

THE DIAGNOSIS AND REPORTING OF OCCUPATIONAL DISEASES: THE PERFORMANCE OF PHYSICIANS IN THAILAND

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Abstract. The diagnosis and reporting of occupational diseases are important components of any occupational disease surveillance system. These two factors were assessed in 222 Thai physicians by using a self-administered questionnaire. Study results show that a proper diagnosis of occupational disease is hampered by the following: lack of knowledge about occupational medicine; a shortage of environmental data; a lack of consultation services and laboratory facilities. Concern about possible legal implications also prevents physicians from making a diagnosis of occupational disease. Evidence shows that financial incentive seems to play a crucial role in physicians' compliance with the reporting system. A number of remedial approaches are proposed, including the improvement of professional training, the development of standard practice guidelines, and novel financial measures for healthcare providers. Improvement calls for the collaborative effort of all responsible agencies and warrants further research that will guide policy and practice.

INTRODUCTION

The recognition, diagnosis and reporting of occupational diseases by physicians are vital steps in any occupational disease surveillance system. In Thailand, this system includes the Workmen's Compensation Reporting System (WCS) maintained by Ministry of Labor and Welfare and the notifiable diseases reporting system (R506) of the Division of Epidemiology, Ministry of Public Health (MOPH). The WCS, which covers approximately 5.4 million workers (32% of all industrial workers) in the industrial sector, reports on worked-related injuries and illnesses which amount to 3.6% of the total annual number of documented cases. Over 90% of reported cases under the WCS are injuries (Workmen's Compensation Office, 2000). The R506 data system deals with the notification of occupational diseases from over 800 hospitals under the MOPH which are scattered throughout the country. As the data from these systems are incomplete, supplementary sources are used, including: sporadic surveys, hospital records, factory records, and death certificates (Aekplakorn *et al*, 1995; Division of Occupational Health, 1995).

Regardless of reporting systems, the recognition, diagnosis and reporting of occupational illnesses depend heavily on physician performance, which is influenced by a number of factors such as financial motivation, training background and laboratory support (Institute of Medicine, 1988; Govender *et al*, 2000). Very little is known about the influence of these factors in Thailand. This study aims to explore those and other factors: training background, employment status, financial incentives, consultation services, and laboratory support.

METHODS

We surveyed the opinions of a sample of physicians working in hospitals; the physicians worked in public or private hospitals located in the industrial provinces (Samut Prakan, Nakhon Pathom, Pathum Thani and Nonthaburi) adjacent to Bangkok. The study was conducted in February-April 1999. The study sample included 174 physicians with training in occupational medicine and 136 physicians without specific training but with experience in the diagnosis of occupational diseases gained during

the 12 months prior to the study or who worked at hospitals in an industrial area. Lists of these physicians were obtained from the MOPH and from the Workmen's Compensation Office, Ministry of Labor and Welfare which maintains a database of physicians who report occupational diseases for workers' compensation and medical reimbursement. A self-administered questionnaire with instructions was sent to all the physicians whose addresses were complete. A second questionnaire was sent if there had been no response to the first within one month. Of 310 questionnaires sent, there were 222 responses (response rate 71.6%). Ninety-two percent of the respondents responded to the first questionnaire. Response rates for the physician with specific training and for those without specific training were 70.1 % and 73.5% respectively. The questionnaire collected information about the diagnosis of occupational diseases during the past 3 months prior to the survey and opinions regarding obstacles to diagnosis and the factors influencing the diagnosis of occupational diseases.

Data analysis was by frequency count and percentage calculation. Comparison between

groups showed no difference in opinions; the results were therefore presented as being of a single group.

RESULTS

Table 1 shows the demographic and training characteristics of the 222 physicians who participated in the study. Forty-six percent of them had undertaken in a short-course in occupational health conducted by either the Department of Medical Service or the Division of Occupational Health, MOPH. Seventy-five percent of the respondents were used to diagnosing occupational diseases and more than half (61%) of respondents were confident in their diagnosis. The physicians with a training background were more likely to diagnose an occupational disease than those without a training background (33.4% and 13.4% respectively). A substantially higher proportion of the respondents reported to the WCS (56.9%) than to the MOPH (3.6%), as shown in Table 2. The physicians working in private hospitals were more likely to report cases to the WCS

Table 1
Demographic and training characteristics of 222 physicians participated in the study.

| Characteristics | With training background (n=103) % | No training background (n=119) % | Total (n=222) % |
|-------------------------------------|---------------------------------------|-------------------------------------|--------------------|
| Sex | | | |
| Male | 80.2 | 85.5 | 83.0 |
| Female | 19.8 | 14.5 | 17.0 |
| Age group(yr) | | | |
| 20-29 | 2.0 | 7.7 | 5.1 |
| 30-39 | 46.0 | 39.3 | 42.4 |
| 40-49 | 33.0 | 42.7 | 38.2 |
| 50-59 | 16.0 | 6.8 | 11.1 |
| 60+ | 3.0 | 3.5 | 3.3 |
| Specialities | | | |
| General practice | 31.1 | 16.0 | 23.0 |
| Medicine | 3.9 | 8.4 | 6.3 |
| Orthopedics | 6.8 | 26.9 | 17.6 |
| General surgeon | 7.8 | 26.9 | 18.0 |
| Preventive | 24.3 | 0 | 11.3 |
| Others (eyes, skin, ENT, Ob-gyn) | 26.3 | 21.8 | 23.9 |

Table 2
Experience in diagnosis of occupational illnesses and injury.

| Characteristics | Total (n=222) % |
|--|-----------------|
| Past experience in diagnosis of occupational diseases | |
| Have ever diagnosed occupational illness or injuries | 75.2 |
| Feel confident in making diagnosis | 61.1 |
| Report to WCS | 56.9 |
| Report to MOPH | 3.6 |
| Conditions diagnosed in the 3 months prior to survey | |
| Acute injury | 62.0 |
| Musculoskeletal injury | 16.3 |
| Skin disease | 11.6 |
| Lung diseases | 3.9 |
| Chemical poisoning | 4.6 |
| Noise-induced hearing loss | 1.5 |

(70%) than physicians working in public hospitals (40%).

Factors influencing diagnosis

The respondents were asked to identify obstacles that contributed to the under-diagnosis of occupational disease. They reported that the following factors prevented them from making a diagnosis: lack of knowledge of occupational medicine (81.5%); a shortage of environmental data (80.6%); a lack of consultation services (68.0%); a lack of laboratory support (59.0%) and inadequate financial incentives (37%). In addition, 68.5% reported that they were reluctant to make a diagnosis for fear of being called to testify in court if a different opinion is given by a workers' employers. The inadequate number of occupational medicine specialists was also claimed to play a role in underdiagnosis by 69.8% of the respondents.

The majority (93%) of the respondents demanded standard practice guidelines and a computer-assisted search facility for information on clinical toxicology and occupational diseases: these tools would support the diagnoses made by physicians. Hospital accreditation was also considered to be a supportive mechanism by 67% of the respondents. With regard to training, the majority of the respon-

dents agreed that the content of the occupational medicine taught at undergraduate level was inadequate (87.95%); however, only 21.2% were of the view that content should be added to the undergraduate curriculum. Forty percent of the respondents preferred a continuing education program for postgraduates.

Role in diagnosis

In response to the question of who should take responsibility for making a diagnosis of occupational disease, different opinions were expressed: forty-one percent of the respondents preferred to see physicians with some training in occupational medicine taking the role of diagnostician, while one third supported primary care physicians in this role; less than one fifth considered occupational medicine specialists suitable for the role and only 8% proposed that a committee of multi-speciality experts ought to assume the burden of diagnosis.

DISCUSSION

The diagnosis of occupational diseases is crucial in any system of occupational health surveillance. The present study identified a number of factors influencing physician's di-

agnosis of occupation illness in Thailand.

Firm evidence shows that deficits in the confidence, knowledge, and skills of doctors working in adolescent health create barriers to the delivery of healthcare to young people (Sanci *et al*, 2000); these findings are echoed by those of our study. Using an evidence-based approach, a training course for the healthcare of the young successfully enhanced the positive professional attributes of general practitioners as confirmed by a randomized controlled trial. So far, there have not been any attempts in Thailand to develop an evidenced-based training course in occupational medicine. Training in occupational medicine should be encouraged at both the undergraduate and postgraduate level.

Concerns regarding the availability of consultation services in support of making a diagnosis of occupational disease imply the need for an increase in the number of fairly-distributed specialists in occupational health; if this need is to be addressed systematically, then further research and human resource planning for occupational health are warranted. Such steps call for a collaborative effort between interested institutes (WCS, MOPH) and the universities.

Another important issue raised by the respondents is the availability of laboratory facilities. At present, most general hospitals in Thailand are equipped with laboratory facilities (gas chromatography, atomic absorption), medical equipment for health surveillance (audiogram, spirometer) and environmental monitoring tools (noise dosimeter, personal sampler). However, very few of these hospitals have been in full operation because of manpower shortages. This mismatch of personnel and equipment clearly indicates the poor management and planning of occupational health resources. Evidence-based policy decisions have to be made if occupational health resources are to be better managed.

Under the current healthcare system, providers report occupational illnesses to WCS in order to claim fees for their services; however,

there is no financial benefit to be gained by reporting to the MOPH (Workmen's Compensation Office, 1997). The substantial gap between the number of occupation cases reported to the MOPH and the number of cases reported to the WCS strongly indicates that financial incentive plays a significant role in influencing the reporting activities of physicians. Instead of maintaining the duplication of reporting systems, it might be more worthwhile to extend the WCS system by widening its scope, allowing more conditions to be reported, and fostering compliance among providers; there should, at the very least, be a contract between the providers and the WCS that obliges the former to set up an effective reporting system under the close supervision of the latter.

Finally, concern about possible legal implications seems to frustrate the diagnosis of occupational diseases. Diagnosis can lead to legal action against employers, whose liability may include increased premium rates and visits from the enforcement authority. Employers, as a result, tend to be skeptical of diagnoses and may base their defence upon questioning the validity of the diagnosis or upon countersuing physicians for making a wrong diagnosis (Davidson, 1996; Workmen's Compensation Office, 1997). There are mechanisms that minimise such potential conflicts: a workable no-fault compensation scheme; setting up a medical adjudication authority; establishing a special medical board to consider specific diseases and to submit medical evidence for legal judgement. Where these mechanisms exist, physicians should be made aware of them and should become familiar with their operation.

One limitation of the present study is that the respondents may not truly representative of all physicians involved in occupational health; however, the study considered a group of physicians who were interested and experienced in this field. Their views have shed some light on the recognition and diagnosis of occupational diseases.

In conclusion, this study has identified a number of factors influencing the diagnosis and reporting of occupational illnesses. Im-

provement of the reporting system requires the concerted effort of all responsible agencies and should be guided by further research.

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