

Activity profiles of the occupational health services in a multinational company

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The management of the European division of a multinational company was aware of possible differences in the occupational health services (OHS) at their different locations. The objective of this study was to carry out a baseline assessment of these OHS. Structured interviews with representatives of the OHS were conducted at 20 locations in 11 countries. The OHS Recommendation from the International Labour Organization (ILO) was used as a standard for the organization and functions of the OHS. Considerable differences in the activity profiles of the OHS were detected. The inter-enterprise, multidisciplinary OHS spent most of their time on surveillance of workers' health in relation to work and on preventive activities in the working environment. Little time was spent on curative services for individual workers. OHS made up of individual physicians and nurses generally spent much of their time on treatment of occupational and non-occupational diseases. This study has clarified the status of the OHS providers and the potential for improvements in order to meet the needs of the company's locations and to comply more closely with the ILO recommendation.

Key words: Evaluation studies; multinational company; occupational health and safety; occupational health services; quality control.

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Introduction

In recent years there has been increasing concern for the justification of activities carried out by occupational health services (OHS) from employers, governments, trade unions, insurance companies, etc. [1,2]. Several studies have described the structure and functions of OHS in different countries as characterized by the OHS providers or clients [3–9]. The specific challenges for the provision of OHS in multinational companies have been discussed by van der Vliet [10]. However, there have been no studies of the structure and activity profiles of OHS affiliated with the different locations of multinational companies.

The present study was carried out in the European division of a multinational company within the manufacturing industry. This part of the company employs

~7000 workers at 21 locations in 11 countries. The health and safety management of the company was aware of possible differences in the provision of services from occupational health personnel affiliated with the various locations. Furthermore, information from the OHS was not reported systematically to the central health and safety unit or to the local management. This was not satisfactory and the company decided to improve the provision of OHS.

The Occupational Health Convention and Recommendation from the International Labour Organization (ILO) [11] was used as a standard for the organization and activities of OHS within the company. A similar approach was taken by Muto [12], who examined the Japanese OHS from an international comparative perspective in order to highlight current problems and suggest possible improvements. The ILO recommendation focuses on the preventive functions of OHS and on the assessment of possible connections between the exposure to occupational hazards and health impairment. Furthermore, it states that OHS of a national or

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multinational enterprise with more than one establishment should provide the highest standard of services, without discrimination, to the workers in all its establishments, regardless of the place or country in which they are situated.

The aim of the present study was to provide baseline information for the implementation of measures in order to comply more closely with the ILO standard and the needs of the company's locations.

Materials and methods

Organization

A board of five members was established at the start of the project. The health and safety manager in Europe and the occupational physician of one of the locations represented the multinational company. One professor/specialist in occupational medicine, one administrative representative and one occupational hygienist represented the Section for Occupational Medicine, University of Bergen (UiB). The occupational hygienist from UiB and the occupational physician from the company were joint project coordinators.

Four board meetings were arranged during the project, which lasted from January to December 1998.

A reference group was established at the UiB consisting of the three board representatives from the university, two occupational physicians, one physiotherapist/psychologist and one occupational hygienist.

Locations

Twenty of the 21 locations of the company were included in the study. The local management of the missing location did not want to participate in the assessment. Twelve of the locations were production units with 175–680 workers, while the others were distribution centres with 25–320 workers. The enterprises were located in (number of enterprises in parentheses): Belgium (5), UK (4), Spain (2), France (2), The Netherlands (1), Italy (1), Sweden (1), Germany (1), Turkey (1), Hungary (1) and Poland (1).

Baseline assessment

The assessment of the occupational health provisions was carried out in two steps. First, a questionnaire was sent to the OHS units of all locations. The objective was, at an early stage, to gather basic information about the location and the personnel working in the OHS. Secondly, when the completed questionnaires had been returned, site visits to the 20 locations were carried out by the two project coordinators. Each site visit lasted for 4–6 h and comprised structured interviews with the environment health and safety (EHS) coordinator and representatives

of the OHS. A tour of the facility guided by the EHS coordinator was also included. During this tour, the project coordinators completed a checklist in order to identify the most apparent physical, chemical and ergonomic hazards in the working environment.

During the structured interview, questions were asked about the organization of the OHS, the personnel/professions employed in the OHS and the activities they provided. Questions about the activities of the OHS were based on the main topics described in the Occupational Health Services Convention and Recommendation from the ILO [11]. The OHS representatives were allowed to study the content of Table 1 for ~10–15 min to point out the activities they had been involved in during the last 3 years. The project coordinators followed up with additional questions focusing on the activities selected by the OHS representative. The objective of the additional questions was to verify in more detail the activities the OHS had actually carried out.

Afterwards, the OHS representative stipulated how much time the service had spent on the different groups of activities listed in Table 1 during the last 3 years. Time was given as a percentage of the total working time for that specific location.

Furthermore, the OHS representative selected which in-service/training courses they would like to attend to increase their competence relevant to their OHS work.

Table 1. List of activities which should be carried out by OHS [11]

a	Surveillance of the individual worker's health in relation to work
	Pre-employment health examination
	Periodic health examination of all workers
	Specific examination of selected group of workers
b	Provision of curative services for occupational diseases/accidents
	Diagnosis and treatment of occupational diseases
	Treatment and first aid for occupational accidents
	Rehabilitation/resettlement of employees with diseases
c	Provision of general health care services
	Diagnosis and/or treatment of non-occupational diseases
	Vaccination of employees
d	Securing future working environment
	Strategies of occupational health programmes
	The planning of new or changed workstations/practices/work organization
e	Surveillance of the current working environment
	Walk-through surveys with guidance/checklists
	Risk assessment of chemical/physical/ergonomic hazards
	Psychological/psychosocial assessments
f	Advice on the control of hazards at work
	Ergonomics/climate/dust exposure/chemical hazards/noise
	Personal protective equipment (PPE)
g	Health education and health promotion
	General health information to the workers
	Information about healthy lifestyle/health promotion
	Information/training in first aid

They were asked to choose four topics from a list of nine: medical surveillance; rehabilitation/resettlement of workers; surveillance of the working environment; control of physical and chemical factors; ergonomics; health and safety legislation; emergency responses/first aid; psycho-social/psychological issues; and health promotion.

Results

Hazard identification

In the production units, the project coordinators considered the most apparent health hazards to be repetitive work, noise, dermal exposure to detergents and dyes, and sharp needles and knives. In the distribution centres, manual handling of heavy boxes and repetitive work were the most apparent health hazards.

Organization of OHS

Table 2 shows that 3 of the 12 production units and 5 of the 8 distribution centres were affiliated with inter-enterprise, multidisciplinary services, having at least three of the following professions employed in the OHS unit: doctor, nurse, occupational hygienist, ergonomist, social worker and psychologist. In these services, all doctors except one had specialized in occupational medicine for at least 1 year.

The other locations had external or internal doctors,

Table 2. Organizational structure of the OHS at the different locations of a multinational company (*n* = number of locations)

Organization of OHS	<i>n</i>	Localization of enterprise (number and type of locations in parentheses)
A Inter-enterprise, multidisciplinary service	8	Belgium (three production units and two distribution centres) France (one distribution centre) Sweden (one distribution centre) The Netherlands (one distribution centre)
B External doctor (part time) and internal nurse (full time)	6	UK (three production units) France (one production unit) Hungary (one production unit) Poland (one production unit)
C External doctor (part time) and external nurse (part time)	2	Spain (two production units)
D Internal doctor (full time)	1	Turkey (one production unit)
E External doctor (part time)	1	Germany (one distribution centre)
No OHS	2	UK (one distribution centre) Italy (one distribution centre)

most of them in combination with internal or external nurses (Table 2). Of these doctors, only 1 in 10 had at least 1 year of specialization in occupational medicine, while two of them were attending advanced courses within this field at the time of the assessment. The external doctors and nurses were individual practitioners working part time for the company. The internal doctors and nurses were employed full time by the company. One of the OHS in Belgium served two locations. Two of the distribution centres had no provision of OHS.

The activities of the OHS during the preceding 3 years

Curative services for non-occupational diseases

Curative services for non-occupational diseases, including vaccination programmes, were provided to a low degree (<10% of their total time) in locations affiliated with the inter-enterprise services in Belgium, France, Sweden and The Netherlands (Figure 1). At most of the other locations, the OHS personnel spent >20% of their time on this activity (Figure 1).

Curative services for occupational diseases

These services were provided at most locations and included treatment of occupational diseases/injuries, first aid and involvement in rehabilitation/resettlement of workers. Some of the inter-enterprise services were restrictive in this type of treatment (Figure 1).

Surveillance of workers' health in relation to work

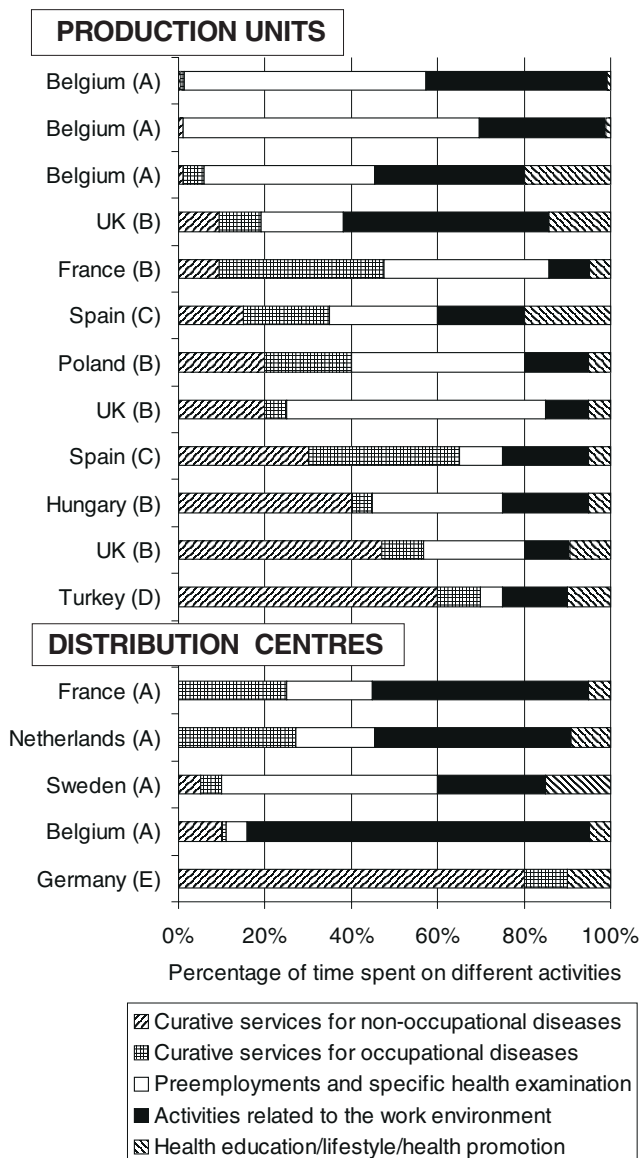
At most locations, the OHS carried out pre-employment health examinations and periodic examination of selected workers judged to be exposed to risks (Figure 1). Exposure to noise, dust, chemicals and ergonomic strain were used as selection criteria for periodic examinations. However, a strategy for systematic selection of risk groups based on risk assessments was missing at several locations.

The OHS personnel at the production units stated that the most commonly detected work-related disorders were upper-limb disorders, hearing reductions, skin abrasions and irritative dermatitis. At the distribution centres, the most frequently detected disorders were musculo-skeletal problems in the back, shoulders and arms.

Pre-employment examinations were carried out either before or after the workers had signed the work contract. Four locations did not provide pre-employment examinations.

The OHS at most locations provided a health examination when workers returned after more than 3 weeks sick leave.

Figure 1. The OHS representatives' stipulation of how much time they had spent on different activities during the previous 3 years in a multinational company. Time is expressed as a percentage of their total working hours for the location. Geographical location is indicated by name of the country. Types of OHS refer to the organizational structure of the services. (A) Inter-enterprise, multidisciplinary service. (B) External doctor (part time)/internal nurse (full time). (C) External doctor (part time)/external nurse (part time). (D) Internal doctor (full time). (E) External doctor (part time).



Activities related to the working environment

Surveillance of the working environment, advice on the control of hazards and advice on planned changes in the working environment constituted a considerable fraction of the time (25–50%) spent by the inter-enterprise OHS (Figure 1).

Services made up of individual external doctors and internal/external nurses generally spent less time on these

topics (Figure 1). At these locations, surveillance of noise, dust, ergonomics, etc. was often carried out by other, external consultants. In many cases, the OHS were not adequately informed about the results from such surveillance.

With few exceptions, the OHS were rarely involved in the development of strategies for occupational health programmes or in the planning of new workstations/work organization. Input from OHS on these topics was most often given at health and safety meetings which were arranged on regular basis at 14 of the 20 locations. Advice on the control of hazards in the working environment was mainly given to individual workers rather than to groups of workers.

Health education and lifestyle

The OHS were involved in various health promotion activities such as smoking cessation, AIDS awareness, healthy diet, physical activity, etc. About 1–20% of their total working time was spent on such activities (Figure 1). Training of first aiders was mainly provided by other, external companies.

Total activity profile

Figure 1 shows considerable variation in activity profiles between the different services. In this figure, the two locations in Belgium that are affiliated with the same OHS (one production unit and one distribution centre) are combined into one location, which is found at the top of Figure 1.

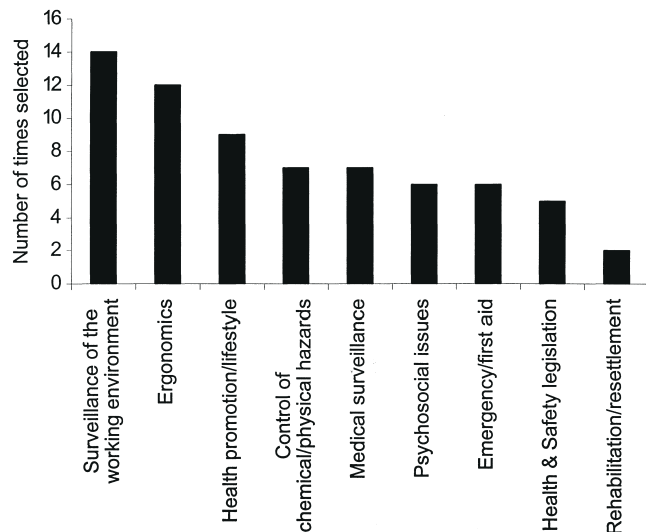
Generally, the following associations are apparent. OHS spending much of their time on activities related to the working environment spend little time on curative services. This profile was shown for the inter-enterprise, multidisciplinary services in Belgium, France, Sweden and The Netherlands. Three production units and five distribution centres were affiliated with this type of OHS.

OHS that are not closely involved in activities related to the working environment spend more of their time on curative services for non-occupational diseases. With few exceptions, this profile was apparent for the services made up of individual external doctors and internal/external nurses. Nine production units and one distribution centre were affiliated with this type of OHS.

Selection of in-service/training courses

Courses in surveillance of the working environment and in ergonomics had the highest priority for the OHS representatives (Figure 2). Surveillance of the work environment had the highest priority for OHS representatives from services having both preventive activity and curative activity profiles (data not shown).

Figure 2. In-service training courses that OHS representatives from the 18 locations in a multinational company would like to attend. The results are presented as the total number of times that each of the courses was selected.



Discussion

This baseline assessment might be described as an initial audit in which the organization and activities of the OHS have been assessed using the ILO Convention and Recommendation on OHS as a standard. Agius *et al.* [4] have defined an initial audit to consist of observing practice, measuring the variations in practice, and thence debating and researching an appropriate standard. Generally, audits in occupational health can be classified into Donabedian's three categories of structure, process and outcome for health care systems [13]. An assessment of the input/structure includes a description of staff, financing and means of the OHS, whereas an assessment of the processes describes the range of activities provided by the OHS [14]. Several outcome parameters of OHS have been suggested, e.g. change in knowledge, attitudes, working conditions, work methods, work behaviour and incidence of work-related diseases [14]. We have restricted our audit to address some selected characteristics of the structure and process categories.

According to the multinational statement of the ILO Recommendation, the OHS of a national or multinational enterprise should provide the highest standard of services to the workers in all its establishments [11]. The company participating in the present project has, to date, mainly allowed local management to organize occupational health provision. The results from this assessment have confirmed the company management's perception of differential OHS provisions at the various locations.

Our discussion of activities carried out by the OHS is based on descriptive data from the structured interviews with OHS representatives and does not include any

objective evaluations of the quantity of the activities/processes. Thus, the stipulation of time spent on the different OHS activities should only be considered as indicative. The OHS representatives were, however, prepared to calculate the time spent on the different activities by first going through the list of possible OHS activities followed by additional questions. The list of activities might have biased the answers by indicating those we would expect from a well-functioning OHS. Summing up the actual number of activities, such as health examinations and workplace surveillances, could have given supplementary, quantitative information. However, the OHS providers had no system for easy access to these data.

The activity profiles for the inter-enterprise, multi-disciplinary services indicated a preventive approach to occupational health by focusing on surveillance of workers' health in relation to work and on activities related to improvement of the working environment. These services appear to be in closer compliance with the ILO Recommendation than most of the services made up of individual external doctors and internal/external nurses. The latter type of services spend more of their time on curative provision for occupational and non-occupational diseases. Moreover, they were rarely involved in the planning and follow-up of surveillance in the working environment conducted by other external consultants. If not involved in these topics, it might be more difficult to detect possible links between exposure to occupational hazards and health impairment in order to recommend control measures. Thus, the OHS with an apparently curative profile should generally be encouraged to focus more on the preventive issues of occupational health. The results from the questionnaire on in-service courses revealed that the OHS personnel gave preference to training in surveillance of the working environment, indicating a need for more competence in this subject.

The hazard identification and the range of work-related disorders showed that the working environments in the production units were more complex than in the distribution centres, thus indicating that the potential for preventive activities was highest in the production units. However, at several of the production units, the OHS consisted of individual doctors and nurses who spent very little time on the preventive issues of occupational health compared to the time spent on the provision of curative services. This profile was typical for the OHS where the doctor had no specialization in occupational medicine. In contrast, most of the OHS affiliated with the distribution centres were inter-enterprise, multidisciplinary services, where the doctor had specialized in occupational medicine. These OHS provided a broader scope of activities and seemed to a greater extent to be able to meet the needs of the locations.

The variations in the organizational structures of the OHS reflect general differences in the organization of

OHS in the countries involved in the study. In countries such as Belgium, Sweden and The Netherlands, the OHS were often organized into multidisciplinary teams serving a number of enterprises [15]. They should primarily be focused on the assessment of possible connections between exposure to occupational hazards and health impairment, and propose measures to improve working conditions [15]. On the other hand, one of the obligations for the OHS in Turkey is to provide general curative services for the workers [16]. Thus, the geographical localization of the company's units seemed to be an important determinant for the type and activity profile of the OHS.

In general, OHS audits should result in the implementation of changes in order to meet standards [17]. Other studies have defined priorities for improvements of OHS based on various methods such as an evaluation of customer satisfaction [9], quantitative medical audits [13] or compliance with international standards [12]. Our study is in line with the method used by Muto [12], who used the ILO Recommendation as a standard, with no attempt to evaluate the quality of the services.

Our form of assessment, structured as an initial audit, has proved to be a useful tool for collecting baseline information about the local providers of OHS in the multinational company. By using the ILO Recommendation as a standard, the assessment has clarified the status of the OHS providers and the potential for improvements to the services. After implementation of measures to comply more closely with the ILO Recommendation and with the needs of the locations, the next step should be an evaluation of quality with regard to the outcomes of selected OHS activities.

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