The Present and the Future of Occupational Health in Korea

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Abstract: The Present and the Future of Occupational Health in Korea: Jungsun PARK, et al. Industrial Health Research Institute, Korea Industrial Safety Corporation, S. Korea—Generally the industrial development of Korea has accompanied increasing tendency of industrial injury and occupational disease. As the economy began to develop in the 1970s and the development of the heavy metal and petrochemical industries accompanied this economic growth, industrial injuries and occupational diseases have emerged as serious social problems. In the 1980s, the rapid introduction of new industries and technological innovations have further aggravated the work environments. The Industrial Safety and Health Law mandates employers to provide periodic medical examination, work environment measurement, and health management with the employment of a health supervisor to regulate industrial accidents and occupational diseases. These programs are important tools of protecting workers' health and, having been developed along with Korea's industrial health care system, has a historical meaning of its own. However, these programs can also be negatively criticized because of ritualistic and unproductive execution. Recently, the Government introduced new approaches to supplement the shortage of the mandatory occupational health services by law. The new approaches are reforming of occupational medical examination program, conducting the government funded subsidiary occupational health program for small-sized enterprises, and the expansion of the workers' right to know and right to participate etc. While there have been a shift from uniformity and compulsory execution to autonomy, locality, and expansion of the workers' right to participate, the issue of necessary conditions for these new approaches to become effective in a developing nation such as Korea will grow in importance.

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1. Occupational Health Services

Legislations1 2)

The Labor Standards Law was established in 1953. To regulate industrial accidents and occupational diseases, the first legal acts were stated in Chapter VI (from Article 64 to Article 73) of the Labor Standards Law. The Law was established and enforced to guarantee basic working conditions in compliance with the Constitution Decree. The Articles of the Law required employers to provide measures for workers' safety and health.

The Industrial Accident Compensation Insurance Law was enacted in 1963 to provide necessary insurance benefits to injured workers and also to give them prompt and fair protection against injury, disease, disability and death. The insurance would grant short or long-term benefits, to promote the rehabilitation of workers who suffer injury or disease resulting from the employment and to assist the injured workers and their families, and thereby to promote the welfare of the workers. The insurance program is administered by the Ministry of Labor and all enterprises which fit the governmental criteria with some exceptions are required to join this program. An exception is firms which employ less than five workers.

Because of the rapidly growing Korean economy, it turned out that the Articles of the Labor Standards Law were not enough to regulate the swift increase in industrial accidents. Specific as well as practical laws to regulate industrial accidents and occupational diseases, aside from already existing the Labor Standards Law, were demanded. As a result, the Industrial Safety and Health Law and the Pneumoconiosis Law were established in 1981 and 1984 respectively. These laws have served to secure the safety and health of workers and to improve the working conditions and environment. These two laws stated the following clearly and specifically: obligations of safety and health organizations in firms, practical measures for the prevention of hazardous working conditions, establishment of safety and health standards, supervision and instruction by governmental and/or public organizations.
Since the mid 1980s, there have been many changes in labor-management relations in Korea. In response to these changes, the Korean government has reviewed and revised labor laws, and the general provisions of the Industrial Safety and Health Act was amended in 1990.

In addition to the laws mentioned above, the Fire Service Act, the Traffic Safety Act, the Atomic Control Act, the Mining Security Act, etc., are related to industrial safety and health.

**Labor Administration**

The Ministry of Labor, which is in charge of labor administration, started its operation in 1948 with a poorly outfitted organization, namely, the Labor Bureau under the Ministry of Social Affairs.

In accordance with the rise of public demands on labor administration and the industrialization of Korean society, the organization has expanded rapidly to meet these needs.

In 1963, the Ministry of Health and Social Affairs, Labor Bureau was promoted to the Labor Agency and began to function as a center for labor administration. On December 7th of 1966, the Industrial Safety Division was established within the Labor Agency and took over control of industrial safety and health affairs which was formerly within the Labor Standards Division.

In 1972, the Workers’ Medical Examination procedure was divided into two sections; the periodic medical examination for general official workers (called as the General Medical Examination in Korea) conducted in spring and the occupational medical examination for workers exposed to potential work hazards (called as the Special Medical Examination in Korea) conducted in the fall. Individual medical examination forms began to be utilized for the Occupational Medical Examination. In 1973, the Ministry of Labor established the Working Environment Measurement Room. On April 28th of 1977, the National Institute of Labor Science was established as an international cooperative project between the ILO, the UNDP and the Labor Agency to promote industrial safety, health research and the training of the staff.

The Labor Agency was promoted to the Ministry of Labor in April of 1981 to address the issues of industrial safety and health.

Regional Labor Offices were reorganized and renamed Regional Labor Agencies and established in six major cities, Seoul, Pusan, Kwangju, Taegu, Inchon and Daejon. Thirty nine regional labor offices were set up under the six agencies, and a step towards the systematization of the regional labor administration was taken. An Industrial Safety Division was installed within each regional labor agency and labor office, to oversee industrial safety and health affairs.

On December 9th 1987, the Korea Industrial Safety Corporation (KISCO) was created with the long term goal of improving health and safety conditions for workers and promoting employers’ accident prevention measures by providing the means of researching, developing, and disseminating prevention methods of industrial accident. A part of the National Institute of Labor Sciences duties were delegated to the KISCO.

Because democratization took place, the government had to respond to occupational diseases such as mercury poisoning and carbon disulfide poisoning which began to come to light. The government refurbished its administration by establishing the Industrial Safety Bureau to take charge of industrial safety and health affairs in February, 1989.

**Manpower**

a. **Occupational Physician**

Employers hiring more than 50 workers are required by the Industrial Safety and Health Law to appoint health supervisors. If the number exceeds two thousands, a full-time occupational physician must be appointed to oversee employees’ health and safety. However, with the recent amendment of the Special Laws regarding the Alleviation of Regulations Limiting Industries’ Activities, the employer, despite the already established laws, are inclined not to appoint occupational physicians. The Korean Society of Occupational and Environmental Medicine was founded in 1988. The Society established a specialists certification program in 1996, requiring a candidate to complete four years’ residency program. Currently there are 293 certified specialists.

b. **Industrial Hygienist**

When an employer wish to carry out working environment measurement in accordance with the provisions of the Industrial Safety and Health Law, he or she must have such measurement performed by an industrial hygienist, whose other minor role is to control work environment. In 1990, the Korean Industrial Hygiene Association was founded. Although approximately 750 members are registered at the Association, there are not enough active well-qualified industrial hygienists.

c. **Nurses working in occupational health settings**

More than 1,400 registered nurses are hired by industry in late 1997. As a result of the Special Laws regarding the Alleviation of Regulations Limiting Industries’ Activities, although exact figures are not available, the number of registered nurses working as industrial health supervisors in occupational settings is on a steady decline. The Korean Association of Occupational Health Nurses was founded in 1987.

**Occupational Health Programs and Service Organizations**

The Industrial Safety and Health Law mandates employers to conduct periodic medical examination, work
environment measurement, and health management. At present, three different programs are provided by private service institutions. Most service providers are operating outside of the workplace on a profit basis because of financial reasons, and very few workplaces have their own services. Usually the same service institution provides medical examinations and workplace measurements together. These programs are made possible because the law has specified the provision of medical examinations and work environment measurements together with the employment of a health supervisor.

a. Periodic Medical Examination
A periodic medical examination consists of a medical examination for general official workers and a occupational medical examination for workers exposed to potential work hazards. A medical examination for general official workers is mandatory at least once every two years. Those workers handling prescribed hazardous chemicals or working under prescribed hazardous conditions must have a occupational medical examination at least once a year to detect early health effects caused by exposure to such occupational hazards. The occupational medical examination program has been carried out since 1972. Currently there are 120 types of hazardous work which the special medical examination is applicable to. These services must be administered within paid working hours at the employer’s expense. There are about 94 Workers’ Medical Examination service institutions providing occupational medical examinations.

b. Work Environment Measurement
As in 1981 the Industrial Safety and Health Law was established, the work environment measurement was stipulated as mandatory, and in 1983 it was established as a regulation of the Labor Ministry. The work environment measurement was to be carried out twice a year for 116 out of 698 occupational hazards with a threshold limit value. There are 78 outside work environment measurement service institutions providing work environment measurement services. Also thirteen workplaces have their own work environment measurement services in 1998.

c. Occupational Health Management Services
Instead of assigning full-time health supervisors, employers in the workplace where the number of employees is 300 or less may entrust health management service institutions to carry out the health management services designated by the Minister of Labor. This program has been legally carried out since 1988. There are about 66 outside service institutions in Korea providing occupational health services to more than 7,000 workplaces totaling to more than 600,000 workers.

2. Health Problems of Workers

Generally the industrial development of Korea has accompanied increasing tendency of industrial injury and occupational disease. Because the industrial development of Korea was at its developing stage in the 1960s, the incidence rate of industrial accidents was low. However, as the economy began to develop in the 1970s and the development of the heavy metal and petrochemical industries accompanied this economic growth, industrial injuries and occupational diseases have emerged as serious social problems. In the 1980s, the rapid introduction of new industries and technological innovations have further aggravated the work environments. The worsening of work conditions and work environments are reflected in the gradual increase of accidents and diseases, not only in the number but also in the severity, and in occurrence of work-related diseases such as work-related musculoskeletal disease or occupational cancer.

Occupational Diseases
The incidence rate of compensated occupational disease cases, was approximately 2 per 10,000 insured workers.

Usually pneumoconiosis and noise-induced hearing loss accounted more than 90% of total compensated cases up to 1994. In 1995, there was a significant increase in the number of other disease category, such as the musculoskeletal diseases among video-display terminal workers and cerebrovascular diseases from stress. The number has fluctuated depending on diagnostic criteria and policy of the industrial accident insurance.

Based on the medical examination program for workers, prevalence of some occupational diseases can be inferred. Hearing loss and pneumoconiosis are two diseases which have accounted for more than 95% of total positive findings, and the rate of positive findings in each category has been found in about 1% of those examined. Recently the prevalence of pneumoconiosis is on the decline because of the shrinkage in mining industry, and prevalence of noise-induced hearing loss is also falling down possibly because of the change in diagnostic and inclusion criteria.

Industrial Accidents
All the statistics of industrial accidents have been based on the survey of workers, whose employers have participated in the Industrial Accident Compensation Insurance program established in 1963. As the contents of the insurance law have consequently changed, the coverage of workers and the definition of accidents have changed. Initially, only the firms of the mining and manufacturing industry, and only the firms which employed 500 and more workers were selected. The initial definition of an accident was an injury that needed 11 and more days of treatment. As the economy developed, the coverage of industry and firms has
The occupational medical examination program has gradually widened. Now the coverage includes construction, electricity, gas and water, transportation, storage and communication, as well as other industries. The coverage also extended to cover workplaces of five or more employees. The most striking change can be found in the definition of an accident. In 1973, the definition of an accident was changed to an injury which needs eight or more days of treatment. Since 1981 it has extended to cover four or more days of treatment, whereas injuries with less than 4 day treatment are covered by the general health insurance system.

The number of injured workers has drastically increased since 1972. Statistics show that the total number of injuries in that year was 46,603 out of 1,077,632 workers. In 1984, mostly because of the change in the definition of accidents in 1981, the number of injured workers had shot up to 157,800. Since then, there has been a gradual decrease in the number of accidents. In 1996, the total number of injuries dropped to 71,548 out of 8,156,894 surveyed workers. The trend of accident rates shows that a steady improvement has been achieved. The rates were at a high level through the 1970s. In the year 1980, the rates of injuries were recorded at a very low level because of extended coverage in the definition of accidents, and accident rate increased until 1983. Since 1984, the statistics reflect that there has been a significant improvement in work conditions and environments.

The rate of deaths per 10,000 workers successively decreased through the 1970s until 1980. In 1973 when the rate recorded its peak level, 6.37 workers died per 10,000 workers. In 1980, the rate dropped almost by half to 3.39. In the 1980s, the rate stayed between 3.5 and 3.8. Since 1990, the rate has remained around 3.0. Hence, we can conclude that the rate has shown a gradual decrease. However the fact that the decrease in the death rate is not rapid enough to lower the actual number of deaths by accidents still remains a problem.

3. New Approaches towards the Future

The Reformation of Occupational Medical Examination Program

The occupational medical examination program has been carried out at least once a year for workers engaging in potentially harmful work since 1972. The occupational medical examination program is an important method of protecting and promoting workers’ health and, having been developed along with Korea’s industrial health care system, has a historical meaning of its own. However it can also be negatively criticized as follows: “Occupational medical examinations are merely ritualistic and unproductive.”

Consequently, the government requested the Industrial Health Research Institute of KISCO to reform the Occupational Medical Examination Program in February, 1997.

This reforming operation of the Occupational Medical Examination Program was carried out through a literature review, focused debate by the Occupational Medical Examination Program Reform Committee, and a collection of diverse opinions until late 1997.

The specifics of the occupational medical examination program reform proposal scheme consist of three parts: the types of the medical examinations, health evaluation based on occupational medicine, and the interval, subject selection, items and procedure of the periodic medical examination. Pre-placement medical examinations are enforced to obtain baseline health status data and to place laborers with suitable work, and nonperiodic medical examinations-as-necessary are newly introduced to detect work-related musculoskeletal diseases, occupational asthma etc. Health evaluations based on occupational medicine consists of classification of health status, evaluation of work suitability, and post-examination measure which is especially emphasized. The reform proposal broke away from the uniformity of the legally regulated medical examination interval, subject selection, items, and procedures, and focused on the autonomy of labor-management and the expertise of the health professionals to promote the execution of effective medical examinations. The reform proposal recommends that each workplace should have a plan for their own health services suited for their purposes thus, it places high value on individual workplaces’ own conditions.

Ultimately, the current mandatory medical screening must be left to the individual enterprise, whereas the government must operate the nation-wide surveillance system and also supplement this with a well-organized systemic health survey. The purpose of the surveillance is continued close observation of the distribution and trends of incidence through the systemic collection, consolidation; and evaluation of morbidity and mortality reports and other relevant data.

While there have been a shift from uniformity to specialization and autonomy, the issue of necessary conditions for these reform efforts to become effective in a developing nation such as Korea will grow in importance.

Conducting the Government Funded Subsidiary Occupational Health Program for Small-sized enterprises

The proportion of the workers involved in small-sized enterprises is usually greater than that of large workplaces and in Korea about sixty two percent (1995) of the total workforce is engaged in enterprises of fewer than 50 workers. It is generally accepted that the smaller the enterprise the more frequent are the occupational accidents and diseases. The general health status is poorer because of aging of workers and low socioeconomic conditions. The Korean government, in an effort to solve

The Government Funded Subsidiary Occupational Health Program for Small-sized Enterprises (hereinafter referred to as “The Subsidiary Health Program”) began in 1993 as a program to provide temporary expert support to small-sized enterprises suffering from poor work environment and financial hardships.

The health management service institutions provide work environment measurement, occupational medical examination and health management services to those small-sized enterprises employing less than 50 workers who are therefore not required to appoint their own health supervisor. When it began in 1993, the Subsidiary Health Program was under the management of the Ministry of Labor. That same year, work environment measurement and occupational medical examinations were provided annually and health management services were provided twice to 1,784 workplaces employing less than 30 workers. The total funding amounted to 507,000,000 wons. When the management of the program was transferred to KISCO in 1995, the number of enterprises (employing less than 50 workers) that benefitted from this program increase to 4,853 and amount of financial support was five times the 1993 figures. In 1997 placing a greater importance on health management, the services were given 12 times but work environment measurement services and occupational medical examinations were given once each. Health monitors were placed at workplaces to provide effective training and education to promote autonomous health management programs within the workplaces. The program currently provides support to workplaces which voluntarily requested services, 10% out of the total number of eligible workplaces.

Occupational health problems in small-sized enterprises remain as difficult obstacles to overcome even in industrially advanced nations. Whether the support-oriented approach implemented by the Government will prove to be an important step in finding a solution to this vast problem remains to be seen.

The Expansion of the Worker’s Right to Know and Right to Participate

a. The Material Safety Data Sheet (MSDS) Program

The MSDS program was introduced to support the worker’s right to know about harmful chemical substances, to protect the workers from the dangers of working in a potentially hazardous environment and to insure expedient response in the case of an accident. This program mandates that those who plan to manufacture, import, use or transport chemical substances or products containing chemical substances must display an MSDS in workplaces. An MSDS consists of 16 headings (in accordance with international standards) encompassing pertinent information regarding a chemical substance, correct names, chemical contents and amount, toxic profiles, emergency countermeasures, etc.

The MSDS program was introduced around 1990 in industrially advanced countries and in March 1996 in Korea. In an effort to expedite the establishment of this program, KISCO translated MSDS, an English version supplied by MDL INFORMATION SYSTEMS INC., to Korean version regarding 33,000 types of chemical substances and posted this information on its public online site, KISCONet making the information available to everyone free of charge.

It has been widely recognized that in Korea the MSDS program was established in such a short period of time through forced legislative regulations rather than administrative guidance. Whether there have been any actual improvements in overall workers’ safety and health conditions through the expansion of the workers’ right to know and whether the forced government-led program are more efficient than self-participation of labor-management are issues that require a close analysis.

b. Strengthening the Function and Role of the Industrial Health and Safety Committee

An industrial health and safety committee should be organized in every establishment where the number of workers exceeds 50. The chairperson should be selected from among the top executives who possess sufficient power and responsibility to protect workers’ health and safety. An occupational physician or a health supervisor must be a committee member under this law. Half the committee members including the above mentioned specialists must have been recommended by the trade union. The industrial health and safety committee originally had only a deliberation function but was also given a decision making function with the recent amending of the law. It has also become mandatory for workplaces with over 1,000 workers to establish this committee separate from the labor management council or the trade union.

c. The Revitalization of the Honorary Labor Inspector Program

The ‘honorary labor inspector’ program was begun in 1995. It has been revitalized so that trade union is able to recommend a candidate of the honorary labor inspector, not official labor inspector, out of trade union members, workers, labor-management groups, and industrial accident prevention groups. The honorary labor inspector can participate in the establishment of industrial accident prevention planning, and can request specific improvements in the event of legal infringements or report it to the inspecting agency. He or she can also participate in the supervision of the workplace and request the suspension of all operations in the event of an imminent danger. And with regards to the worker, it is legal right
for the inspector to provide safety guidelines to the workers.

d. Others

The scope of the worker representative’s request for information has been expanded to a provision for the work environment measurement result as well as the industrial health and safety committee’s regulation and the safety and health management regulation of their own workplaces. The scope of the worker’s representative’s participation in occupational safety and health issues has been expanded to include medical examinations, safety and health consultations, and machinery and equipment inspection in addition to work environment measurement.

The legal expansion of the worker’s right to know and the worker’s right to participate is a clear trend in the continuing development of Korea’s occupational health program. However, whether the expansion of these rights can lead to increased labor-management participation to solve worker health and safety is an assignment that still needs to be completed.

References

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