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ΤΟ ΒΗΜΑ ΤΟΥ ΑΣΚΛΗΠΙΟΥ

VEMA OF ASKLIPIOS

JANUARY-MARCH 2003 VOLUME 2 No 1

QUARTERLY EDITION BY THE 1st NURSING DEPARTMENT
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Η ηθική των μεταμοσχεύσεων — The ethics of transplantation

Η συμβολή των υπηρεσιών υγείας στην προαγωγή της υγείας — Contribution of health services in health promotion

Ενδονοσοκομειακές λοιμώξεις. Νομική προσέγγιση — Hospital infections. Legal approach

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Καταγραφή επαγγελματικών παθήσεων στην Ελλάδα — Occupational diseases report in Greece

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Original paper

Occupational diseases report in Greece
A prediction through comparison of registries in other European countries

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Key words: *Occupational disease, surveillance, occupational medicine, Greece, European Union*

Aim **To assess the burden of underreporting occupational diseases in Greece.** *Material-Method* **Data were collected for the period under study (1996–1999) on employment and occupational diseases registered officially in European countries. Under the assumption that health hazards at work are similar, a prediction of the possible size of underreporting was estimated.** *Results* **Approximately 2500 job-related diseases are potentially not reported in Greece annually compared to 71 requests for pensioning (1997) due to occupational illness referred to the Social Insurance Institution. In agricultural sector more than 200 cases and in construction industry more than 250 are estimated as the potential burden of underreporting. From another point of view, occupational diseases of the skin, of respiratory system and hearing loss may account for 400, 300 and, 350 cases, respectively. The officially recognized cases in period under study were around 30, 25, and 2, respectively.** *Conclusions* **The fact that occupational diseases are not reported means deficiencies on surveillance system rather than low incidence. In Greece many reasons account for this lack of reporting. Increased awareness and political decision making could restrict this underreporting of occupational diseases.**

Λέξεις ευρετηρίου: *Επαγγελματική πάθηση, επιτήρηση και καταγραφή, ιατρική της εργασίας, Ελλάδα, Ευρωπαϊκή Ένωση*

Περίληψη **Καταγραφή επαγγελματικών παθήσεων στην Ελλάδα. Μία πρόβλεψη βασισμένη στα δεδομένα καταγραφών ευρωπαϊκών χωρών.** Ε.Χ. Αλεξόπουλος,[1] Φ. Χαριζάνη,[2] Α.Α. Μπαρμπαρή,[3] Χ. Κουτής.[4] *[1]Δρ Ιατρός Εργασίας, Ελληνικά Ναυπηγεία ΑΕ, Σκαραμαγκάς, [2]Επίκουρη Καθηγήτρια, Τμήμα Δημόσιας Υγείας, ΤΕΙ Αθήνας, [3]Τελειόφοιτη σπουδάστρια, Τμήμα Δημόσιας Υγείας, ΤΕΙ Αθήνας, [4]Καθηγητής, Τμήμα Δημόσιας Υγείας, ΤΕΙ Αθήνας, Greece. Vema of Asklipios 2003, 2(1):37–43. Σκοπός* **Σκοπός της παρούσας μελέτης ήταν να αποτιμηθεί το πιθανό έλλειμμα καταγραφής των επαγγελματικών παθήσεων στην Ελλάδα.** *Υλικό-Μέθοδος* **Συγκεντρώθηκαν στοιχεία για την υπό μελέτη χρονική περίοδο (1996–1999) από την Εθνική Στατιστική Υπηρεσία και από το Διεθνές Γραφείο Εργασίας (ILO) σχετικά με το εργατικό δυναμικό της Ελλάδας και άλλων Ευρωπαϊκών χωρών και από επίσημους φορείς καταγραφής επαγγελματικών παθήσεων όπως οι: Work Environment Authority της Σουηδίας, Institute of Occupational Health της Φινλανδίας, Total Occupational Diseases File of Ministry of Labour and Social Affairs της Ισπανίας, Federal Institute for Occupational Safety & Health της Γερμανίας, Center for Occupational Diseases της Ολλανδίας, Surveillance of Work-related and Occupational Respiratory Disease & Occupational Physicians Reporting Activity & Dermatologists της Μ. Βρετανίας. Με βάση τους δείκτες επίπτωσης επαγγελματικών παθήσεων που υπολογίστηκαν και την παραδοχή ότι οι συνθήκες εργασίας δεν διαφέρουν σημαντικά στις Ευρωπαϊκές χώρες, επιχειρήθηκε μια εκτίμηση των «αναμενόμενων» επαγγελματικών παθήσεων για την Ελλάδα.** *Αποτελέσματα* **Περίπου 2500 επαγγελματικές παθήσεις φαίνεται να μη δηλώνονται ετησίως στην Ελλάδα, σε σύγκριση με τις 71 αιτήσεις (1997) για συνταξιοδότηση λόγω επαγγελματικής νόσου που κατατέθηκαν στο ΙΚΑ. Περισσότερες από 200 περιπτώσεις επαγγελματικών παθήσεων**

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στον αγροτικό τομέα και πλέον των 250 στις κατασκευές υπολογίζεται ότι διαφεύγουν καταγραφής. Από διαφορετικό πρίσμα, μια μέση εκτίμηση του ελλείμματος καταγραφής υπολογίστηκε σε 400 περιπτώσεις επαγγελματικών δερματοπαθειών, 300 πνευμονοπαθειών και 350 βαρηκοΐας. *Συμπεράσματα* **Ελάχιστα επαγγελματικά νοσήματα καταγράφονται στην Ελλάδα και γι' αυτό δεν ευθύνεται η χαμηλή επίπτωση αλλά η ανυπαρξία συστήματος καταγραφής. Ο εκσυγχρονισμός του νομοθετικού πλαισίου και του συστήματος καταγραφής των επαγγελματικών παθήσεων μέσα από ενδελεχή μελέτη των ιδιαιτεροτήτων της υπάρχουσας κατάστασης πρέπει να αποτελεί προτεραιότητα και κομβικό σημείο για την προαγωγή της υγείας και ασφάλειας στο χώρο της εργασίας.**

Introduction

National statistics and registries show that occupational diseases are reported infrequently compared to occupational injuries. Many reasons account for that including deficiencies of social insurance system that do not compensate appropriately for occupational diseases, lack of public and workforce awareness, other political and social priorities, occupational health structure and lack of expert professionals.[1]

The terms occupational or work-related ill health cover the wide range of diseases and disorders which could be attributable to a person's work. Their effects range in severity from mild, short-lived symptoms to serious and/or long-lasting conditions. The link to work is sometimes clear, as in lead poisoning, since the exposures needed to cause it are highly unlikely to be found in a non-occupational context. However, most of the conditions which can arise from work exposures can also be caused by many other factors, sometimes interacting with each other. For example, back problems may be provoked by poor posture at work or at home, while stress may result from work pressures or family problems.[2]

Another special feature of occupational ill health is that, unlike injuries and fatalities, it may not occur immediately after exposure to the relevant hazard. There is typically a period of latency between hazardous exposure and the appearance of actual harm, which may range from a few hours in case of infectious diseases to several decades for types of cancer. When latency period is prolonged, evaluation of exposure may be especially difficult.[2]

The multifactorial nature of ill health, combined with the effects of latency, make very hard the effort to attribute individual cases of ill health to harmful exposure in work, or to determine whether the illness was "caused" by these factors or "made worse" by them. Moreover, different approaches could be used by different people (e.g. occupational physicians, other health care professionals, employers and individual workers) reflecting their own perspectives, knowledge and awareness. Therefore occupational ill health cannot be defined or measured in a single, straightforward way. Judgements about the patterns of exposure likely to be causal may be made in legal implications or claims for compensation but these decisions have little value in determining the true extent of diseases caused by work, not least because of the absence of reliable exposure data.[2,3]

Aim of this study is to predict the potential lack on reporting and recognition of occupational diseases in Greece through the comparison with European countries, given the assumption that true incidence is not markedly different.

The comparison of data on occupational diseases has several limitations. Even though a detailed description of approach follows we have to keep in mind that these data are collected in a different way in each EU member state, there are differences in the definition of diseases, in the system of notification, examination and approval of claims and, in compensation.[4,5]

Material and method

This article is based on published information on occupational diseases registered officially in European Union countries. The way of reporting occupational diseases in each country under study differ.

In Sweden the report on work-related diseases is based principally on work injuries included in occupational injury register (ISA) at the Swedish Work Environment Authority (SWEA: former National Board of Occupational Safety and Health). That system is based on work injury reports received by the Social Insurance Office and registered at the Work Environment Inspectorate and the head office of SWEA. Data for the period under study were collected from SWEA.[6]

The Finnish Register of Occupational Disease is a source of statistical information for occupational diseases and helps the research in the sector of occupational health in Finland. The registered data come from two sources, one is the insurance

institution, which inform for every recognized occupational diseases and for every suspected occupational disease. The second source is doctors, who are obligated to declare to the local Labor Inspection every disease, which might be relevant to the occupational environment. The registration includes all the employers and the farmers, while the self-employers are merely included.[7] Data collected from reports of Finnish Institute of Occupational Safety and Health (FIOH) and the Statistics of Finland. In addition research data were collected from research institutes in the field of occupational safety and health as well as the funding organizations in this area.[8]

In Spain Occupational Official statistics are based on the information gathered from Work Accidents and Occupational Diseases registers. The information is treated by the General Sub-direction of Social and Occupational Statistics, belonged to the Ministry of Labor. Yearly, the whole-computerized purified information reaches the National Institute for Occupational Safety and Health (INSHT) in order to obtain more detailed analyses. Moreover, experiences and options of many organisms, technicians from the regional Occupational Safety and Health Services, trade unions, Social Partners and Work Accidents Insurance Companies, had been taken into account in order to correct and complete the first estimations. Data on work-related health damages were collected also in a basis of National Surveys of Work Conditions. Data used from the national report.[9]

In Italy report of a disease related to the working environment, was made by the employer or the doctor to the Insurance Institute (INAIL). INAIL covers most employees except workers in railways and maritime. A disease is considered an occupational one if it is included in the 1975 "closed" list: table of occupational diseases in industry, table of occupational diseases in agriculture.[10] Data related to occupational diseases collected from the Instituto Superiore per la Prevenzione e la Sicurezze del Lavoro (ISPESL).

The government in a statutory ordinance lists occupational diseases in Germany. The inclusion of a disease is not determined by social policy considerations, but rather it depends on whether the disease has been caused by particular factors (certified by medical research) and to the degree that certain groups of people are overexposed through their work compared to general population. If such information exists with respect to a particular illness then the ordinance will be extended accordingly. Occupational diseases are registered with the accident insurance funds or the Lander authorities responsible for occupational safety and health. The accident insurance funds of the Lander authorities inform each other on a mutual basis about registration entries. Doctors, health insurance funds and employers age obliged to notify the authorities in a suspicion of occupational disease. Insured persons, their families and other agents may also report a suspected case. This procedure means greater sensitivity of the system preceding the evaluation of notification. Thus the number of notifications is relatively high in comparison with that of recognized occupational diseases. Each suspected case to be reported is counted only once for a single insured person, even when the same occupational disease is reported by several instances. In those reports referring merely to the danger that an occupational disease might arises, the ones that have resurfaced or worsened are not counted. Every notification results in an administrative decision about whether the suspected case can be verified and whether an illness can be recognized as an occupational disease. The recognition of an occupational disease presupposes that the insured person must be endangered by the harmful effects of his/her insured activity and a causal relationship between the harmful effects and the disease exist. Furthermore, for a series of illnesses additional legal requirements must be fulfilled. Data were collected from the national report.[4]

In Netherlands the registration of occupational diseases is made by the Dutch Center for Occupational Diseases (Nederlands Centrum voor Beroepsziekten -NCvB). The organization of the registration of occupational diseases by the Occupational Health Services (OHSs) in the Netherlands was officially assigned by the Ministry of Social Affairs & Employment to the Registration Bureau of the NCvB. In addition to the central registration system, which imposes a legal obligation on the OHSs to notify occupational diseases, the NCvB has also set up a number of other registration projects in order to provide supplementary information in this field. The registration projects are: (a) occupational dermatoses surveillance which measures occupational skin diseases, in collaboration with the Netherlands Expert Center for Occupational Dermatoses (NECOD). Each month the participating dermatologists send a card to the NCvB stating the occupational skin diseases that they have identified in the previous month (b) surveillance for occupational lung diseases (in collaboration with Netherlands Kenniscentrum Arbeid en Longaandoeningen (NKAL, work-related lung diseases). Registration of specific work-related diseases take place in other stations such as the Netherlands Kenniscentrum Arbeid en Psyche (NKAP, psychological diseases), the Netherlands Kenniscentrum Arbeid en Klachten Bewegingsapparaat (NKAB, locomotor apparatus) and also by groups of occupational physicians in specific occupational settings. Data were collected from the Annual Report for 2000.[11]

A single source of information is not available in Great Britain on the nature and full extent of occupational or work-related ill health. Health and Safety Executive's (HSE's) policy is to make the fullest use of a range of sources, and develop new ones where necessary. Different sources of information usually give varying sized estimates of the extent at work-related disease, reflecting differences in severity and the extent to which cases have been attributed to work causes. The statistics are based on five main data sources, described briefly.

SWI: household surveys of self-reported work-related illness yield estimates of the number of people who say that they have conditions, which they think, have been caused or made worse by work. They are subject to sampling error.

ODIN: voluntary reporting of occupational diseases by specialist doctors in the Occupational Disease Intelligence Network. These surveillance schemes are co-ordinated by the University of Manchester with HSE funding. They include

schemes known as SWORD (Surveillance of Work-related and Occupational Respiratory Disease), EPIDERM (Occupational Skin Surveillance Scheme Reported by Dermatologists), OPRA (Occupational Physicians Reporting Activity), SIDAW (Surveillance of infectious disease at work), SOSMI (Surveillance of occupational stress and mental illness), OSSA (Occupational surveillance scheme for audiological physicians), MOSS (Musculoskeletal occupational surveillance scheme), which have been added under the umbrella scheme known as ODIN (Occupational Disease Intelligence Network). These schemes count new cases which are caused by work in the opinion of the specialist doctor who sees them.

The Industrial Injuries Scheme (IIS) operated by the Benefits Agency on behalf of the Department for Work and Pensions for well-established occupational diseases especially new cases of disabled industrial workers.

RIDDOR: statutory reports by employers under HSE's Reporting of Injuries, Diseases and Dangerous Occurrences Regulations.

Death Certificates (DCs) are useful for monitoring the most serious forms of some types of occupational lung disease including cancers (such mesothelioma), but are of limited use for other conditions.

There are also a few more specific sources, which provide data limited to certain conditions (e.g. stress) or hazards (e.g. lead exposure). Information from all these sources are provided to the national focal point, from which data were collected.[2]

Additional data were collected from East European Countries by Estonian, Romanian and Hungarian Focal Points of the European Agency for Safety and Health at Work.[13,14]

In Greece the Social Insurance Institute (IKA) covers almost 50% of the Labor Force and is the referral point for requests on pensioning due to occupational illness. Claim was made by employees while notification of suspected cases was made from employers and physicians. There are not other surveillance schemes, which could provide additional information on the occupational diseases.[15]

Data for the period under study (1996–1998) on employment by economic activity were also collected.[16] In any case frequency rates of occupational diseases per 1000 or 10000 workers were estimated.

Results

Table 1 shows the total number of recognised occupational diseases for four countries in the period under study. Frequency rates per 1000 workers were also estimated. The median rate was around 0.7. This remains constant when more than ten European countries included in the analysis with the prerequisite of available data, like Romania, Estonia and Hungary. Scandinavian countries reports on recognised cases was placed within the upper limit of those presented in the previous table.

Table 1. Occupational diseases in EU countries at 1997.

	Spain	Italy	Germany	Netherlands
Total employment (in thousands)	12765	20413	45805	7601
Occupational diseases	9640	4315	23432	4073
Frequency per 1000 workers	0.76	0.21	0.51	0.54

Taking into account that greek work force reached 3872 thousands in 1996, we based on reported frequency rates to calculate the least potential burden of unrecognised occupational diseases ranged from 700 to 2500. It's worth mentioning that numbers as high as 6500 disease-cases could be estimated by using other countries reported frequencies.

When only claims for recognition was taken into account the medium burden of underreporting overcome 6000 with a possible higher of more than 16,000 cases.

Another approach concerns reports on occupational diseases by economic activity. Three branches of economic activity were selected, because these sectors are comparable and well defined between countries and many data were available. Table 2 shows the frequency rates of occupational diseases by economic activity. It is worthmentioning that occupational diseases for Spain, Italy, Germany and Netherlands refer to recognised/approved cases, while those for Finland refer to claims for recognition. So, the higher frequency rates of Finland could be explained. In agricultural sector more than 200 cases and in construction industry more than 250 are estimated as the potential burden of underreporting.

From another point of view, reports on occupational diseases by type of disease were considered. Tables 3–6 shows the frequency rates of occupational diseases. Occupational diseases of the skin, of respiratory system and hearing loss may account for 400, 300 and, 350 cases, respectively. The officially recognized cases in period under study were around 30, 25, and 2, respectively.

The last approach was in a literature way. We collected data from the Greek National Statistical Office for the period under study concerning patients discharged by category of diseases and sex for the year 1997 (table 7). The age group include pensioners but most of presented diseases required long latency periods, so we did not exclude them. Then, we find from several sources the estimated percentage attributed to occupation, in order to apply these percentages to the true national

Table 2. Occupational diseases by economic activity in EU countries.

	Spain 1997	Italy 1997	Germany 1997	Netherlands 1999	Finland 1996
Agriculture, fishing etc. Sector (in thousands)	1067	1245	1049	230	159
Occupational diseases	260	107	697	59	1114
Frequency per 1000 workers	0.24	0.09	0.66	0.26	7
Mining & manufacturing sector (in thousands)	2498	4906	8677	1120	438
Occupational diseases	6546	1957	13021	1220	2164
Frequency per 1000 workers	2.62	0.4	1.5	1.09	4.94
Construction sector (in thousands)	1243	1564	3271	471	118
Occupational diseases	694	746	3500	588	591
Frequency per 1000 workers	0.6	0.48	1	1.25	5

Table 3. Respiratory and skin occupational diseases in EU countries.

	Spain 1997	Italy 1997	Germany 1999	Netherlands 1998	Finland 1996
Total employment (in thousands)	12765	35805	7601	27116	2158
Respiratory diseases	314	7595	93	3009 (SWORD/OPRA)	1008
Frequency per 10000 workers	0.25	2.12	0.12	1.11	4.81
Skin diseases	1287	2319	230	579 (EPIDERM/OPRA)	805
Frequency per 10000 workers	1	0.65	0.3	1.69	3.84

Table 4. Hearing damage due to working conditions in EU countries.

	Spain 1997	Germany 1999	Netherlands 1999	Finland 1996
Total employment (in thousands)	12765	35805	7601	2158
Hearing damage	120	7976	805	719
Frequency per 10000 workers	0.094	2.22	1.06	3.43

Table 5. Musculoskeletal diseases due to working conditions in EU countries.

	Spain 1997	Netherlands 1999	United kingdom 1998
Total employment (in thousands)	12765	7601	27116
Musculoskeletal diseases	3806	1831	8087 (MOSS/OPRA)
Frequency per 10000 workers	2.98	2.4	2.98

data. It is more than 25,000 cases could be attributed to occupation only for 1997 in Greece based on sound scientific data without taking into account musculoskeletal disorders, skin diseases and deafness which comprise the majority of work-related disorders.

Table 6. Lung cancer and malignant mesothelioma as occupational diseases in EU countries.

	Germany 1997	United Kingdom 1998
Total employment (in thousands)	35805	27116
Lung cancer	714	112 (SWORD/OPRA)
Frequency per 10000 workers	0.2	0.041
Malignant mesothelioma	567	701 (SWORD/OPRA)
Frequency per 10000 workers	0.16	0.26

Discussion

As already mentioned the comparison of data on occupational diseases has several limitations. These data are collected in a different way in each EU Member State and there are differences in the definition of diseases, in the system of notification, examination and approval of claims and, in compensation.[4,5]

Occupational disease is linked to the exercise of an occupation, and is related to the probability that an occupational impairment may occur. Thus the exposure-effect relationship indicating the severity, and the exposure-response relationship indicating the probability, become important elements for the determination of occupational diseases. The diagnosis of occupational

Table 7. Estimated annual average number of diseases attributable to occupational exposure. Morbidity, Greece 1997.

Causes of disease	No of diseases		Estimated percentage to occupation[1–5]		No of diseases attributed to occupation		Total no of diseases attributed to occupation
	Men	Women	Men	Women	Men	Women	
Cancer	66356	56234	6%[1,2]	6%[1,2]	3981	3374	7355
Lung cancer	13262	1759	15%[1,3]	5%[3]	1989	88	2077
Liver cancer	1397	573	4%[3]	1%[3]	56	6	62
Bladder cancer	5159	874	10%[1,3]	5%[3]	516	44	560
Prostate cancer	2946	–	1%[3]	–	29	0	29
Stomach cancer	2358	1384	15%[1,3]	5%[3]	354	69	423
Leukemia	2364	1519	10%[3]	5%[3]	236	76	312
Chronic obstructive Pulmonary diseases	18685	10589	10%[1,2,4]	10%[1,2,4]	1868	1059	2927
Occupational asthma	3580	3781	10%[1,2,4]	10%[1,2,4]	358	378	736
Pneumoconioses	194	226	100%[3]	100%[3]	194	226	420
Coronary heart disease	81278	44507	7.5%[2]	7.5%[2]	6096	3338	9434
Cerebrovascular disease	14484	10381	7.5%[2]	7.5%[2]	1086	779	1865
Total No. of diseases attributed to occupation					16763	9437	26200

Refers to the age group:15–79 years old (men and women)

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diseases requires specific knowledge, thorough patient examination, investigation of the working environment and epidemiological data. In addition, the factor of individual susceptibility plays an important role in the occurrence of the disease, its clinical picture, the measures of prevention and the efficacy of the treatment. Hence it is not an easy case the recognition of an occupational disease. Most important it requires a safe, secure and useful motivation for employee, doctor and employer besides legal obligations.

In our study, by comparison with foreign occupational disease statistics, there seems to be a considerable under-reporting in Greece. This could be explained by the fact that a registration system simply does not exist. The fact that occupational diseases are not reported means deficiencies on surveillance system rather than non existence of the problem.

It is widely accepted that the reported and estimated figures are considered to be an underestimate of the true burden since most occupational diseases are not readily identifiable with current reporting methods. This fact underestimate more the lack of surveillance occupational diseases in Greece.

An ultimate aim has to be to simplify the notification and registration analysis and presentation data. An effort has to be made to increase "electronic notification" via the website. An information campaign to encourage reporting discipline and increase knowledge of occupational diseases is needed.

Apart from the notification and registration of occupational diseases by occupational physicians, the Labour Administration (Labour Ministry, Labour Inspection, Institute of Social Security) has to use other instruments to track the incidence and spread of occupational diseases. The contribution of Health Administration (with the development of an occupational health information system for surveillance system and tools design, health workers training in Occupational Health), Social Partners (employers, trade unions), mandatory insurance organisations and, enterprises may be essential. Education and intensive communication among specialised occupational physicians and OHSs is also necessary.

In addition surveys may be important in order to find out companies representatives' assessments to their company's working environment but also to get an overview of employees' assessments.

It is difficult to predict a trend for future incidences of occupational diseases. Improved control technology, governmental regulatory activity to reduce exposure,

surveillance of diseases and risk factors, and vigilant use of preventive measures should, however, ultimately reduce occupational diseases.

The main aim of the national report is to guide both research and practical work on different levels including the workplace level and to help the decision makers to develop national programmes and set priorities which are the most important and useful for the development of working life in every country.

The national report has to offer policy-relevant information on the occurrence and spread of occupational diseases in the various occupational groupings and branches of commerce and industry. It also provides an overview of new scientific and social developments in prevention, early diagnosis, treatment and reintegration. The government authorities can use the information collected and presented for, among other purposes, laying the foundations for and testing the effectiveness of the sector agreements on health & safety. The report also contains important information for employers' and employees' organizations, OHSs and other organizations in the work and health fields. The report has to attract extensive media attention and has therefore made a significant contribution to putting the topic of occupational diseases on the political and social agenda. This is important, because occupational diseases are still a source of considerable damage in both economic and health terms, and drawing public attention to occupational diseases can lead to prevention.

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