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The Administrative Process for Recognition and Compensation for Occupational Diseases in Korea

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In the Workers' Compensation Insurance (WCI) system in Korea, occupational diseases (ODs) are approved through deliberation meetings of the Committee on Occupational Disease Judgment (CODJ) after disease investigations when workers or medical institutions requested the Korea Workers' Compensation and Welfare Service (COMWEL) for medical care benefits. Insufficient data presented by employers or workers or lack of objective evidence may increase the possibility of disapproval. The expertise of accident investigation staff members should be reinforced and employers' and related institutions' obligations to cooperate and submit data should be specified under the law. The deliberation meetings of the CODJ are held separately for musculoskeletal, cerebro-cardiovascular, and medical diseases, and the judgments of ODs are made by the chairperson of COMWEL and six committee members by majority vote by issue. To reinforce the expertise of the members of the CODJ, periodic education and a system to accredit the committee members after appropriate education should be introduced. To fairly and quickly compensate for diseases that occur in workers, the criteria for the recognition of occupational diseases should be continuously amended and the systems for disease investigations and judgments should be continuously improved.

Keywords: Occupational Diseases; Workers' Compensation; Korea

INTRODUCTION

The term "workers" refers to those who undertake paid employment irrespective of occupation (1). Workers are exposed to various kinds of risks in the process of work. Such risks may cause injuries that occur in the process of work, or diseases caused by materials handled by the workers or by the working conditions.

Employers' responsibilities are specified for accidents that occur while working and diseases caused by work. Pursuant to the Labor Standard Act (LSA), employers are required to bear medical expenses for work-related injuries or diseases, pay 60% of the workers' average wage even during leaves of absence for treatment, and compensate for workers' disabilities or death due to any accident or disease occurred in relation to work (2).

Ultimately, when any work-related accident occurs, monetary and productivity losses are incurred by the employer. However, the Industrial Accident Compensation Insurance Act (IACIA), first established in 1964, is based on the principle of no-fault liability that serves to disperse employers' burden. Except for agricultural, forestry, and fishing industries having fewer than five regular workers, employers of all workplaces having one or more regular workers are mandated to buy Workers' Compensation Insurance (WCI), which is intended to provide treatment for occupational injuries and diseases and compensation for the resultant labor losses.

From the standpoint of workers who suffer from work-related accidents, the issue of whether their disease can be approved as an industrial accident is a major determinant of who will bear their medical expenses, whether they suffer monetary loss resulting from their inability to work, and whether they will receive compensation. It is important that occupational diseases (ODs) be judged fairly for workers who request insurance benefits, employers who pay insurance premiums, and the insurer, Korea Workers' Compensation and Welfare Service (COMWEL), who pays the insurance benefits to workers. Furthermore, fast and convenient processes for the application of medical care benefits and compensation for work-related accidents are important for workers. Injuries occurring during work are easily recognized as occupational injuries as long as it is proven that these workers were working at the time of the accident. However, for diseases to be recognized as compensable ODs, complicated administrative processes requiring time and effort are required; because these processes are complicated, diverse problems may occur in any individual's process. Therefore, the purpose of this paper is to describe the processes for the recognition and compensation for ODs of workers covered by the IACIA and present the related problems and solutions. In this paper, the term "occupational disease" or "compensable occupational

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disease" refers to an occupational disease or work-related disease, the term "occupational injury" refers to an injury by an accident that occurred when working, and the term "work-related accident" refers to an industrial accident as specified in the IACIA.

COVERAGE OF THE WORKERS' COMPENSATION INSURANCE

IACIA plays several roles in the social security of workers as well as the dispersion of employers' responsibilities. Before discussing the recognition and compensation for ODs pursuant to the IACIA, the application of the IACIA should first be addressed because this is related to not only the IACIA but also the social security system for the entire nation.

As of 2012, the number of employees in Korea was approximately 24 million; of them, approximately 16 million workers were covered by the IACIA (4, 5). Employers having one or more regular workers are mandated to buy WCI and pay insurance premiums so that their paid workers become the insured of WCI (6). Businesses that are not required to buy WCI are agricultural, forestry, fishing, and hunting businesses having fewer than five regular workers, household employment activities, construction work totaling less than 20 million Korean won, and occupations where compensation are made pursuant to separate laws, such as public servants, soldiers, crewmen, and private school personnel (7).

Additional workers not originally designated as workers under the LSA but who provide similar labor, came to be covered by WCI over time. Since January 2011, workers such as insurance planners, concrete mix truck drivers, home-school teachers, and golf caddies are covered by WCI, and since May 2012, parcel service workers and express delivery service workers have also been covered by WCI. The WCI premiums for these workers are jointly borne by employers and these workers, and exclusion from the coverage may be requested if the workers do not want the insurance (8, 9). In addition, employers who run passenger transport or cargo transport services, construction machinery businesses, express delivery service employers, and artists can be covered by the WCI (10, 11). Further, there are special regulations for overseas businesses, employees dispatched to foreign countries, and on-the-job trainees (12).

WCI is the oldest social insurance in almost all countries. In most countries, only employees were covered when WCI was first introduced. However, the number of countries where subjects other than employees are covered has increased. Countries where the entire nation is covered by WCI are the Netherlands and New Zealand. Countries where not only employees but also some unemployed persons such as housewives and students are covered by WCI include Germany, Luxembourg, Austria, Hungary, Norway, and Denmark (13). The expansion of the coverage of WCI means the guarantee of coverage of diseases and injuries of people who actually work or provide services as well as the insurance of community members' risks. In countries like Korea, which have not completed the integration of the social security system, it is important to cover people who actually work or provide services irrespective of their employment relationships.

One method of increasing workers covered by the WCI in Korea moves workers out of the scope of LSA and under the scope of WCI, as Japan has done. Those who would be covered by this expansion include vocational trainees, self-employed workers and their spouses, those who are engaged in honorary positions of medical institutions, those employed at social welfare facilities and public institutions, and job seekers. However, the expansion in Japan was limited because it adopted a voluntary entry system. Another possibility would be to mandate the expansion of WCI to cover even elementary/middle/high school students and university students, as the German WCI does. This expansion of the coverage of WCI would mean changing the nature of Korea's WCI from no fault liability insurance that exempts employers to social insurance intended to guarantee fundamental human rights (14).

PROCESS FOR THE RECOGNITION OF OCCUPATIONAL DISEASES

Outline for the process of the recognition of occupational diseases

The process of the recognition of ODs is shown in Fig. 1. Compensation for ODs is determined pursuant to the specific criteria for the recognition of ODs in schedule 3 of clause 3 of article 34 of the Enforcement Decree of the IACIA (ED-IACIA). Irrespective of diseases that fall under the criteria for the recognition of ODs, the COMWEL conducts internal investigations for ODs or requests external consultation and epidemiological investigations if internal investigations for ODs are judged impossible. All internal investigations require COMWEL advisory doctors' consultation.

In cases where expert evaluation of work-relatedness is necessary, external consultation and epidemiological investigations are conducted and decisions on whether to conduct an expert evaluation are made by COMWEL; expert advice in occupational and environmental medicine plays an important role in this process.

Currently, the work-relatedness of respiratory diseases is evaluated through epidemiological investigations by the Occupational Lung Disease Institute (OLDI) under the umbrella of COMWEL. In the case of other diseases, the Occupational Safety and Health Research Institute (OSHRI) of the Korea Occupational Safety and Health Agency (KOSHA) conducts internal investigations or requests private institutions to complete epidemiologi-

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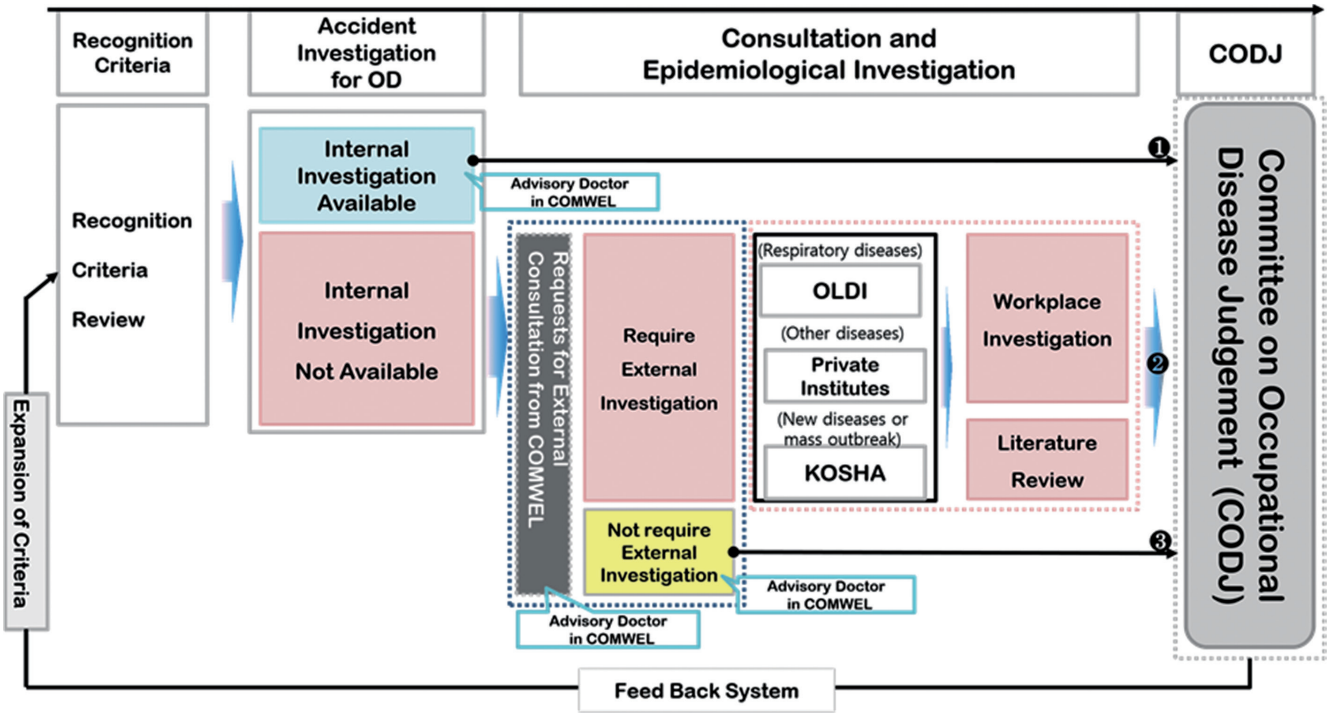

Fig. 1. Outline of the process of recognition of occupational diseases in Korea. OD, Occupational Diseases; OLDI, Occupational Lung Disease Institute; KOSHA, Korea Occupational Safety and Health Agency.

cal investigations. In the case of new diseases or mass outbreaks, the KOSHA conducts epidemiological investigations firsthand. All investigation for OD reports and epidemiological investigation reports are submitted to the Committee on Occupational Disease Judgment (CODJ), and the final approval of compensable ODs is decided on the basis of the results.

For all diseases except for pneumonoconiosis, carbon disulfide poisoning, and acute toxic symptoms or signs after massive exposure to harmful risk factors, additional injuries or diseases eligible for medical care benefits, and noise-induced hearing loss, whether the diseases are compensable or not is decided by a deliberation meeting of the six CODJs throughout the country operated by the COMWEL (15, 16). All deliberation agendas include advisory opinions such as the opinions of advisory doctors appointed by the COMWEL and epidemiological investigation result reports prepared by the OSHRI of the KOSHA, the OLDI, or private institutes.

In the deliberation meetings of the CODJs, whether the relevant disease should be compensated or not is determined by the attendance of the chairperson of the committee and a majority of six committee members designated by the chairperson and the opinions of agreement of the majority of the attending committee members. In case of a tie in the deliberation opinions, the issue is discussed again in the next deliberation meeting (17).

When a denial decision has been made by the CODJ and the worker has been notified, the worker may request a reexamination within 90 days, which will be approved or disapproved by the Industrial Accident Reexamination Committee (18). The Industrial Accident Reexamination Committee (IARC) is an organization under the umbrella of the Ministry of Employment and Labor established pursuant to article 107 of the IACIA, which is composed of committee members not exceeding 60 members including one chairperson. Each meeting of the IARC is composed of nine committee members including the chairperson or the vice chairperson, standing committee members, and other committee members designated by the chairperson at each meeting, and decisions are made by majority attendances of members and majority votes (19, 20). Workers may also file administrative litigations with the court against denial decisions without requesting for a reexamination or after going through a reexamination (21).

Application for medical care benefits for industrial accidents

Work-related accidents under the IACIA refer to workers' injuries, diseases, disabilities, or death due to work-related reasons (22). Those who wish to receive medical care benefits for work-related accidents must apply for those benefits by submitting an application to COMWEL that includes both a "claim for medical care benefits" document and an "initial medical examination findings" document, and medical institutions that treated workers can also apply for medical care benefits (23). The claim form for medical care benefits should include the worker's per-

sonal information, cause of the accident, description and explanation of the event, whether compensation is to be received other than benefits from WCI, the employer's seal or signature, and the victim's seal or signature. The written opinion form based on the first medical examination incudes the date of the event, the date of arrival at the medical institution, injury or disease name and code, the details of the event known by the attending physician, the patient's symptoms, and the names of major tests conducted. If the application for initial medical care benefits has been submitted without the employer's seal or signature, the branch office of the COMWEL should notify the employer of the medical care benefits application, and request the employer to submit his opinion on how the accident occurred in writing (24). All rights for insurance benefits can be exercised only when applications for medical care benefits have been submitted within three years after the date of occurrence of the accidents. If applications for medical care benefits are submitted when three years have passed after the date of occurrence of the accidents, only the rights for the diseases remaining at the time of application for medical care benefits can be exercised (25).

As of June 2010, it took an average of 109.4 days from the occurrence of OD to the receipt of an application for medical care benefits, and an average of 48.1 days from the receipt to the approval (14). It seems that a significant amount of time was taken from the event to the receipt of an application. This may be attributable to the complexity of the application process for medical care benefits.

In general, victims have difficulty preparing documents for application for medical care benefits when they are focused on their initial treatment. They typically prepare the initial application for medical care benefits after treatment has progressed to some extent. The content of the accident description and details in the initial application for medical care benefits is agreed upon by the employer and the victim/employee. If the employer does not agree to the application for medical care benefits and refuses to seal or sign the written application, the employer and the victim will be placed in an adversarial relationship. The possibility of disapproval may increase when the employer provides poor data and does not cooperate in the accident investigations. In addition, the doctor's written opinion based on the initial medical examination submitted together with the application should contain an accurate diagnosis and the expected treatment period; this typically requires a certain amount of time because it is prepared when the acute phase of treatment has progressed to some extent.

Accidents are reported more quickly in other countries because accident reporting and medical care benefits application processes are separate. In the case of Germany, when an accident has occurred, the employer and the doctor of the initial treatment are required to report the accident to a WCI institution after recognizing the accident (26). In the case of France, the employer and the victim are required to report within 24 hr and the employer is required to submit the related documents within 48 hr (27). In the case of the state of Washington in the United States, the victim is required to report the accident to the employer and the doctor within 5 days, and the doctor is required to report the accident to the insurer and the employer within 5 days (26). In Canada, employers and doctors have the obligation to report industrial accidents, and the law specifies that if employers do not report, workers may report industrial accidents. Industrial accidents should be reported within seven days after occurrence. In Korea, the COMWEL cannot recognize industrial accidents before workers or medical institutions request for medical care benefits for industrial accidents (28).

In the case of Korea, workers' burden in the application process for medical care benefits would be reduced and the approval lag time would be shortened, if accident reporting and medical care benefits applications were separated in the case of occupational injuries so that the treating doctor immediately reports the accident to COMWEL, followed by the victim's application for medical care benefits, accident investigations, employer's confirmation, and COMWEL's decision regarding the medical care benefits.

Investigation for occupational diseases

When an application for medical care benefits for a compensable OD has been submitted, the head of the local branch of COMWEL reviews the coverage of the workplace by WCI, working conditions, and the reason for disease occurrence. As of October 2013, out of the 5,000 personnel of the COMWEL, 342 were in charge of accident investigations. The number of compensable ODs for which medical care benefits were requested for the first time investigated by the personnel between January and October 2013 was 3.1 cases per month per staff member and the number of occupational injuries was 21.9 cases per month per staff member (29).

In the case of diseases caused by overwork or stress, that is, cerebro-cardiovascular diseases, the existence of acute overwork first, followed by short-term overwork and chronic overwork in the order of precedence, should be reviewed to determine whether there were mental or physical burdens sufficient to have pathogenic effects on the normal functions of cerebrocardiovascular systems. In the case of musculoskeletal diseases caused by work with physical burdens, the alleged work is investigated at the site as long as possible, photographs or videos of the work are taken, and a comprehensive review of the period of time the worker engaged in work with physical burdens and that of non-occupational factors is conducted so that a judgment can be made. In the case of diseases caused by hazardous chemicals, the work performed by the victim, the department in which the victim worked, and the length of time the victim

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held that job are reviewed through personnel record books. The working environment of the relevant workplace, the degree of exposure to harmful factors, the period of exposure, and the kinds of chemicals handled by the victim are assessed with working environment measurement result tables and thorough interviews of the employer or colleague workers. If the workplace did not measure working environments, epidemiological investigations are requested. If the working environment cannot be measured, the results of the measurement of workplaces with similar work types and working environments are applied *mutatis mutandis*.

The members of the accident investigation teams in the compensation departments of COMWEL are typically administrative staff who has significant experience in compensation work but insufficient expertise in the smooth conduct of investigations for compensable ODs. Ultimately, the poor contents of field investigations conducted by the accident investigation team affect the review by advisory doctors or CODJ members. The related applications are likely to be denied as a result, unless exposure to harmful factors is objectively identified by the contents of field investigations in addition to the victims' arguments. To solve this problem, the staff in charge of accident investigations should be chosen on the basis of the level of difficulty and expertise. Employers and related institutions should be obligated by law to cooperate with COMWEL accident investigation staff and to submit data when COMWEL conducts accident investigations for information collection. In addition, experts' support in the process of accident investigations should be expanded.

Committee on Occupational Disease Judgment

Committee on Occupational Disease Judgment operation system

The CODJ has operated with six regional headquarters throughout the country since July 1, 2008. Decisions made by the CODJ have the same effects as the decisions from the Industrial Accident Examination Committee when applied to occupational injury. The CODJ is operated as a semi-independent organization unaffected by the branch to which it belongs. The number of members in each regional headquarters of the CODJ was 50 at the beginning of the enforcement; it was increased to 70 in April 2010 and to approximately 100 in May 2012. The CODJ is composed of one standing member as the chairperson from COMWEL, members recommended by worker groups and employer groups in the same numbers corresponding to one third each of the entire members, and members appointed by the chairperson of the committee from among lawyers, certified labor attorneys, assistant or higher-level professors of universities, physicians, dentists, practitioners of Eastern medicine, those who have been engaged in WCI-related work for at least five years, occupational hygienists, or ergonomic engineers who have been engaged in related work for at least five years (15). Deliberation meetings are held 3-4 times per week on average. Deliberation meetings are held by disease groups such as musculoskeletal diseases, cerebro-cardiovascular diseases, and medical diseases, and the chairperson selects six committee members by expertise area to conduct the meetings (30). There are six CODJ offices located in Seoul, Gyeonggi-Incheon, Daejeon, Daegu, Busan, and Gwangju, respectively, and each of the committees deliberates on events in the area under its jurisdiction. However, deliberation meetings are held in the Seoul CODJ for diseases of the departments of neuropsychiatry, obstetrics and gynecology, ophthalmology, otolaryngology, dermatology, and urology, and cancers for the department of internal medicine (31). The chairperson should designate two or more specialists of the relevant disease for the relevant deliberation meeting and two or more specialists from the department of occupational and environmental medicine; provided that, one expert from the area of ergonomics or industrial hygiene may substitute one specialist from the department of occupational and environmental medicine (32). Approximately 15 briefly summarized agenda items are sent in advance to individual committee members for review prior to each deliberation meeting, although there are some differences by branch. Decisions on deliberation cases are made when consensus is reached through explanations by committee examiners, data reviews, submission of opinions by committee members, and discussion. In cases where agreement is not reached because committee members have different opinions, individual committee members submit their opinions and decisions are made by majority votes (33).

Pending issues of the Committee on Occupational Disease Judgment

Criticisms of the committee include the following: the disapproval rate has become higher than before; deliberation procedures have become complicated, and therefore, the time to the final decision has been extended; and the related workforce and costs have increased. However, the operation of the CODJ can be judged positively in that it has enabled independent deliberations and decisions and has enhanced impartiality with discussion by committee members from different expertise areas (34).

Table 1 shows the results of deliberations on compensable ODs for which medical care benefits were requested from 2006 to 2010 (3). Since July 2008, when the CODJ was established, the disapproval rate for musculoskeletal diseases and cerebrocardiovascular diseases have shown increasing trends as compared to before the introduction of the CODJ. However, determining what this means is difficult for several reasons, such as changes in the criteria for the recognition of musculoskeletal diseases and cerebro-cardiovascular diseases, and the changes in the operation of the CODJ.

Table 1. Trends of claim and disapproval for occupational diseases in 2006-2011 (unit: cases)

Diseases	2006			2007			2008			2009			2010		
	No. of claims	No. of dis-ap-provals	Dis-ap-proval rate* (%)	No. of claims	No. of dis-ap-provals	Dis-ap-proval rate (%)	No. of claims	No. of dis-ap-provals	Dis-ap-proval rate (%)	No. of claims	No. of dis-ap-provals	Dis-ap-proval rate (%)	No. of claims	No. of dis-ap-provals	Dis-ap-proval rate (%)
CVD	3,492	2,090	59.9	3,236	1,934	59.8	3,103	2,105	67.8	2,909	2,455	84.4	2,780	2,379	85.6
MSD	4,298	1,416	32.9	3,485	1,557	44.7	3,885	1,650	42.5	5,853	2,710	46.3	6,163	3,221	52.3
Mental disease	83	56	67.5	82	57	69.5	66	45	68.2	102	76	74.5	95	80	84.2
Bacterial disease	150	70	46.7	228	91	39.9	177	78	44.1	235	73	31.1	163	65	39.9
Hepatic disease	88	83	94.3	113	108	95.6	88	81	92.0	96	87	90.6	60	51	85.0
Others	99	38	38.4	1,095	750	68.5	1,083	785	72.5	838	688	82.1	1,118	837	74.9
Total	8,210	3,753	45.7	8,239	4,497	54.6	8,402	4,744	56.5	10,033	6,089	60.7	10,379	6,633	63.9

Source: Korea Workers' Compensation & Welfare Service (2011). *Disapproval rate = No. of disapprovals/No. of claims. CVD, Cerebro-cardio vascular disease; MSD, Musculoskeletal disease.

Advantages of the Committee on Occupational Disease Judgment

Before the introduction of the CODJ, judgments on ODs were made by individual opinions of the advisory doctors to individual branches of COMWEL. As a result, issues about the expertise and consistency of the judgments on ODs made separately by 55 branch offices were continuously raised. Therefore, the CODJ was created in 2006 through an agreement by the WCI Advancement Committee of the Korea Tripartite Commission of Labor, Management, and Government (35).

Deliberation meetings of the CODJ have gradually developed in terms of operation from the time of its introduction to now. From July 2012, deliberation meetings have been held separately for different disease groups and two or more relevant specialists have been included in each deliberation meeting to improve expertise (30, 32). In addition, the efficiency of deliberation and expertise on rare diseases has been improved as diseases other than musculoskeletal and cerebro-cardiovascular diseases have been comprehensively deliberated by the Seoul CODJ (31). Furthermore, the fairness and expertise of OD judgments have been reinforced by having two or more specialists in occupational and environmental medicine participate in each deliberation meeting in order to enable the evaluation of the work-relatedness of the relevant disease (32). That is, whether diseases deliberated by the CODJ should be recognized as compensable ODs has been decided by specialists from the relevant department and work-relatedness has been evaluated by specialists in occupational and environmental medicine so that the meetings could progress efficiently and judgments could be made fairly through agreement among experts. Among the committee members who are not doctors, the participation of experts on ergonomics and those on industrial hygiene was expanded so that their expertise could be reinforced.

Problems and solutions of the Committee on Occupational Disease Judgment

Many problems have arisen since the introduction and operation of the CODJ. First, committee members may have insufficient expertise. Judgments on OD are an area of expertise that is not guaranteed through medical education and field experience. Although the committee members may be experts in medical diagnoses in their own specialty areas, judgments on the existence of work-related overwork or evaluation of work with burdens in working environments cannot be informed only by medical education. In particular, judgments on work burdens and overwork are important for musculoskeletal and cerebro-cardiovascular diseases, and such judgments should be made through an understanding of workplaces and experience in judgments on ODs. The committee members should be educated periodically to reinforce their expertise. Currently, when evaluating work-relatedness, individuals' own judgment criteria are applied to issues for which concrete criteria for the recognition of ODs are not available. To solve these problems, differences in judgment criteria between committee members should be reduced using diverse media such as education and guidelines for issues with many different opinions. In the long run, a certification system should be established to certify those who have completed education and performed practical work for a certain period. They could be called "specialists in industrial accidents" and used to judge ODs.

Second, there are concerns with accurate accident investigations for ODs. If accident investigations for ODs are poorly conducted, work burdens are more likely to be evaluated as low and the applications are quite likely to be denied. Most compensable ODs require site accident investigations, and such accident investigations should be conducted to fit the characteristics of individual diseases. However, currently, most accident investigations are conducted by the staff of the departments of compensation with workplace data and victims' statements; consultation and deliberations are based on these investigations. In the case of musculoskeletal diseases, site investigations should be conducted for all cases. If the work tasks are simple and the burdens can be evaluated with the first site investigation, the staff should request immediate deliberation from the CODJ. If the work tasks are complicated and the burdens can-

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not be evaluated with the first site investigation, a detailed burden evaluation should be requested of related experts. Such evaluations should be requested of the departments of occupational and environmental medicine and ergonomics of universities, or individual ergonomics engineers should be asked to evaluate reports after investigations and submit their findings to the CODJ. Thorough investigations of past job histories are necessary for musculoskeletal diseases. In the case of construction workers and daily laborers, although past job histories are presented on the basis of workers' statements, the past job histories are not accepted currently because objective employment records, such as entries into the four major insurances, are not available. Measures to accept daily laborers' past job histories should be implemented.

Third, COMWEL support for the criteria and processes of judgments on ODs is insufficient. COMWEL should prepare concrete criteria applicable to judgments on ODs so that these criteria can be applied uniformly. Concrete criteria for the recognition of ODs and continuous revisions of the criteria and guidelines should be reinforced. Casebooks should be published to apply the criteria to individual cases. Although the current criteria are typically amendments of laws, notifications, and guidelines, with more details, they can be considered criteria applicable to individual cases and judgments. Laws, notifications, and guidelines cannot be amended without studies of individual cases. Operating as permanent committees can reinforce work continuity and enable guideline development in cases raised by individual CODJs. The permanent committees should include worker groups, employer groups, and experts to brainstorm problems and discuss scientific resolutions.

DISCUSSION

The approval system for ODs in Korea is developing slowly and has certain problems. COMWEL is making efforts such as increasing the number of accident investigation staff members for work-related accidents, introducing the CODJ, and improving the criteria for the recognition of ODs. The change in the approval of ODs to be independently made by the CODJ after the introduction of the committee in July 2008 can be said to be an important change. The amendment on June 28, 2013, of the specific criteria for the recognition of ODs in the schedule to the ED-IACIA is a meaningful amendment. It includes inclusive criteria for the recognition of ODs; in other words, all diseases due to work-related causes can be recognized as compensable ODs even if these diseases are not in the list of recognized ODs, there is an increase in the number of harmful factors including a great increase in the number of carcinogens, the list of compensable ODs is expanded using disease classification by anatomical system, the linkage between the specific criteria for the recognition of ODs in the ED-IACIA is reinforced, and the scope of ODs in the Enforcement Decree of the LSA (ED-LSA) is increased. However, the amendment does not include the levels of harmful exposure and concrete criteria for diagnosis. Therefore, in addition to the laws, ancillary manuals that can be easily understood by accident investigators, workers, and CODJ should be published. This task is not only important for investigations of ODs and for the smooth operation of the CODJ but also indispensable for workers who have some responsibility to prove ODs. The most important factor in the procedure for the approval of ODs is the establishment of concrete criteria for the recognition of ODs that can be understood to some extent even by non-experts. This can be said to be more important than reinforcing the expertise of the CODJ in the process of accident investigations for ODs. To this end, a permanent committee should be organized for continuous reviews and amendments of the criteria for the recognition of ODs.

In addition, the WCI should be continuously studied and related laws should be amended. WCI is the first type of social insurance t introduced anywhere in the world and is the most common insurance system in the world (13). The IACIA can be said to be an ambivalent social insurance system. First, it serves the function of compensating for losses from employers' responsibility for compensation. It converted the right of workers suffering from work-related accidents, to request wages from employers into the right to request insurance benefits. Second, the IACIA serves the function of maintaining living levels from before the occurrence of accidents and promoting early returns to work. This has been recently specified by the Constitutional Court and can be said to be a gateway to advanced social security (36-38).

Diverse problems should be solved for the development of WCI systems because these systems are also associated with national social security systems. The contents of WCI programs are specified depending on the programs' relationships with other social insurance programs. First, there are cases where WCI is operated within the social insurance system while being applied to general risks such as diseases, death, and old age such as the WCI in the UK and New Zealand. Second, there are compulsory insurance systems that are operated within the social insurance system but not integrated with general social insurance but are separated such as the WCI in Korea and Japan. Third, there are independent WCI systems in which the obligation to buy WCI is imposed on employers but are not operated as general social insurance systems such as the systems in Germany and France (13). None of these types can be said to be advantageous over others because these systems are also closely associated with the relevant countries' economic scales and structures and the history of social security systems. In addition, WCI differs among countries in terms of operating schemes, subjects of application, financing methods, and benefit granting methods. Items to be improved in WCI should be derived to

fit the reality of Korea through comparisons of these individual elements among countries and should be steadily discussed and studied.

In the short run, continuous expansion of the subjects of the WCI, integration with other social insurances, and the preparation of stable financing can be said to be important tasks. In other words, more people should be compensated for diseases that occur at work irrespective of work-relatedness in more efficient and integrated social insurance systems. The most important thing that can be done by physicians in relation to workers' diseases is asking what kinds of work the patients did because recognition is the first step in lightening workers' burden of medical expenses.

DISCLOSURE

The authors declare that they have no conflicts of interest to disclose.

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