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Inégalités dans la reconnaissance des maladies professionnelles en France

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Running head

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Abstract

Background

In France, complex cases of occupational disease (OD) are submitted to regional committees who are in charge of accepting, or rejecting, the claim. Their mean annual acceptance rate varies from one region to another, which may reflect differences in the cases, or discrepancies between committees. The objective of this study was to assess the comparability of the decisions of the committees on the basis of standardized cases.

Methods

Three experienced occupational physicians specialized in OD were asked to develop 28 clinical cases representative of claims for compensation usually seen in these committees. The cases, in the form of short vignettes, were submitted to the 18 French regional committees, asking if they would recognise each case as an OD.

Results

All committees participated. The acceptance rate (recognition of the case as an OD) varied, ranging from 18% to 70%. All the committees took the same decision for only 7 out of the 28 cases, but half accepted and half refused for 3 cases. For 10 cases, one quarter of the committees gave a decision different than the other 75%. The highest discordance rates were observed for the cases concerning musculoskeletal disorders and asbestos related diseases.

Conclusion

The committees take very different decisions in terms of recognition of OD, especially for the most frequently compensated OD in France, *i.e.* musculoskeletal disorders and asbestos related diseases. This is a major source of injustice for the employees who seek compensation and there is a need to develop methods to harmonize decisions between committees.

Key words

Occupational diseases. Workers' Compensation. Process Assessment (Health Care). Ethics

Résumé

Position du problème

En France, les demandes de reconnaissance en maladie professionnelle sortant du système des tableaux sont soumises à des comités régionaux qui doivent statuer sur l'acceptation ou le rejet de la reconnaissance. Le taux moyen de reconnaissance varie d'une région à l'autre, ce qui peut refléter des dossiers différents ou des variations entre les comités. L'objectif de cette étude était de comparer les décisions de ces comités sur la base de dossiers standardisés.

Méthodes

Trois spécialistes de pathologie professionnelle ont développé 28 cas cliniques représentatifs des dossiers examinés habituellement par ces comités. Les cas, sous la forme de courtes vignettes, ont été soumis aux 18 comités régionaux de reconnaissance des maladies professionnelles pour connaître leur décision sur chacun d'entre eux.

Résultats

Tous les comités ont participé. Le taux de reconnaissance (acceptation du caractère professionnel de la maladie) variait de 18% à 70% selon les comités. La décision était identique pour tous les comités pour seulement 7 des 28 cas, et elle était de 50% d'acceptation et 50% de rejet dans 3 cas. Pour 10 des 28 cas, un quart des comités prenait une décision discordante des autres comités. Le plus fort taux de discordance dans les décisions concernait les troubles musculo-squelettiques et les affections liées à l'amiante.

Conclusion

Les comités régionaux de reconnaissance des maladies professionnelles prennent des décisions très différentes en termes de reconnaissance des maladies professionnelles, en particulier pour les troubles musculo-squelettiques et les affections liées à l'amiante, qui représentent la grande majorité des dossiers qui leurs sont soumis. C'est une source importante d'inégalité pour les victimes de maladies professionnelles en France et il est nécessaire de développer des méthodes pour harmoniser les décisions.

Mots clés

Maladies professionnelles. Indemnisation des accidentés du travail. Évaluation de processus en soins de santé. Ethique.

Introduction

Occupational factors represent an important part of the global burden of disease and in 2015 1,086,000 deaths were estimated to occur globally due to occupational risks [1]. These included 489,000 occupationally related cancer deaths with important causes being asbestos (180,000), diesel engine exhaust (120,000), silica (86,000) and second-hand smoke at work (96,000). Occupational exposure to asthmagens was estimated to cause 42,000 deaths, with particulate matter, gases and fumes causing 357,000 (mainly chronic obstructive pulmonary diseases) and workplace injuries causing 204,000 deaths [2]. Furthermore, work-related morbidity and mortality not only results in suffering and hardship for the worker and his or her family but also it adds to the overall cost to society through lost productivity and increased use of medical and welfare services. The cost to society has been estimated at 2-14% of the gross national product in different studies in different countries [3].

According to the International Labour Organisation (ILO), occupational diseases (OD) are diseases having a specific or a strong relation to occupation, generally with only one causal agent, and recognised as such. In the European Union context, a case of occupational disease is defined as a case recognised by the national authorities responsible for recognition of occupational diseases [4].

However, the recognition systems (and particularly the content of national lists and the recognition criteria relating to the diagnosis, to the intensity of exposure, to the job done, etc.) differ markedly from one country to another. It is therefore difficult to compare national statistics of occupational diseases. A report published in 2015 and covering five European countries observed that the same diseases (musculoskeletal disorders (MSDs), hypoacusia, skin diseases and cancers) were involved in the largest number of recognition, but in different quantities [5]. The report noted a certain balance in Germany and Denmark, whereas MSDs were clearly predominant in France. There was accordingly a difference of 1 to 20 between

Germany and France, where MSDs account for 25 and 492 reports per 100,000 insured, respectively.

Apart from primary prevention, recognition and compensation of OD are major factors for reducing social inequities induced by these OD.

The French OD compensation was created in 1919, on the basis of a closed list. A complementary system was introduced in 1993, based on 18 specific committees in the different French Region, which have to decide for complex OD whether or not the claims can be recognised as an OD, and therefore compensated. The statistics of the decisions of these committees point out large discrepancies in the acceptance rate, ranging from 19% in Provence to 67% in Britany. However, the diseases, as well as the occupational risk factors, vary from one region to the other, according to the type of industries for example, and it is difficult to know if these discrepancies reflect real differences in the incidence of OD or differences in the process of recognition, which would lead to major social inequities.

Therefore, we performed a study to assess the regional differences in the French complementary system of recognition of OD on the basis of standardized cases.

Material and Methods

Compensation system in France

In France, all employees are covered by the Social Security system (SS), known as "compulsory general scheme" which is organized around four Branches, one of them being in charge of “Occupational Diseases" and "Occupational Injuries": the National Health Insurance Fund for Employees (*Caisse Nationale de l’Assurance Maladie*, CNAMTS) [6].

In the French OD compensation systems, the victim (or the victim’s beneficiaries) has to send to the SS the claim for recognition, backed up with a wage certificate and the descriptive medical certificate issued by the doctor who diagnosed the disease. On receipt of the claim for recognition, the SS opens an administrative and medical enquiry. It informs the employer, the occupational physician and the labour inspector about this claim.

Since 1919, there is a presumption of occupational origin (*i.e.* the worker does not have to prove the link between his disease and his professional activity and his disease is recognised as an occupational disease) if all the following criteria are met:

1. The disease is listed in one of the 115 tables in force attached to the Social Security Code (*e.g.* silicosis), and fulfil the medical criteria;
2. The job (or former job) of the patient is listed in the table concerning this disease as a job where the exposure to the risk factor is or was considered usual (*e.g.* sandblasting)
3. The length of time between cessation of exposure and onset of the disease is lower than the maximum latent period specified in the table (*e.g.* 7 days for asthma, 5 years for silicosis, 40 years for mesothelioma)
4. For some tables, there is also a minimum duration of exposure (*e.g.* 5 years for silica and silicosis or 10 years for asbestos and lung cancer).

In this case, the worker does not have to prove the link between his disease and his professional activity and his disease is automatically recognised as an occupational disease.

Since 1993, there is also a complementary system dealing with two different situations:

- Either the disease is listed in one of the tables but one or more criteria (criteria 2, 3 or 4) are not met;
- or the disease is not listed in one of the tables but may be the consequence of professional activity and cause to the victim a permanent disability of at least 25% or his/her death (*e.g.* laryngeal cancer with exposure to asbestos or kidney cancer with exposure to trichloroethylene).

In these two situations the SS prepares a medical and occupational record (with data on the disease and on exposures of the patient) and submits the record to an Occupational Diseases Recognition Regional Committee (*Comité Régional de Reconnaissance des Maladies Professionnelles*, CRRMP) whose decision imposes on the SS which passes it on to the victim. The CRRMP is a committee composed of a professor or assistant professor specialised in occupational diseases, an occupational physician from the regional branch of the ministry of labour, a physician from the SS and an engineer in occupational hygiene. There are 16 CRRMP in metropolitan France and 2 overseas, in charge for the claims for compensation in their geographical area. In 2016, they examined 16,898 files, with a mean of 30 files per half-day and per CRRMP.

Construction of the clinical and occupational situations.

In order to assess the comparability of the decisions of the CRRMP, three occupational physicians specialized in occupational diseases, and members of these CRRMP, were asked to develop 28 clinical cases representative of claims for compensation usually seen in the CRRMP. They were asked to specify for each situation (a) the disease; (b) the job or former job of the patient; (c) the duration of exposure and (d) the length of time between cessation of exposure and onset of disease. The clinical situations were presented in short vignettes.

Nineteen vignettes concerned a disease mentioned in one of the tables of OD, with only one of the criteria of the tables for that disease being out of the range of the table:

- 9 vignettes concerned a job different than the jobs specified in the corresponding table of OD;
- 5 vignettes concerned a duration of exposure lower than the criteria in the corresponding table of OD;
- 5 vignettes concerned a latent period longer than the criteria in the corresponding table of OD;

In addition, 9 vignettes concerned a disease not listed in one of the tables of OD.

The 28 vignettes are summarized in Table 1. They were submitted to the 18 CRRMP in March 2017, by the *Direction Nationale des Risques Professionnels* of the CNAMTS, with a deadline for answering in May 2017.

Submission of the vignettes to the CRRMP

The CRRMP were asked if they would recognise, or not, the case as an occupational disease.

For each vignette, we computed a "concordance index" (CI), as follows. If all the CRRMP accepted or refused the case as an occupational disease, the CI was 1. If 50% of the CRRMP accepted and 50% refused the case as an occupational disease, the concordance index was 0. In between, every 5% difference in the decisions of the CRRMP increased the CI by 0.1.

The data were collected and analysed with Excel.

Results

All the CRRMP from metropolitan France (n=16), and from La Martinique and La Reunion participated in the study, covering 99.02% of the French population.

Overall, the rate of positive (recognition of the case as an occupational disease) decisions was 38%, but this rate varied across the CRRMP, ranging from 18% in Auvergne to 70% in Britany (Table 2).

On the 504 clinical cases analysed by the CRRMP (28 clinical cases x 18 CRRMP), a decision was taken for 434 cases (86.1%). However, for 70 cases (13.9%), the CRRMP considered that there was not enough information to make a decision. This attitude was highly dependent on the CRRMP and whereas the CRRMP of Burgundy did not answer for 50% of the vignettes, the CRRMP from North East (*Nord Est*), from Normandy or from the North (*Hauts-de-France*) answered all the vignettes (Table 2). It was also dependent on the clinical case, and 8 CRRMP (44%) refused to give an answer for case 3, and 6 (33%) for cases 7 and 19.

Considering only the 434 cases for which the CRRMP took a decision, a perfect agreement (acceptance or refusal) was observed for 7 out of the 28 cases (cases 2, 4, 13, 14, 18, 23 and 24), but wide variations (concordance index = 0, *i.e.* half of CRRMP accepted and half refused) were observed in 3 cases (cases 1, 3 and 7) (Table 1). For the 21 other cases, the concordance index varied but was lower than 0.5 in 7 cases. Therefore, for 10 cases (36% of the cases), one-quarter of the CRRMP gave a decision different than the other 75%, and for 10 cases, the level of concordance was very high (all the CRRMP or all but one took the same decision).

The reason (*i.e.* criteria which would have been necessary for automatic recognition and which is not fulfilled) why the file would have been submitted to the CRRMP had a mixed influence (Table 1).

The acceptance rate was high for the cases concerning a lower exposure, or a longer latent period, that what was needed according to the official tables, with a rate of 71% and 82%, respectively. On the opposite, the acceptance rate was low for the cases where the job was not mentioned in the table, or when the disease was not in the list of occupational diseases, with a rate of 29% and 29%, respectively. However, the concordance indexes were, on average, 0.73, 0.69, 0.68 and 0.77 for these four situations, respectively.

On the other hand, the homogeneity of the decisions depended strongly on the type of disease (Table 1). For the 5 cases of work-related upper limbs disorders (cases 8-12), the mean CI was 0.5 and 6 regions had an acceptance rate equal or above 60% whereas 10 regions had an acceptance rate equal or lower than 20%.

For the five cases on asbestos-related diseases (cases 1, 3, 4, 5), the discrepancies were even higher and the CI was 0 for cases 1 and 3 (half of the CRRMP accepted and half refused).

For the two cases of occupational noise-induced hearing loss, two regions refused the occupational disease for both cases whereas 8 regions accepted both.

For the 5 cases (cases 15-19) of herniated disc, 3 regions accepted only one case out of 5 and two regions accepted the 5 cases.

For the diseases that are not mentioned in the official tables, the homogeneity among the regions was better, with a CI of 0.77 (Table 1). However, 7 regions accepted only one case out of 9 and 5 regions accepted 4 or 5 cases.

Discussion

The main result of this study is that the regional committees in charge of recognition and compensation take different decisions on similar standardized clinical cases and the highest discordance rates are observed for the cases concerning musculoskeletal disorders and asbestos-related diseases, which are the leading causes of compensated occupational diseases in France.

The two main limits of our study are short description of the cases in the vignettes submitted to the CRRMP and the fact that, in 70 situations (13.9%), one of the CRRMP refused to give an answer on a vignette, considering that they had not enough information on the exposure to occupational risk factors.

Each meeting of the CRRMP involve a high number of cases (approximately 30 per half day) and it was considered unrealistic to build long cases, and to hope that all CRRMP will answer.

Furthermore, in many cases, the level of information, especially for remote exposure, is scarce. For example, for cases such as those described in situations 1, 3 or 5, it is usually impossible to obtain information on remote exposure, apart from the job description. The committees have then to rely on the experience of industrial hygiene engineers and specialists in occupational diseases, using sometimes job-exposure matrices. This is also the case for more recent exposures, but for jobs such as childminder or housemaid, which are performed at home or in several different workplaces. Therefore, the vignettes we used were representative of many files that are submitted to the CRRMP.

Another limit is that we could not compare the decisions of the CRRMP to a gold standard, *i.e.* to a clear decision on whether or not each case was really in relation to the job. However, our purpose was not to investigate if the decisions were relevant, but if they were discrepant.

Furthermore, an occupational disease is a legal concept, created for insurance purposes (and not prevention purposes). Its definition corresponds to legal, not medical, criteria. The occupational disease insurance system thus reflects a social and political compromise [5].

Such a system exists in nearly all European countries. It takes the form of a more or less specific insurance organization depending on the country: a separate organization, different financing from that of the other national insurance organizations, and special benefits for the victims of occupational injuries.

We already know the poor performance by physicians in diagnosing and reporting occupational diseases [7], and the fact that numerous cases of work-related diseases are not registered as such with the appropriate insurance organizations, due to a lack of reporting by the victim, their doctor or their employer [5].

We demonstrated in our study that a regional system, relying on different, although highly skilled, people does not ensure homogeneity in the recognition and compensation of occupational diseases.

This leads to injustice and prejudice for the workers since, for the same disease and the same exposure, some will get benefits provided by the occupational risk insurance system, and some will not. The prejudice relies in part on the fact that the benefits provided by the occupational risk insurance system are more advantageous in France (like in many countries) than those paid for illness or disability/death.

Furthermore, the definition of risk prevention priorities needs a reliable count of occupational diseases, which is a necessary tool for the authorities to target risk prevention efforts and focus on the areas in which the challenges are greatest. Therefore, regional disparities can have an impact, not only on workers asking for compensation but on all workers.

Therefore, there is an urgent need to harmonize the way French regional committees take their decision in order to ensure equal treatment of workers victim of an occupational disease in

France. Since there is rarely an obvious and undisputable answer to the question “is it an occupational disease?”, especially for the files that are submitted to the CRRMP, it is not possible to assess the validity of the decisions taken, and therefore to identify the “best” or “worse” CRRMP. The first step toward harmonization should be to organize on a periodical basis a meeting of all the physicians who are members of those CRRMP and discuss some files, to compare the decisions that each one would have taken. The second step could be to integrate to these meetings an expert of each disease which is discussed, to improve the quality of answers. However, expert advice should explicitly refer to up-to-date research literature, since experts sometimes give unreliable answers [8]. The last step could be to improve the quality of the answers provided by the CRRMP, and therefore probably to improve the homogeneity of the answers as a collateral benefit. A database of up-to-date evidence in terms of occupational and environmental determinants of the most frequent occupational diseases should be built and maintained. It should include mostly epidemiological studies [9], and should be available online for all members of the CRRMP. However, all the diseases that are included in the files submitted to the CRRMP cannot be predicted. Therefore, all members of the committees should have access online to PubMed, ideally using search filters that allow using the best search strings in terms of precision and recall for the identification of occupational risk factors [10]. Finally, all these efforts could possibly be useless if a global discussion around the concept of causality was not started.

Many diseases, occupationally related or not, have multiple contributing factors, which have different impacts on the onset or progression of the disease. Therefore, there is a continuous distribution of causality but the legislation imposes a binary decision process (recognition or no recognition and therefore compensation or no compensation). Awarding compensation even though only a part of the cause in an individual person is due to occupational factors raises the underlying question of the cutoff point. This percentage point at which an

occupational risk factor is considered sufficient to result in compensation varies widely with a range from 50% in some jurisdictions to 5% in others [11]. This cutoff point has not been clealry assessed in France, and this is probably also one of the important causes of discrepancies among the different CRRMP.

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Table 1. Summary of the cases, mean acceptance rate as an occupational disease by the CRRMPs and concordance index

Case	Disease	Patient	Date of diagnosis	Period of exposure / job	Potential exposure	Parameter*	Mean acceptance rate	Concordance index
1	Pleural plaque	Man, 77 year-old	2015	Electrician 1954-1956	Asbestos	Exposure, 2 years instead of 5	50%	0
2	Pleural mesothelioma	Man, 74 year-old	2014	Handler in an asbestos company 1961-1970. Work on industrial gaskets 1970-1978	Asbestos	Latent period, 46 years instead of 40	100%	1
3	Lung cancer	Man, 61 year-old, non smoker	2015	Bricklayer 1980-1986	Asbestos	Exposure, 6 years instead of 10	50%	0
4	Lung cancer	Man, 63 year-old, non smoker	2014	Change of cylinder heads and exhaust pipes 1973-1980	Asbestos	Exposure, 7 years instead of 10	100%	1
5	Lung cancer	Man, 62 year-old, non smoker	2014	Truck mechanics 1975-1980	Asbestos	Exposure, 3 years instead of 10	69%	0.38
6	Occupational noise induced hearing loss	Man, 70 year-old	2010	Boiler maker 1979-2005	Noise	Latent period, 5 years instead of 1	87%	0.74
7	Occupational noise induced hearing loss	Man, 54 year-old	2015	Digger driver 1972-2012	Noise	Latent period, 3 years instead of 1	50%	0
8	Supraspinatus tear of the rotator cuff	Woman, 56 year-old	2015	Ambulance driver 2003-2013	Manual handling	Job not in the list	28%	0.44

9	Chronic rotator cuff disease	Woman, 52 year-old	2014	Childminder since 1990, for 4 children 6 months to 3 year-old	Manual handling	Job not in the list	35%	0.30
10	Rotator cuff partial tear	Woman, 51 year-old	2015	Check-out assistant in a supermarket since 1995	Manual handling	Job not in the list	71%	0.42
11	Carpal tunnel syndrome	Woman, 49 year-old	2014	Childminder since 1990, for 4 children 6 months to 3 year-old	Manual handling	Job not in the list	6%	0.88
12	Carpal tunnel syndrome	Woman, 49 year-old	2014	Housemaid, part time (20h/week) since 1999	Repetitive movements	Job not in the list	28%	0.44
13	Meniscal lesions of the knee	Man, 57 year-old	2015	Bricklayer and tiler 1978-2010	Kneeling and squatting	Latent period, 5 years instead of 2	100%	1
14	Meniscal lesions of the knee	Man, 48 year-old	2014	Cleaning and maintenance in a town hall since 1987	Repetitive movements, manual handling	Job not in the list	0%	1
15	Herniated disc at the L5-S1 level	Man, 49 year-old	2011	Construction driver on construction sites since 2008	Whole-body vibrations	Exposure, 3 years instead of 5	86%	0.72
16	Herniated disc at the L4-L5 level	Man, 47 year-old	2012	Package Delivery Driver 1991-2012	Whole-body vibrations, 1983-2012	Job not in the list	14%	0.72
17	Herniated disc at the L5-S1 level	Man, 50 year-old	2014	Heavy-duty equipment mechanic, 1983-2012	Whole-body vibrations	Latent period, 2 years instead of 6 months	71%	0.42
18	Herniated disc at the L4-L5 level	Man, 52 year-old	2015	Janitor in a residential accommodation since 1985	Manual handling	Job not in the list	0%	1

19	Herniated disc at the L4-L5 level	Man, 51 year-old	2015	Warehouseman and forklift driver	Whole-body vibrations, manual handling	Job not in the list	75%	0.50
20	Low back pain	Man, 52 year-old	2011	Warehouseman and forklift driver since 1975	Whole-body vibrations, manual handling	Disease not in the lists**	35%	0.30
21	Coxathrosis	Man, 51 year-old	2011	Butcher in a supermarket, 1980-2015	Manual handling	Disease not in the lists**	6%	0.88
22	Cervical arhrosis	Man, 55 year-old	2014	Bricklayer since 1980, frequent lifting of cinder blocks on the shoulder	Manual handling	Disease not in the lists**	19%	0.62
23	Cervical arhrosis	Woman, 51 year-old	2015	Assembly-line worker and visual inspection in the glass industry since 1977	Awkward work postures, manual handling	Disease not in the lists**	0%	1
24	Cervical herniated disc	Woman, 45 year-old	2016	Nurse assistant in a community residence for the disabled	Awkward cervical postures	Disease not in the lists**	0%	1
25	Non Hodgkin lymphoma	Man, 61 year-old, non smoker	2016	Herbicide manufacturing Worker, 1975-2007	Pesticides	Disease not in the lists**	92%	0.84
26	Bladder cancer	Man, 62 year-old, non smoker	2014	Roofer (roofing asphalts), 1980-2005	PAH***	Disease not in the lists**	88%	0.76
27	Bladder cancer	Man, 62 year-old, smoker (20	2014	Roofer (roofing asphalts), 1980-2005	PAH***	Disease not in the lists**	6%	0.88

		pack years)						
28	Bladder cancer	Man, 71 year-old, non smoker	2012	Fioul delivery driver, 1967-2003	PAH***	Disease not in the lists**	19%	0.62

* Reason (criteria which would have been necessary for automatic recognition and which is not fulfilled) why the claim would have been submitted to the CRRMP

** The disease is not included in the French closed list of occupational diseases

*** PAH: Carcinogenic polycyclic aromatic compounds

Table 2. Percentage of acceptance (recognition of the case as an occupational disease) or refusal rate according to the geographical area.

CRRMP	Acceptance rate	Refusal rate	No decision
Grand Est (Alsace, Champagne-Ardennes, Lorraine)	39%	43%	18%
Nouvelle Aquitaine	54%	46%	0%
Auvergne	18%	82%	0%
Burgundy-Franche-Comté	36%	14%	50%
Britany	70%	12%	18%
Centre-Ouest	32%	68%	0%
Centre-Val de Loire	33%	31%	36%
Hauts-de-France	64%	36%	0%
Île-de-France	36%	43%	21%
La Réunion	54%	39%	7%
Languedoc-Roussillon	38%	55%	7%
Martinique	54%	32%	14%
Midi-Pyrénées	50%	21%	29%
Nord-Est	50%	50%	0%
Normandy	50%	50%	0%
Pays de la Loire	42%	51%	7%
Rhône-Alpes	33%	42%	25%
Sud-Est	35%	47%	18%
Total	44%	42%	14%