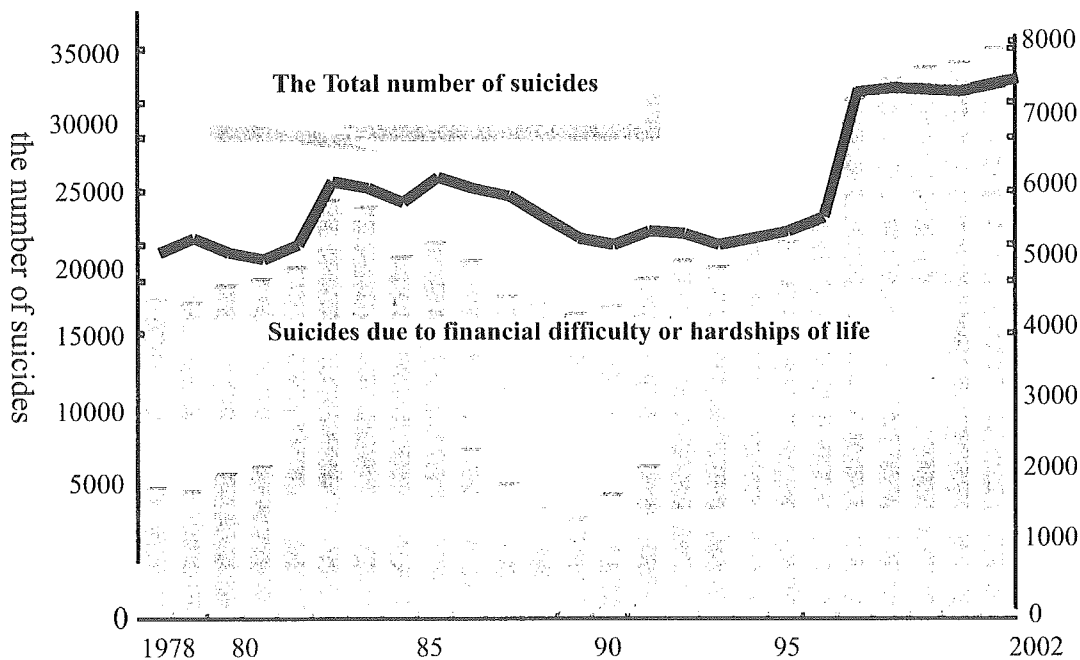


Fig.4 Trends in the Numbers of Suicide

Source: NPA

According to increase of mental health problems, OHS focused on mental health has been strongly recommended and the mental health related services by occupational physicians and nurses occupied major part of their services in all industries (Table 3).

Table 3. The Four Mental Health Care Guidelines recommended by the Ministry of Health, labor and Welfare

-
- Self-care**
measures taken by individual employees such as stress management...
 - Care on the line**
activities organized by the management: educating the management: noticing the problems
 - Care provided by the industrial health-care staff in the workplace**
industrial physician, industrial health care worker, health and safety manager, counselor, psychiatrist, etc.
safety key: relay of information
 - Care provided by (professional) health-care staff outside of the workplace**
activities provided by local health care institutions and EAP
 - Involving the family and supporting the family***
-

In addition, serious health problems due to cerebro and/or cardiovascular diseases caused by the work accompanied by physically and mentally too heavy burdens have become to be problematic, and the importance of management of labor time and the measures for reduction of burdens has drawn a considerable attention.

Table 4. Diseases Related to Overwork

•**Diseases covered by workmen's accident compensation insurance**

(issued on December 12, 2001 Kihatsu No. 1063)

Cerebrovascular diseases

- Intracerebral bleeding, subarachnoidal bleeding, cerebral infarction
- Hypertensive encephalopathy

Ischemic heart disease and others

- Heart infarction, angina pectoris, cardiac arrest including cardiac sudden death
- Dissociated aortic aneurysm

Causal Relation:

- ___(1) Unusual Events
- ___(2) Overwork for a short period of time
- ___(3) Overwork for an extended period of time

Diseases that meet certain requirements will be certified as industrial diseases

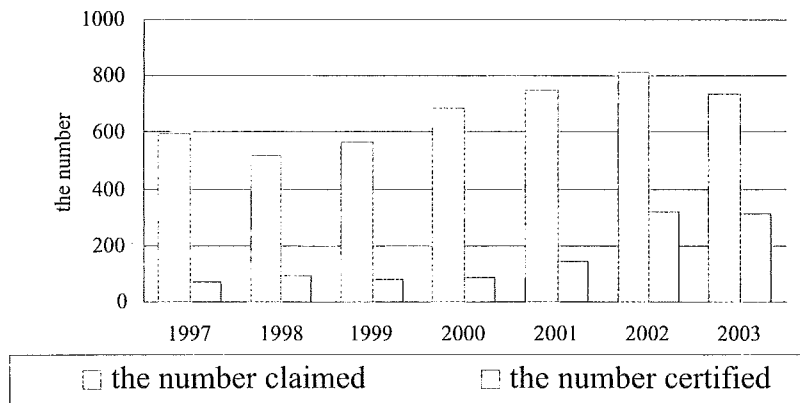


Fig.5 The number of deaths from brain or heart diseases caused by overwork

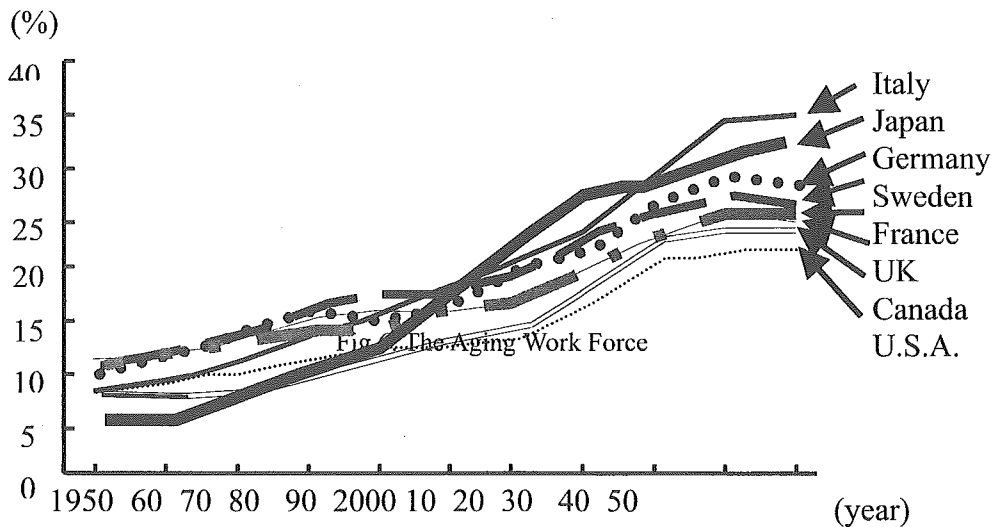
3) Health promotion

As a result of medical checkup, abnormal values such as hyperlipidemia, hypertension, diabetes mellitus and liver dysfunction will account for 50%, and the worker aged over 60 years will increase in the future. Japan enjoys the longest life expectancy in the world, but it is important to encourage the health promotion activities as more aggressive occupational health activities to secure the manpower that is expected to run short in the future, to prolong the healthy life expectancy with few dysfunctions and to reduce the burden of medical cost. The method of evaluation of individual adaptability to work and individual

difference and support of customized positive health have been shown as a national strategy.

4) Measures for aged workers and maternity protection

Measures for aged workers and maternity protection are still important, but development of concrete guidelines and manual is insufficient. The measures not leading to individual distinction are important, and it is necessary for companies to clarify further the significance of job development. This may be the most important issue to maintain the socioeconomic infrastructure in Japan reaching low birthrate and longevity.



In the present aging society at a speed unlike any other in the world, it is a very important and highly urgent issue for Japan to realize the society in which all the people including the elderly work and live with pleasure. Employment of the workers aged over 60 years has already become an actual issue due to an increase in the age starting the payment of pension. Considering the labor force population (workers + totally-unemployed persons), workers aged over 60 years will increase from 9.24 millions (14% of the total) in 1998 to 18% in 2010. When the elderly works, issues different from those in the youth can occur, including an increase in diseases associated with aging and occurrence of industrial accident due to a decrease in adaptability to work.

In Japan reaching low birthrate and longevity, it is important to combine women's work with safety/health to create a vigorous gender-equal society. The proportion of working force of female workers for each age-group still draws a M-shaped curve because of the working pattern in which women retire once at the child-bearing age and enter again the labor market after child care settles, but in recent years, women's higher academic qualifications have progressed, and women wishing to work continuously are increasing. Considering the viewpoint of health, there are some stages in the women's life stage different from those of males, such as menstruation, pregnancy, delivery and climacteric age, and there are some physical characteristics different from those of males, such as averagely weak muscle strength, and women are likely to induce health disturbance such as osteoporosis and anemia. It is therefore necessary to arrange the measures for securement of health according to the characteristics of women and to improve the labor conditions and environment for women.

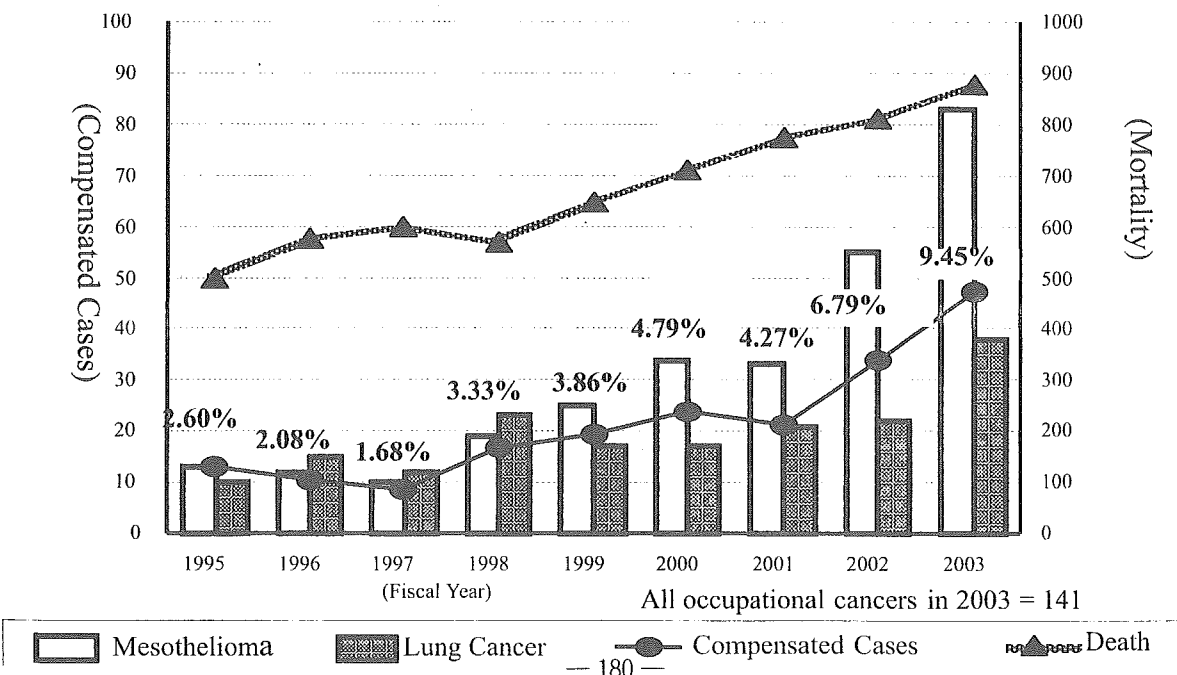
5) Crisis management

It is considered that, if company employees are exposed to risk of terrorism, the measures for terrorism with chemical substances and biological weapons are also a part of important occupational health services as crisis management. They are technically common to the measures for disasters such as natural catastrophe and accident and infectious diseases. The occupational health services include the job training of triage, emergency care and field management as healthcare professionals and education required for participants and staff. To implement these measures, involvement of specialists is expected in aspects of knowledge and skill. In the future, it may become necessary to prepare the guidelines for the contents in which occupational health physician and occupational health unit should be involved as the crisis management by companies including equipment, manual, communication system, human resource development that should be prepared by the occupational health unit in the company or community as the measures for biochemical threat.

6) Control of chemical substances

For prevention of health effects of chemical substances newly introduced, it is important to develop and standardize the methods for preliminary evaluation and provision management of information. Internationally, global cooperation based on the GHS (Global Harmonization System) is important from the aspect of maintenance of global environment.

As concerns the chemical substances, including waste products, used or handled by companies in such the activities, safety control for workers or environment is required from the aspect of CSR. In Japan, the issue of the damage with asbestos that has been used in a large amount in the past, is a future issue. Asbestos issues in terms of compensation for asbestos related diseases and waste material processing is still forthcoming problem in Japan (Fig 7).



In order to correspond to the actual condition, we performed “a study on the concept of the future occupational health,” (2002-2005) by Scientific research fund of the Ministry the Health, Welfare and Labor. The results are summarized the issues as follows:

- (1) Basic item: Health and safety measures shall be applied to all workers.
- (2) Changes in the workplace environment: Equality of opportunity, preventive activities and improvement of the condition that can be prevented, and training of the healthcare staff and organization for promotion of preventive activities.
- (3) Changes in the workplace environment: The knowledge, recognition and the ability of correspondence about the matters related to occupational health shall be deepened for management and workers to increase the availability of the occupational health and safety service organization.
- (4) Evaluation of the workplace environment: Reliable provision of the services concerning the workers not included in the conventional services, including workers under various labor conditions such as contract employees and dispatched employees, medium and small companies, independent enterprise and the workers in the informal department.
- (5) Internationalization: Promotion of development and standardization (harmonization) of the education curriculum of occupational health professionals, universalization of mutual recognition of occupational health professionals for the workers other than occupational health professionals, and participation of various workers in the occupational health activities and upskilling of them.
- (6) Preparation of the appropriate guidelines for occupational health and safety practice
- (7) Preparation of the information and guidance related to occupational health for evaluation of activities
- (8) Ethical issues: It is considered necessary to

prepare the updated version of the ethical principle and practical guidelines for occupational health and safety services including information management (protection of privacy).

Proposal to the Japanese system: from the research group. As concerns the development human resources, system and social infrastructure in the present condition in Japan, a certain progress is observed mainly in the occupational health physician system, but in the present time, it becomes necessary to develop the system again based on the present system. It is necessary to realign the occupational health service system to the one suitable for the management system including health promotion and risk management, to reevaluate the contents according to the difference in the condition that can be enjoyed by workers in a scale of company and diversification in employment patterns and to take measures concretely for reinforcement of service providers (external labor health organization, etc.) from the quantitative and functional viewpoints. In addition, as a base of the demand for services, we proposed the reasonable service time per worker of about 20 minutes on the average, the necessity of training course and carrier formation system of high-level specialists, the lack of evaluation of the effects of services and the necessity of preparation of guidelines for various services.

4. Studies on occupational health and industrial medicine

It is required to actualize the society where all workers can keep and promote the physically, mentally and socially good conditions, can maximize their working ability in safe and healthy workplace environments and can work with a purpose and feeling of satisfaction. In order to do it, workplaces or government are required to deal with them further, and the underlying labor health studies must be implemented effectively by accurately grasping the issue of labor health