



# Reporting of occupational diseases: Issues and good practices in five European countries

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# Glossary of main organizations referred to

**ASK - Arbejdsskadestyrelsen (Denmark):** National Board of Industrial Injuries, the Danish occupational disease insurance organization

**ASL - Azienda Sanitaria Locale (Italy) - Local Health Unit:** an organization which is the embodiment, at the local level, of the Regional Health Care System in Italy; it has wide-ranging social and health responsibilities: public health, environment, occupational health, protection of minors, etc.

**BG - Berufsgenossenschaft (Germany):** German accident at work and occupational disease insurance organization

**CPAM - Caisses primaires d'assurance maladie (France):** French social security organizations distributed throughout France and competent in the area of health and accident at work and occupational disease compensation for salaried workers under the general Social Security regime (industry, commerce, services)

**Mutuas de Accidentes de trabajo (Spain):** Spanish occupational risk insurance organizations, also responsible for managing other welfare benefits

**INAIL - Istituto Nazionale per l'assicurazione contro gli infortuni sul lavoro (Italy):** Italian occupational injury insurance organization

**INSS - Instituto Nacional de la Seguridad Social (Spain):** Spanish National Social Security Institute

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NOTE: THE FRENCH VERSION SHALL BE THE AUTHENTIC VERSION IN CASE OF DOUBT

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# Introduction

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.

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.

And yet, this specific insurance is not always well known. 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.

This phenomenon of under-reporting seems to be very widespread, and more or less severe. It is deplored more or less vigorously by the authorities, trade unions and experts. It was mentioned, in particular, in the European Commission's report on the evaluation of Recommendation 2003/670/EC on occupational diseases<sup>(1)</sup>, during the EUROGIP Discussions<sup>(2)</sup> of 2012 concerning the detection and recognition of occupational diseases in Europe, and in a 2002 report<sup>(3)</sup> by the European Forum of Insurance against accidents at work and occupational diseases. On the national level, under-reporting is denounced in numerous scientific articles.

And yet the implications of an efficient system for gathering reports are important in two respects:

- For the victims: The benefits provided by the occupational risk insurance system are generally more advantageous (and more appropriate) than those paid for illness or disability/death. Moreover, effective vigilance can lead to the detection of an occupational disease at an early stage and help to have it treated in time;
- For defining risk prevention priorities: A reliable count of occupational diseases is a necessary tool for the authorities to target risk prevention efforts and focus on the areas in which the challenges are greatest.

As regards the main causes of under-reporting, which could determine the type of solutions to be implemented, they are well known and mentioned by all the countries in question: technical difficulties in identifying the work-related origin of certain diseases (due to a long latency period between the time of exposure to the risk and the symptoms of the disease, or because of interactions with extra-occupational factors), an insufficient knowledge of occupational diseases by the medical personnel having to diagnose them, but also other reasons related to the relative interest for the victim of having the work-related nature of their disease recognized (fear for their job, etc.).

Based on these observations, EUROGIP carried out research on the reality of under-reporting in several European countries and identified good practices designed to combat this phenomenon.

The countries examined in this study were **Germany, Denmark, Spain, France and Italy**. These five European countries were chosen because they are representative of diverse but mature insurance models. Four of them show an interest in the issue of under-reporting of occupational diseases, and information - both quantitative and qualitative - is available from them. Finally, these are also countries which make available relatively detailed insurance statistics, which make it possible to analyse the incidence rate by category of disease.

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(1) "Report on the current situation in relation to occupational diseases' systems in EU Member States and EFTA/EEA countries, in particular relative to Commission Recommendation 2003/670/EC concerning the European Schedule of Occupational Diseases and gathering of data on relevant related aspects" at [http://www.eurogip.fr/images/publications/EU\\_Report\\_Occupational\\_diseases.pdf](http://www.eurogip.fr/images/publications/EU_Report_Occupational_diseases.pdf)

(2) Proceedings available in French at [http://www.eurogip.fr/images/documents/266/Actes\\_DebatsEUROGIP2012\\_MPEurope.pdf](http://www.eurogip.fr/images/documents/266/Actes_DebatsEUROGIP2012_MPEurope.pdf)

(3) Survey concerning under-reporting of occupational diseases in Europe (out of print)

It should be specified that this study concerns the under-reporting of diseases that are eligible, in light of the national legislation, for recognition of their work-related nature and, where applicable, compensation of the victims.

The aim here is not to consider whether governments have a good or poor knowledge of the scale of occupational health issues in their country. However, although this study is performed from an insurance perspective, it does discuss the mandatory reporting procedures imposed on some stakeholders (health care professionals) for diseases which are suspected as being of work-related origin. These procedures aim to evaluate empirically the existence of work-related diseases independently of insurance considerations, but the two types of procedures are sometimes linked.

Nor is it our aim to judge the “generosity” of the insurance systems and their propensity for more or less readily recognizing reported cases. Insurance options (diseases that can be recognized, recognition criteria, compensation paid) will be mentioned when they have an impact on reporting volumes, but the purpose is not to discuss underrecognition or undercompensation.

This study is organized around two main approaches: an overview of the reporting of occupational diseases in the five countries selected, and a focus on the issue of under-reporting in four of them. Part One gives a description of reporting procedures, then Part Two gives comparative statistics (for 2011) concerning reported and recognized occupational diseases. The last part is devoted to the assessment each country makes of the shortcomings of its system and the solutions experimented successfully to correct them.

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# Summary

In this new report on occupational diseases<sup>(1)</sup>, EUROGIP examines the issue of reporting<sup>(2)</sup> of these diseases in five European countries: **Germany, Denmark, Spain, France and Italy**. These countries were chosen because they are representative of diverse insurance models. They are also countries which make available relatively detailed insurance statistics, which make it possible to analyse the incidence rate by category of disease.

Four of them (Germany is the exception) show an interest in the issue of under-reporting of occupational diseases. Therefore, information - both quantitative and qualitative - is available there.

The first part of the report outlines the main features of the occupational disease reporting procedures in these countries. There are two underlying approaches to the mechanisms of claims for recognition: either the procedure is open to numerous parties, which is usually the case, or to a single party.

This is followed by a presentation of statistics and an analysis of data relating to the reporting and recognition of occupational diseases, with regard to four types of diseases: **musculoskeletal disorders (MSDs), hypoacusia, skin diseases and cancers**. In the third part, EUROGIP studies the national reports drawn up regarding the under-reporting of occupational diseases, and examples of good practices to combat this phenomenon.

In terms of reporting, or claims for recognition of the work-related nature of the disease, a difference of 1 to 4 is noted between the country which has the fewest and that which has the most, i.e., in 2011, 681 claims for recognition per 100,000 insured in Denmark, 619 in France, 220 in Italy and 174 in Germany (the figures for Spain are not available).

Although there is probably no direct link between the more or less open nature of the claim for recognition procedure and the number of reports, the latter is, on the other hand, clearly linked to doctors' and the general public's knowledge of the insurance system. The attractiveness of having the work-related nature of the disease recognized also plays a definite role with regard to the benefits paid (more generous than within the framework of health or disability insurance) and the likelihood of seeing the case materialize.

In the five countries covered by the study, the same diseases (MSDs, hypoacusia, skin diseases and cancers) are involved in the largest number of reports, but in different quantities. We note a certain balance in Germany and Denmark, whereas MSDs are clearly predominant in France. There is accordingly a difference of 1 to 20 between Germany and France, where MSDs account for 25 and 492 reports respectively per 100,000 insured.

There are also major differences between countries regarding cases recognized, and this can be explained by the dominant share of MSDs which means that France, with 377 cases recognized per 100,000 insured in 2011, and Spain (129 cases) top the list of countries which recognize the most occupational diseases.

Regarding cancers, they are recognized in similar proportions in Denmark, Italy and Germany (between 5 and 6 cases recognized per 100,000 insured). France has a recognition ratio that is twice as high as those countries (11 cases), for a reporting level equal to that of Italy (14 cases, 13 in France) but lower than those of Germany (20 cases) and Denmark (23 cases). This is mainly due to the number of asbestos-related bronchopulmonary cancers recognized and reported.

In the third section of the report, EUROGIP examines the combat against under-reporting of occupational diseases in Denmark, Spain, France and Italy. In these countries, it is effectively admitted that a significant number of ODs are not reported, whereas in Germany this phenomenon is perceived as marginal. In Denmark, three studies (1990, 1996 and 2007) made it possible to quantify the phenomenon, especially for pleural mesothelioma caused by asbestos and adenocarcinoma of the nasal cavities and sinuses related to wood dust. Under-reporting of these diseases apparently concerns one out of two cases. Very recently (in 2012), according to a report by a working group mandated by the Ministry of Labour on the under-reporting of ODs, the overall number of cases reported is estimated at between 1000 and 2000 per year.

In Spain, this is an epiphenomenon for the insurers (under-reporting is estimated to not exceed 20%), but not for the trade unions (ISTAS speaks of an average rate of 80% in a 2008 report).

In France, an ad hoc commission responsible for assess-

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(1) EUROGIP has published a series of reports on the subject of occupational diseases at <http://www.eurogip.fr>

(2) By reporting is meant a claim in order to have the work-related nature of a disease recognized and to obtain from the insurance organization the benefits provided for by the regulations in force.

ing the portion that the “occupational injuries and diseases” Branch pays back to the “health” Branch each year estimated that under-reporting concerned about 20,000 cases per year for MSDs and about 10,000 for both skin diseases and deafness.

In Italy, the under-reporting of cancers (excluding mesotheliomas and nasosinusal tumours) is estimated at 90%.

Faced with these findings, these countries have developed initiatives to combat the phenomenon of under-reporting. The examples presented in the report were chosen for their originality and their documented aspect, but also for the evaluations performed. They usually concern occupational cancers.

In Denmark, the initiative involves cross-checking the computer files coming from the Cancer Register and from the insurer ASK. A 50% increase in the number of claims for recognition was noted following the implementation of the system.

In France, a regional experiment aims to make a proactive search for persons affected by work-related tumours of the bladder using data from the health insurance organization. The number of claims for recognition increased by a factor of 4.6 in the 18 months to two years following the start of the programme, and the number of cases recognized as occupational diseases also increased.

In Italy, there is the initiative started by a hospital (in Brescia province) to search for cases of work-related lung tumours based on the cases diagnosed and cared for in the hospital. The recognition rate increased to 38% in this trial province, versus 23% at the national level.

In Spain, the SISVEL software programme enables doctors to be alerted when they are faced with a patient having a diagnostic corresponding to one of the 75 categories currently in the software.

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# 1 - Occupational disease reporting procedures in five European countries

In order to better understand reporting issues in the countries studied (**Germany, Denmark, Spain, France and Italy**) and their possible impact on the incidence rate statistics registered by the insurance organizations, it is necessary to briefly describe the claim for recognition procedures existing in these five countries.

The aim here is to describe the national procedures by which a claim is made in order to have the work-related nature of a disease recognized and to obtain from the insurance organization the benefits provided for by the regulations in force.

When there exists in parallel a procedure for reporting suspected cases of work-related diseases, this time for epidemiological purposes, this obligation will be mentioned.

## 1.1 Germany

The claim for recognition procedure is open to numerous stakeholders: the doctor, the employer, the victim and the social insurance organizations (health insurance funds, old age insurance organizations, employment agencies). This is even an obligation for the doctor and the employer (in cases where an occupational disease is suspected). The doctor receives from the insurance organization €20 in remuneration per report, irrespective of the outcome.

The report has to be sent to the injury insurance organization (*Berufsgenossenschaft, BG*) by which the company is covered or to the public-sector injury insurance fund (*Unfallversicherungsträger der öffentlichen Hand*) by which the civil servant<sup>(4)</sup> is covered.

In practice, the doctors initiate most of the reports, followed by social organizations (about 20%), victims (about 10%) and employers (about 3%).

Reporting can be performed either on a paper form or electronically. Since 1 August 2002, an official order concerning reporting of occupational diseases to the injury insurance organization allows reports to be filled in online and sent directly via Internet.

This regulation also imposed uniformity of the form and content of reports for all the BG. Lastly, the reporting forms

were considerably simplified and the number of fields to be filled in was reduced.

## 1.2 Denmark

In Denmark, anyone can report a case of disease suspected of being of work-related origin. In fact, most claims for recognition as occupational diseases come from the medical profession, especially family doctors. Gradually, more claims are coming from hospital departments.

Since 1976, this has even become a legal obligation for doctors and dentists, who have a period of nine days to report after producing the diagnostic. In hospitals and clinics, it is up to the doctor or dentist managing the department to establish this report. This obligation was extended to specialist doctors only from 1 July 2010. It comes with a sanction which has become increasingly strict over the years (a fine or prison sentence of up to two years).

Every doctor who reports a case of occupational disease receives a sum of 201 Danish kroner, i.e. about €27 (based on the September 2014 exchange rate).

When reporting, the victim's consent is not necessary; however, the victim can oppose the examination of their case by the insurance organization at another stage of the procedure.

Since 1 July 2010, electronic reporting of occupational diseases via the ESS system (*Elektronisk anmeldelse af Erhvervs sygdomme*) is compulsory. The electronic channel enhances the quality of reporting and reduces the time for processing dossiers during compensation procedures. Hard-copy reports remain possible for the victims and for Danish employers established abroad.

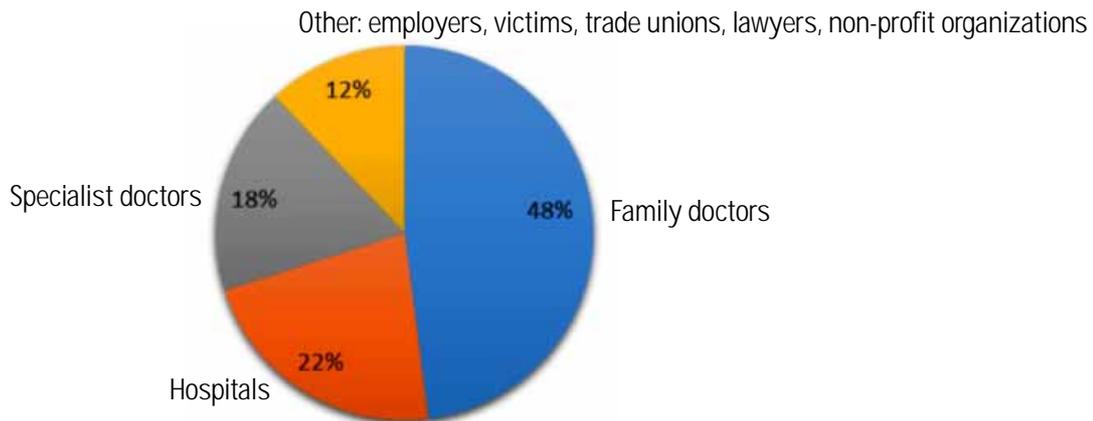
In 2011, 70% of reporting was performed electronically, and only 15% of reports in hard-copy form still came from doctors.

When the report comes from a doctor, the victim is informed of the receipt of this claim for recognition and of the investigation which will follow. They can object to this, in which case their dossier will be statistically coded as "filed without recognition".

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(4) For the private sector, companies in industry, trade and services must be affiliated to one of the nine injury insurance funds (*Berufsgenossenschaft, BG*) by which they are covered depending on their sector of activity. The BGs are public trade associations with equi-representational management. For the public sector, there are several injury insurance funds: one general fund for each Land, a national fund for certain activities (federal government, railways, postal services and telecommunications) and four funds for firemen.

Graph 1: Claims for recognition in Denmark according to their source (2011)



In 2011, there were 878 of these refusals, which represents around 5% of reports. They mainly concerned cases of mental illnesses (274), skin diseases (155), hypoacusia (161) and cancer (85).

The occupational disease reports are sent simultaneously to two separate organizations:

- The National Board of Industrial Injuries (*Arbejdsskadestyrelsen, ASK*), an organization for which the report represents a claim for recognition; the ASK rules on the recognition of cases of occupational diseases and on compensation for the victims;
- The Labour Inspectorate (*Arbejdstilsynet* or Danish Working Environment Authority - WEA), which keeps the register of reported occupational diseases.

In some cases the statistics concerning the reporting of occupational diseases published by these two organizations are different. This can be explained by the fact that the ASK insurance organization counts any other diseases discovered for a given victim during the process of investigation of their case.

It should be specified that although the benefits for temporary disability due to an occupational disease are payable by the health insurance organization (financed by taxes), the statistics of the ASK (which, for its part, plays a role in cases of permanent disability and/or a loss of earning capacity, and to cover certain medical expenses) indeed cover all reported

cases, irrespective of the type of benefits that will be awarded.

### 1.3 Spain

The Spanish systems for reporting of occupational diseases on the one hand, and for their statistical registration on the other hand, were thoroughly modified in 2007.

Before 2007, it was mainly the employer who reported to the insurance organization of their choice - *Mutuas* or the National Social Security Institute<sup>(5)</sup> - suspected cases of occupational diseases. The family doctor was also authorized to do so; in that case the insurer informed the employer of this.

For each suspected case of occupational disease, the Labour Inspectors visited the company in question. It was therefore entirely in the interest of the employer to report the case as an occupational injury (in that case, the Labour Inspectors travelled only if the accident was serious or fatal).

As regards the registration of occupational diseases on the national level and the production of statistics, the existence of several channels for information feedback (from the *Mutuas* and companies) to the Ministry of Employment and Social Security, and the lack of a computerized management system meant that the statistics supplied were unreliable.

As of 2007, new regulations<sup>(6)</sup> reformed the area of occupational diseases: a new list of occupational diseases was

(5) To insure its workers against occupational risks, the employer has a choice of affiliation with one of the 20 *Mutuas de Accidentes de trabajo* present throughout the country, or else with the National Social Security Institute (*Instituto Nacional de la Seguridad Social, INSS*). For the maritime sector, only the *Instituto social de la marina* is competent, and there are also several independent schemes. The *Mutuas* are private employers' non-profit organizations accredited by the Ministry of Employment and Social Security. The great majority of companies opt for one of the *Mutuas*; these organizations now cover 98% of employers (1,485,854 companies), which represents 94.92% of workers, or 13,143,990 people (2011 figures). The *Mutuas* have competencies which extend beyond OSH insurance and occupational risk prevention, because, if the employer so requests, they manage temporary disability benefits in case of illness (on behalf of the INSS) and other more specific benefits (health care services for minor children suffering from serious diseases, unemployment benefits for self-employed workers, etc.).

(6) Royal decree No. 1299/2 006 (BOE of 19 December 2006)

adopted, the reporting stakeholders changed and a new electronic registration system was established.

Since then, the worker, the family doctor of the health care centre to which the worker is affiliated as a resident<sup>(7)</sup>, the industrial doctor of the occupational risk prevention department by which the company is covered, or the employer himself can report a suspected case of occupational disease to the insurance organization (Mutua or INSS).

There is now an obligation placed on doctors of the National Health Service or risk prevention departments to report cases of possibly work-related diseases.

We should also specify that the Labour Inspectors no longer visit companies systematically, but only in cases of serious, fatal or recurrent diseases, or at the request of the worker or the trade unions.

The Mutua (insurer for 98% of companies) investigates the reported case and has five days to give a decision. Recognition is automatic whenever the cause of the disease is the employee's exposure to the factors and substances associated with the listed diseases (Article 116 of the General Social Security Act (LGSS)).

Where an in-depth investigation (further examinations) proves necessary, the examination period can be extended to six months, renewable once. In practice, a decision is given within five days in 90% of cases.

Since 2007, the Ministry of Employment and Social Security has produced national occupational disease statistics based on a single stream of information: the recognized cases of occupational diseases transmitted by the Mutuas and the INSS (as insurer) electronically via CEPROSS (*Comunicación de Enfermedades Profesionales, Seguridad Social*). The creation of this system entailed extensive work for coding the transmitted information.

This statistical registration system proposes three categories of information:

- Cases of occupational diseases strictly speaking recognized during the year (*partes comunicados*);
- Cases of non-traumatic pathologies caused or aggravated by work<sup>(8)</sup> (by means of the PANOTRATSS system created in 2010, which covers a list of 16 categories);
- Cases of decisions to provide compensation (via a lump sum payment) for damage that is permanent but not incapacitating for work, in other words the award of compensation for bodily harm.

The complexity of the Spanish system for registering

cases of occupational diseases means that Spain's statistics are hardly comparable.

There are no statistics regarding the number of claims for recognition reaching the insurers (Mutuas and INSS). Each of the twenty Mutuas should, however, have a count of reports by the various types of claimants, but in practice they do not disclose these figures.

The CEPROSS and PANOTRATSS systems make it possible to have relatively reliable statistics regarding recognized cases.

It must be specified that a number of OD cases strictly speaking (*partes comunicados*) transmitted by the Mutuas/INSS to the Ministry (almost 7% in 2011) are rejected by the latter and reclassified as "common" diseases or occupational injuries. All the information on recognized occupational diseases (variables: geography, the victim's gender, age and sector of activity, type of disease, etc.) is nevertheless presented on the basis of the *partes comunicados* as a whole.

## 1.4 France

It is the victim who triggers the claim for recognition procedure with the health insurance organization by which he (she) is covered<sup>(9)</sup>.

The claim is made by sending a standard report form, together with the medical certificate describing the disease established by the doctor chosen by the victim. The claim must be sent within a period of 15 days after the work stoppage or certification of the disease. There exists no electronic procedure for sending claims for recognition.

The CPAM then opens an administrative and medical enquiry and informs the employer, the industrial doctor and the labour inspector.

Although the French national health insurance fund for employees (CNAMTS) has figures concerning claims for recognition (121,410 for the chosen reference year, i.e. 2011), the statistics that will be presented below and used for the reports will correspond to cases handled in 2011; this suggests that claims for recognition that were incomplete (not accompanied by the initial medical certificate "CMI") were eliminated in order to keep only those cases that were investigated during the reference year, whether or not they resulted in recognition.

Apart from this claim for recognition procedure, the doctor is obliged to report any disease which, in his opinion, is of a

(7) In Spain, schematically, each resident is assigned to a primary health care centre under the National Health System. 90% of the population go to these centres, while the remaining 10% prefer to choose their own self-employed doctor and take out a private insurance.

(8) Since the Spanish list of occupational diseases is a closed list (no complementary system), it is legally impossible to recognize cases of diseases that are not registered; however, the recent creation of the concept of "non-traumatic pathologies caused or aggravated by work" has made it possible, since 2010, to recognize as occupational injuries the work-related nature of such pathologies (coded ICD-10), although without merging them with the occupational injury statistics as was formerly the case. For the victim, the compensation is the same for ODs and OIs.

(9) For salaried workers in the private sector, this is the Caisse Primaire d'Assurance Maladie (CPAM: primary health insurance fund)

work-related nature (Article L. 461-6 of the French Social Security Code). These reports, produced for health watch purposes, must be sent to the regional labour inspector doctor commissioned by the company where the employee works.

Although this is a legal obligation, it is rare for doctors to report diseases of a work-related nature. The few cases reported come mostly from industrial doctors and have until now been only partially processed, notably due to insufficient systematization and centralization<sup>(10)</sup>.

## 1.5 Italy

It is the employer who must make the formal claim for recognition as an occupational disease to INAIL (*Istituto Nazionale per l'assicurazione contro gli infortuni sul lavoro*).

Within five days following receipt of the initial medical certificate of occupational disease submitted by the victim, he must fill in the form to this effect and send it either electronically via the INAIL website, or by posted letter to the competent INAIL regional unit (depending on the insured's place of residence). The electronic system has existed since 2010 for all workers except agricultural employees, domestic employees and casual labourers. The stipulated penalties for failure to report or incorrect reporting by the employer are a fine of €129 in the event of failure to indicate the worker's national ID number and a fine of €1,290 to €7,745 for failure to report, or a late, incorrect or incomplete report.

Prior to this, the doctor (general practitioner or industrial doctor) who diagnosed the disease must submit to the victim an initial medical certificate of occupational disease and also send a medical certificate to INAIL within ten days following his first consultation with the victim.

It should be pointed out that in Italy the victim often receives assistance from the trade unions, via their *patronato*<sup>(11)</sup>, especially in the case of a claim for recognition of an off-list disease, but not only in such cases.

In addition to this insurance type obligation, the doctor is required to report the case to the risk prevention department of the competent ASL<sup>(12)</sup>, the provincial labour department (Labour Inspectorate) and the legal authority (public prosecutor).

INAIL (which plays a role here as the organization which in 2010 took over the *ISPESL - Istituto superiore per la prevenzione e la sicurezza sul lavoro*) in conjunction with the

Regions (via the ASL organizations) uses this reporting data for epidemiological and risk prevention watch purposes. The data is used in particular to produce various registers: MAL-PROF monitoring system (work-related diseases in 14 of the 20 regions of Italy), registers for cancers (for mesotheliomas since 2000 and nasosinusal tumours since 2006, by region).

## Conclusion

The study of reporting procedures shows that there are two different underlying approaches to the mechanisms of claims for recognition.

The procedure is open to numerous parties in three of the five countries covered by the study. Most reports come from doctors, who are legally required to report any disease which they suspect of having a link with the patient's occupation; this obligation sometimes entails a symbolic remuneration. This is the choice of most European countries (Germany, Denmark, Spain, but also Austria, Luxembourg and Finland).

Some countries (France and Italy, but also Belgium, Sweden and Switzerland) leave the initiative for the procedure up to the victim alone (via the employer in Italy and Switzerland).

Detailed analysis of the reporting statistics below will show us that the source of the report is a factor that does not necessarily have an impact on the number of claims for recognition identified by the occupational risk insurance organizations.

In any case, it cannot be ignored that doctors play a key role in detecting the work-related origin of a disease. That is why they are the targets of most of the initiatives to combat under-reporting of occupational diseases described in Part 3.

It also seems clear that in several countries the authorities want to facilitate the procedure by establishing an electronic reporting system (Germany, Denmark, Italy). This trend is becoming widespread.

Whatever the approach on which the reporting system and the tool used are based, it seems clear that these systems do not function optimally in most countries, because they are the target of criticism and attempts at improvement.

(10) To find out more (in French): <http://www.invs.sante.fr/Dossiers-thematiques/Travail-et-sante/Maladies-a-caractere-professionnel/Contexte-dispositif-de-surveillance>

(11) The *Patronati* are structures existing in each Italian trade union confederation whose role is to assist workers free of charge in defending their Social Security entitlements. Their role as a service of public interest was recognized by the Italian government as of 1947. There are about thirty of them, chief of which are the INCA (for the CGIL) and INAS (for the CISL)

(12) Each Local Health Unit (*ASL - azienda sanitaria locale*) has a department for risk prevention and safety in the workplace, which is the competent body in the area of occupational risk prevention. Among other roles, this ASL department assesses (upon receiving an OD report) whether the employer has complied with the occupational safety and health regulations, in order to rule out their possible criminal liability.

## 2 - Statistics and analysis concerning occupational disease reports and cases recognized

This part presents insurance statistics, i.e. statistics concerning claims for recognition as an occupational disease and the number of cases recognized.

We must be very cautious in trying to draw conclusions from statistical comparisons between countries regarding the links between reporting levels and the phenomenon of under-reporting. Firstly, this is because national statistics partly reflect very diverse insurance choices, but also it is not possible to isolate and measure the impact of the quality of each country's working conditions and preventive measures on their level of occupational disease reporting.

As regards the methodological precautions to be taken, they are outlined in Appendix 1, together with the raw data for each country (following appendices).

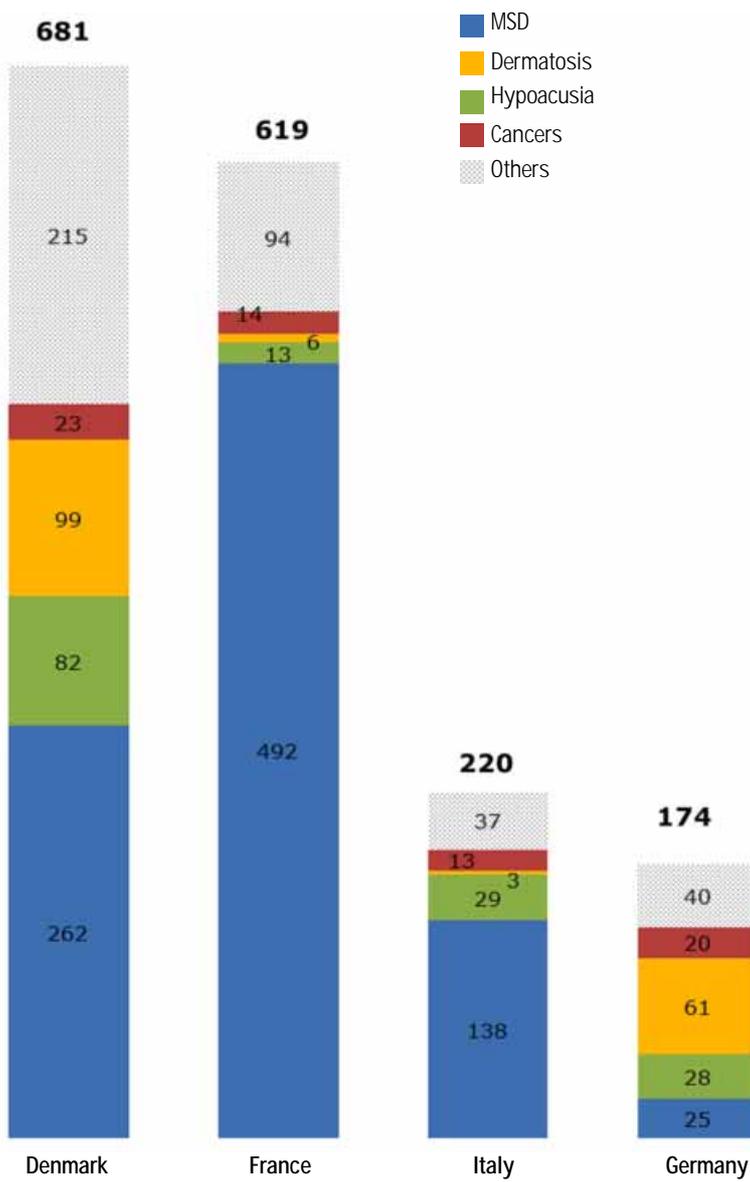
To compare the countries with one another, irrespective of the number of people insured, the incidence rate data are expressed in the body of the study in the form of a ratio per 100,000 insured. In other words, the number of cases registered by the insurance organization producing the statistics will be compared with the population insured for the year in question by said organization, bearing in mind that the figures do not necessarily cover the same categories of workers in all the countries (see methodological notes in appendix).

### 2.1 Claims for recognition

If it is not possible to compare countries' observed levels of reporting with the levels expected based on estimates taken from the international scientific literature (epidemiological studies), it is possible to compare the countries with one another so as to draw lessons from this analysis and make some conjectures.

As a reminder, the claim for recognition (which we shall also call a report) is the procedure gone through with the insurance organization to have the job-related nature of a disease recognized, so as to entitle the victims or their legal beneficiaries to benefits.

Graph 2: Claims for recognition - Ratios per 100,000 people insured - Breakdown by main diseases in four European countries



#### 2.1.1 Observations

##### Major differences regarding the number of reports

We note a ratio of one to almost four between Germany, where the number of claims for recognition is the lowest, and Denmark, where it is the highest.

France ranks roughly on a par with Denmark, with 619 reports per 100,000 people insured, whereas Italy has three times fewer reports than these two countries heading the ranking.

A EUROGIP report<sup>(13)</sup> covering a broader sample of countries shows that in 2006, Belgium and Finland had around 220 reports per 100,000 people insured (i.e. on a par with Italy) and that the ratio for Portugal, Austria and Switzerland was around 100 reports.

Based on the figures in that report and those available to us at present, the countries still have approximately the same ranks.

As regards Spain, no figures are available for claims for recognition. We can nevertheless assert that the ratio exceeds 190, which is the ratio of cases recognized.

### **The more or less open nature of the claim for recognition procedure probably has no influence**

Depending on the procedure for the claim for recognition to the insurance organization (see Part 1), the report is the responsibility of either a single person (the victim in France, the employer in Italy but at the request of the victim), or numerous parties (in Germany, Denmark and Spain); in this case it is the health care professionals who, de facto, account for most of the reports.

It can legitimately be asked whether the fact of opening up the procedure to multiple stakeholders is an advantage favouring more extensive reporting, less impeded by a lack of knowledge or the fear of facing up to such a procedure.

However, there is apparently no correlation between the number of reports and the type of procedure. The two countries offering the same open reporting procedure and in which the doctor is the key player (Germany and Denmark) rank on radically opposite ends of the scale for reporting. As regards the two countries having a procedure limited to a single person, France posts a ratio almost three times higher than Italy.

The EUROGIP report mentioned above confirms this lack of correlation on a broader sample of eleven countries: Luxembourg, Portugal and Austria, which in 2006 had the lowest ratios in the sample, do not have the same type of procedure, just like Belgium and Finland, which post median ratios.

### **The likely impact of publicity for the case management system**

There is no doubt that as the occupational disease insurance system is better known by doctors and the general public, the number of claims for recognition increases. Denmark is the perfect illustration of this: this country, which has made

information for the general public and the combat against under-reporting of occupational diseases a priority for the past several decades (see Part 3), posts the highest ratio of all the countries of Europe.

The reverse argument does not necessarily hold: Germany's low ratio cannot be explained by a lack of awareness of the medical personnel (the main claimant in Germany). In this country and in several others, the media are showing increasing interest for the issue of occupational diseases, and specific campaigns are organized regularly for certain diseases.

It can therefore be assumed that other factors contribute to the classification of countries by reporting ratios.

### **The definite impact of the attractiveness of the approach for the victim**

Attractiveness can be considered in two complementary manners. It may be the interest for the victim of having the work-related origin of their disease recognized, given the benefits offered by the specific insurance organization.

To assess the relative attractiveness for the victims, we should ideally take into account the health and disability insurance systems in each country. However, it is well known that, everywhere in Europe, the benefits awarded for occupational injuries and diseases are generally more favourable than those paid by health and disability insurance organizations.

Based solely on the systems of compensation for occupational diseases in force in the countries in question<sup>(14)</sup> and the calculated reporting ratios, it is hard to make an overall assessment of the impact of this factor on the number of reports.

However, it may be assumed that depending on whether the victim is suffering from this or that disease, depending on whether they suffer merely physiological damage as a result, or also a loss of earning capacity, and depending on the degree of permanent disability that they expect to be awarded, their interest in obtaining reparation varies depending on the country (since benefits in kind and temporary disability benefits generate less disparities between countries than permanent disability benefits).

Attractiveness can also be understood as the claimant's knowledge of the chances of the disease being recognized as work-related.

In that case, it is undeniable that the claimant's perception of the propensity of the insurance organization to recognize the reported disease has an influence on the number of reports. The factors taken into account are firstly the content

(13) "Occupational diseases in Europe, 1990-2006 statistics and legal news". Eurogip-34/E - January 2009. EUROGIP, with the European Forum of Insurance against accidents at work and occupational diseases at <http://www.eurogip.fr/images/documents/171/Eurogip-34%20E.pdf>

(14) To find out more about the compensation of OI/OD victims: "Occupational injuries and diseases: lump sum or full reparation? European survey on the conditions of victim compensation" (June 2005) - EUROGIP - <http://www.eurogip.fr/images/documents/131/Eurogip%2021E.pdf>. See also "Compensation for permanent harm sustained by accident at work and occupational disease victims in Europe" (December 2010) - EUROGIP - [http://www.eurogip.fr/images/publications/Eurogip\\_Notecompensation\\_59E.pdf](http://www.eurogip.fr/images/publications/Eurogip_Notecompensation_59E.pdf)

of the list of occupational diseases in force in the country in question, but also the force of presumption associated with that list, and the recognition criteria used to investigate each case of disease. In the analysis by disease, we shall see that these factors of recognition have an indisputable impact on the number of musculoskeletal disorder (MSD) reports and cases recognized. Given the numeric significance of MSDs among occupational diseases in some countries, they have a substantial impact on the overall reporting and/or recognition levels of the countries in question.

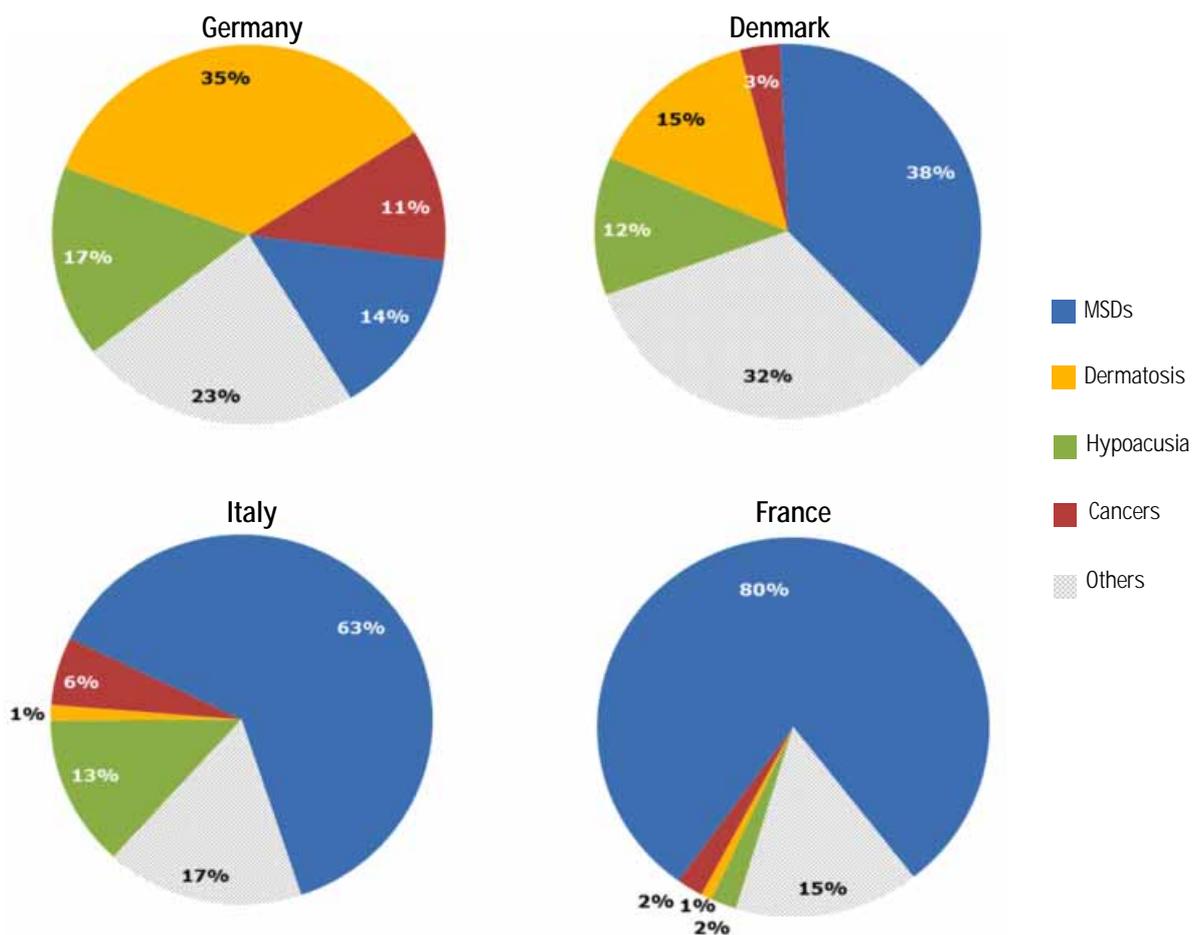
## 2.1.2 Classification of reports by disease

In the various countries studied we find the same main diseases (MSDs, hypoacusia, skin diseases, cancers), but in different quantities.

Germany and Denmark have a relatively balanced distribution of reports among categories of diseases. For Germany, however, we note a preponderance of skin diseases (61 reports per 100,000 people insured, versus around 25 for MSDs, hypoacusia and cancers), and for Denmark a preponderance of MSDs over all other diseases.

Italy and France are characterized by a high proportion of MSDs in their reports, 2/3 and 4/5 respectively. For these two countries, skin diseases account for almost nothing relative to the total number of reports (1%), and the proportion of the other types of diseases is also smaller than in Germany or Denmark.

Graph 3: Breakdown of claims for recognition in four European countries by type of disease (as a%)



## Musculoskeletal disorders (MSDs)

MSDs are the category of diseases which presents the most contrasting situation. In 2011, we note ratios per 100,000 insured ranging between 25 reports in Germany and 492 in France, which represents a difference of one to twenty between these two countries. Italy and Denmark are in an intermediate position with ratios of 138 and 262 respectively.

We may also mention the position of Spain where, although the number of reports is not known, there is an MSD recognition ratio of 129, from which we can deduce an inevitably higher reporting ratio.

Although in different volumes, MSDs easily rank No. 1 among the diseases reported in four of the five countries studied.

It is undoubtedly the "insurance" impact which explains the extreme positions of Germany and France. Not only the content of the two lists in terms of MSDs but also the lack of presumption in Germany and, on the contrary, the force of this presumption in France, have dissuasive and incentive impacts respectively on reporting.

For example, we shall see that Germany recognizes very few MSDs (3 per 100,000 people insured in 2011), whereas in France this category of disease represents most of the cases recognized (377 MSDs out of 426 ODs recognized).

We should stress, however, that the "insurance" impact does not account unconditionally for the position of each of the countries, as shown by the comparison between MSD reports and cases recognized in Denmark. Denmark has a high ratio of MSDs reported in 2011 (262 per 100,000 people insured, far behind the ratio of 492 for France, but far ahead of the Italian and German ratios). But it is one of the countries which recognizes the fewest cases.

It may be assumed that if there are numerous MSD reports in Denmark, this is mainly due to the capability of the Danish system for detecting cases that are potentially of work-related origin, thanks to the efficient circulation of information to doctors and the obligation placed on doctors to report any suspected cases to the insurance organization.

## Hypoacusia

Deafness or hypoacusia (i.e. hearing loss) is one of the most frequent pathologies in the five countries studied.

This condition, which mainly affects the working class, which cannot be cured but does not prevent working, is not easily repaired by hearing aids. To avoid losing their job, it would seem that the victim frequently waits until retirement to make a claim for recognition as work-related deafness.

The reporting ratios per 100,000 people insured are in the

same range in France, Germany and Italy (13, 28 and 29 respectively). Denmark stands out with a ratio of 82. It is also the country in which hypoacusia is most frequently recognized. However, a comparative approach to the recognition criteria applied in several European countries<sup>(15)</sup> shows us that it is no easier to have a case of hypoacusia recognized in Denmark than elsewhere (admittedly there is no severity criterion regarding a hearing deficit, but the deficit must be bilateral and the risk exposure must have lasted five years). It may be assumed that it is because there are a large number of claims for recognition in Denmark that the number of cases recognized is also large.

Possibly, too, the fact that the financial benefits offered for this pathology are rather more advantageous than in other countries has an impact on the number of reports.

## Dermatosis

Again it is Denmark that has the highest ratio in the sample of countries studied (99 reports per 100,000 people insured), followed by Germany (61 reports). France and Italy are far behind, with ratios of 5 and 3 respectively.

The recognition statistics for these pathologies are a reflection of the reporting statistics.

In Germany, it should be pointed out that skin diseases are a prevention priority for the occupational risk insurer, the DGUV, and this has been the case for many years. In 2005, more than one-third of recognized occupational diseases were skin diseases, and their economic cost was estimated at €1.25 billion.

The prevention of skin diseases was one of the three priorities of the Joint Prevention Strategy 2008-2012 (*Gemeinsame Deutsche Arbeitsschutzstrategie - GDA*).

In 2007, the DGUV launched a prevention campaign on an unprecedented scale, with the slogan "Your skin. The most important 2 square metres of your life"<sup>(16)</sup>. This initiative, which took place over two years, was carried out in conjunction with the health insurance organization; it aimed to reach a very broad public, both in everyday life and within a work context. Numerous organizations took part in this campaign (*die Arbeitsgemeinschaft für Berufs- und Umweltdermatologie, der Verband Deutscher Betriebs- und Werksärzte, der Verband Deutscher Sicherheitsingenieure*, etc.).

This campaign had a huge media impact (winning the Health Media Award 2008 and Politikaward 2007 prizes for institutional campaigns), and was able to draw attention to skin diseases and permanently raise the population's awareness of the need to be protected.

Apparently it also had the effect of providing an incentive for reporting as an occupational disease: thus, claims for

(15) See pages 29 and 30 of the report referred to in note 13

(16) "Deine Haut. Die wichtigsten 2m<sup>2</sup> deines Lebens" - <http://www.dguv.de/de/Pr%C3%A4vention/Kampagnen-Veranstaltungen-und-Projekte/Pr%C3%A4ventionskampagnen/Pr%C3%A4ventionskampagne-Haut/index.jsp>

recognition of skin diseases increased 65% between 2006 and 2011.

## Cancers

Occupational cancers are diseases that are statistically less represented than MSDs, skin diseases and hypoacusia, but their seriousness and the difficulty of detecting their work-related origin justify treating them as a priority concern.

The reporting ratios are similar in France and Italy (between 13 and 14 cases per 100,000 people insured). Germany and Denmark are slightly higher, with ratios of 20 and 23 respectively.

A 2010 EUROGIP study<sup>(17)</sup> on occupational cancers in Europe showed that the national lists of occupational diseases were homogeneous with regard to cancers, and the benefits paid by the insurance organizations for serious diseases show no substantial differences, so the explanation for the better Danish ratio is no doubt the priority that this country set itself many years ago, of systematically detecting these diseases (see Part 3).

Leaving aside the ratios, cancers are the only occupational diseases for which most countries agree that they are substantially underreported. The main explanations shared by all the countries are the long latency period between exposure to risk and the appearance of symptoms (20-40 years) and their multifactorial nature. These factors make it difficult for the doctor to establish a relation with the work activity (or past activity when the victim has retired).

## 2.2 Cases recognized

### 2.2.1 Observations

This study concerns the under-reporting of occupational diseases, i.e. the inability of an insurance system to collect all cases of diseases potentially of work-related origin. It does not aim to judge the "generosity" of the various insurance systems, their capacity for recognizing the largest number of diseases or offering the most generous benefits.

However, it would be naive to consider the reporting statistics of the countries studied without comparing them with the recognition statistics. It is likely that recognition regulations and practices (lists of occupational diseases that can be recognized, recognition conditions, type of investigation, etc.), or even the regulations relating to compensation have an impact on the number of suspected cases reported. In other words, the behaviour of claimants may tend to adjust according to the chances of the procedure being successful and the potential benefits rep-

resented by recognition of the work-related nature of the disease.

Bear in mind here that neither the national lists of occupational diseases nor the legal criteria for recognition applied by the insurance organizations are covered by a binding Community Regulation. There is, admittedly, the European Commission's Recommendation of 19 September 2003, which contains in an Annex the European list of occupational diseases (drafted, moreover, in generic terms), but this has only an indicative value.

The content of the national lists, the legal force of presumption associated with each list, and the medical, administrative and exposure criteria applied during the investigation and on which recognition depends are therefore based solely on national insurance choices.

Now, although there is some uniformity for certain categories of diseases (cancers in particular), these lists and criteria vary significantly from one country to another.

However, we should avoid systematically making a correlation between a country's reporting level and its recognition level. We shall see in what follows that the influence of the latter on the former can be established only for some diseases, and not necessarily in all the countries.

### **It is not necessarily the countries which register the most reports that recognize the most occupational diseases**

In terms of cases recognized, France is far ahead of the other four countries, with a ratio of 426 cases recognized per 100,000 people insured, followed by Spain (ratio of 192). Denmark, which is characterized by the fact that it is the country in the sample which registers the largest number of reports, ranks only third for the number of cases recognized.

Italy and Germany are at the bottom of the ranking, and this is also the case for reports.

EUROGIP's 2009 report (see note 13, p. 13) which presented the statistics for 2006, shows us that the ranking of the countries which recognize the highest proportion of occupational diseases has remained more or less the same over five years.

For all types of diseases combined, the recognition rates (i.e. the number of cases recognized as a proportion of the number of reports) are highly variable depending on the country: 22% in Denmark, 40% in Italy, 49% in Germany (taking into account diseases not formally recognized; 26% if only formally recognized cases are considered) and 69% in France.

### **Major differences from one country to another, mainly due to MSDs**

There is a difference of one to five between France, which recognizes the most occupational diseases, and Germany and Italy which recognize the fewest.

There are two explanations for this: the scale and type of

(17) "Work-related cancers: What recognition in Europe?" - EUROGIP - April 2010 [http://www.eurogip.fr/images/publications/EUROGIP\\_RecoCancerspro\\_49E.pdf](http://www.eurogip.fr/images/publications/EUROGIP_RecoCancerspro_49E.pdf)

Graph 4: Country-by-country reporting and recognition ratios per 100,000 people insured (2011)



claims for recognition in each country, but also the insurance-related factors prevailing in each of them.

It is the dominant share of MSDs in all cases recognized which places France and Spain at the head of the countries which recognize most occupational diseases. Without this category of diseases, Spain would be last in the ranking and France in second place behind Denmark.

### 2.2.2 Classification of cases recognized by disease

We logically find the same main diseases as for claims for recognition: MSDs, hypoacusia, skin diseases and, in a smaller proportion, cancers.

France, Italy and Spain are characterized by a large, even very large, proportion of MSDs in their recognized cases (including lumbago, around two-thirds for Italy and Spain, almost 90% for France).

As is also the case with claims for recognition, Germany and Denmark have a more balanced distribution of recognized cases among categories of diseases. Skin diseases are in first place among the diseases most frequently recognized.

### MSDs

“Musculoskeletal disorders” (MSDs) is a generic term referring to a set of degenerative inflammatory diseases of the locomotor apparatus, which affect the muscles, tendons and nerves of the members and the spinal column.

Regarding diseases which can be recognized by the insur-

ance organization, this term “MSDs” covers very different realities depending on the country.

MSDs (including lumbago) are recognized in very unequal proportions in the sample of countries studied: 3 cases per 100,000 people insured in Germany in 2011, 33 cases in Denmark, 57 in Italy, 129 in Spain and 377 in France.

Now, this is the category of diseases which involves the greatest regulatory disparities (content of the lists and recognition criteria) and on which the diversity of investigation practices has the greatest impact.

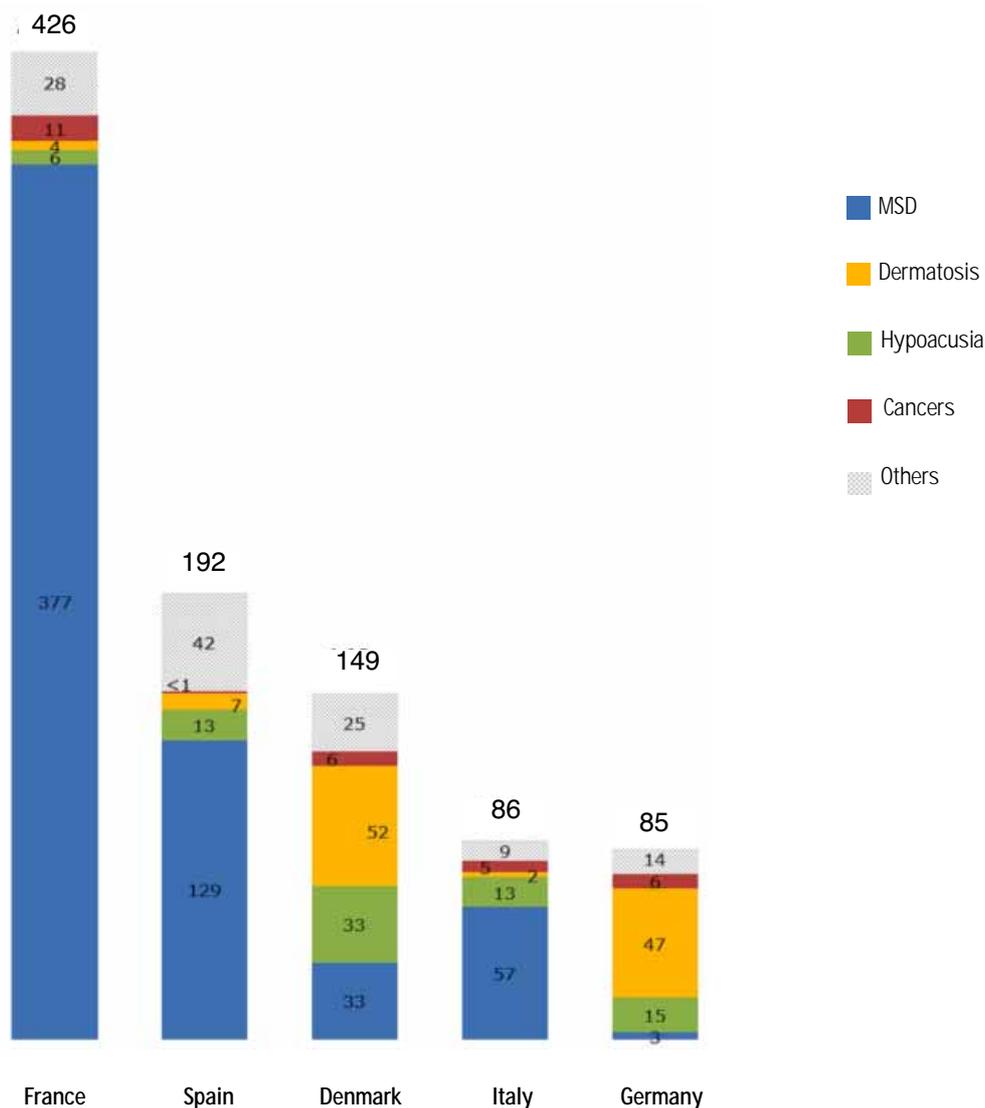
To date, there is no European study which makes it possible to compare the conditions of recognition for each MSD, and to assess the impact of these conditions on reporting and cases recognized in each country<sup>(18)</sup>.

But we know that while numerous MSDs appear in all the national lists of occupational diseases, they appear under more or less generic and more or less restrictive titles.

In France, MSDs strictly speaking are covered by occupational disease tables 57 (peri articular conditions caused by certain acts and postures at work), 69 (vibrations and shocks transmitted by certain machine tools, tools and hand-held objects), 79 (chronic lesions of the meniscus), and the lumbagos by tables 97 (low-and medium-frequency vibrations transmitted to the whole body) and 98 (manual handling of heavy loads). As is the case for all the French tables of occupational diseases, the recognition criteria are listed there in a relatively precise manner, whether it be medical criteria or conditions of risk exposure. Now, if these conditions are met, the disease will be almost automatically recognized by the insurance organization. This presumption of occupational imputability entailed in the French tables is extremely favourable to the victim in the case of MSDs, to the extent that

(18) Work in progress in the “Occupational diseases” working group of the European Forum of Insurances Against Accidents at Work and Occupational Diseases, coordinated by EUROGIP (report to be published in 2015)

Graph 5: Cases recognized - Ratios per 100,000 people insured - Breakdown by main diseases in five European countries (2001)



even if these are by nature multifactorial diseases, this fraction of non-occupational origin, whatever its magnitude, will not affect the positive decision of recognition provided that the criteria are met.

The very high French ratios for reported MSDs and recognized MSDs are undoubtedly the consequence of these factors.

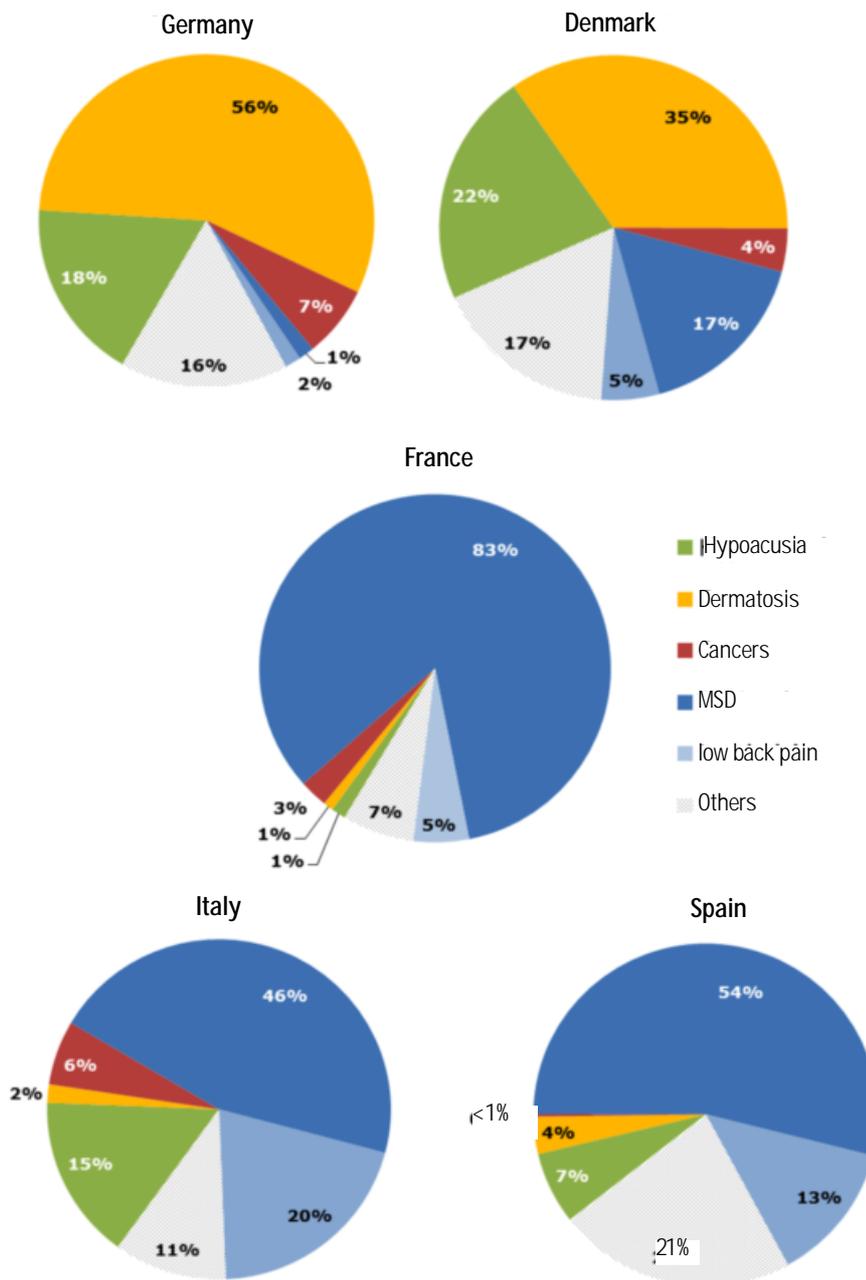
In Germany, the list of occupational diseases comprises about ten generic titles corresponding to MSDs; only arthrosis of the knee, registered since 1 July 2009, contains precise

recognition criteria. For all other MSDs, claims for recognition are investigated on a case-by-case basis according to criteria based on the state of scientific knowledge. There is no presumption of work-related origin due to registration on the list, and the multifactorial aspect is scrutinized when searching for the medical link between the disease and the work activity.

It should be realized, moreover, that for half of the diseases corresponding to MSDs<sup>(19)</sup>, formal recognition, i.e. recognition allowing the victim, where applicable, to receive compensation, depends on the worker discontinuing his work.

(19) This concerns diseases of the tendon synovial sheaths or peritendinous tissues and tendinous or muscle attachments (BK 2101), circulatory disorders in the hands caused by vibrations (BK 2104), lumbar disc conditions caused by the carrying of heavy loads over many years or by forced work positions for many years (BK 2108), cervical disc conditions caused by the carrying of heavy loads on the shoulders for many years (BK 2109) and lumbar disc conditions caused by predominately vertical vibration of the entire body in a seated position over many years (BK 2110).

Graph 6: Breakdown of cases recognized in 2011 in five European countries by type of disease (as a%)



If the work-related origin of the disease is recognized but its seriousness does not require such discontinuation of work, the case will be informally recognized, in other words the insurance organization will finance only individual OSH benefits.

The type of investigation and the very strict conditions for recognition of MSDs are undoubtedly the reason for the high rate of rejection of cases investigated, because only about 10% of claims for recognition lead to a positive decision. And the small number of cases recognized does not encourage claims for recognition (17 claims per 100,000 people insured).

Finally, the threshold of 20% permanent disability necessary to give entitlement to a pension in Germany is also not a

factor giving an incentive to report.

### Hypoacusia

The level of recognition of hypoacusia is similar in four of the countries studied: 6 cases recognized per 100,000 people insured in France, 13 in Spain and Italy, and 15 in Germany. Denmark, which recognizes three times more on average, is an exception.

The criteria for recognition of hypoacusia are similar in all the countries, which is reflected by more or less equivalent recognition rates for this disease (between 40% in Denmark and 50% in Germany). The large quantity of hypoacusia cases recognized in Denmark can probably be explained by the fact

that this is also the country which registers the largest number of claims for recognition for this disease (82 claims per 100,000 people insured, versus 13 in France, 28 in Germany and 29 in Italy).

## Dermatosis

Skin diseases are not often recognized and not often reported in France, Italy and Spain (the recognition ratio ranges between 2 cases per 100,000 people insured in Italy and 7 cases in Spain). However, they are massively recognized in the other countries where they are reported in large numbers: 47 cases recognized per 100,000 people insured in Germany and 52 in Denmark.

It should be specified that the German ratio covers all cases of skin disease for which a link with the work activity has been recognized by the insurance organization, i.e. including cases for which only individual medical care and prevention benefits are financed<sup>(20)</sup>, since they are not serious enough to require that the worker discontinue his (her) work activity due to risk exposure. If we strip out these "informally recognized" cases and keep only the cases for which the victim receives compensation<sup>(21)</sup>, this ratio falls to 1 case per 100,000 people insured. This suggests that it is not the attractiveness of the German compensation system for the victim that encourages the reporting of skin diseases, but more likely the doctors' good knowledge of the possible work-related origin of this type of diseases (because it is mainly the doctors who report in Germany).

For the other countries, it is in practice impossible to compare the conditions of recognition of skin diseases, since these diseases are so diverse and are caused by various pathogenic agents.

## Cancers

Cancers are recognized in similar proportions in Denmark, Italy and Germany (between 5 and 6 cases recognized per 100,000 insured).

France has a recognition ratio that is twice as high as those countries (11 cases), for a reporting level equal to that of Italy (14 cases, 13 in France) but lower than those of Germany (20 cases) and Denmark (23 cases).

Although we do not know the reporting statistics for Spain, this country is distinguished by an extremely low recognition

ratio compared with the other countries (75 cases recognized in 2011 for a country that has more than 15 million insured, i.e. a ratio of 0.24), even though no explanation of a legal nature can be suggested. There is no doubt about the under-reporting of occupational cancers in Spain, in proportions far exceeding those of the other countries studied.

The different statistical classification structures for the five countries analysed make it extremely difficult to make a comparative analysis of reporting and recognition as occupational cancers.

Estimates based on available data nevertheless allow us to assert that mesotheliomas and bladder cancers are reported and recognized in roughly similar proportions in Germany, Denmark, France and Italy. The same holds for cancers of the nasal cavities, except for Denmark where, together with mesothelioma, they undergo systematic detection and reporting, and are more frequently reported than in the other countries.

It is asbestos-related bronchopulmonary cancers that account for France's ranking in first place for the recognition of occupational cancers. This disease accounts for more than half of the occupational cancer reports in several countries (50% in Germany, 60% in France). But positive decisions are far more numerous in France than in the other countries, for a similar reporting level. The recognition ratio there is 6.7 cases recognized per 100,000 people insured, versus 2 in Germany and 1.2 in Italy.

This can probably be explained by the fact that the conditions of recognition of this disease are generally more open there than in the other countries<sup>(22)</sup>. The French list of occupational diseases requires 10 years' exposure to asbestos but imposes no criterion of intensity of exposure. In Germany, an asbestos-related bronchopulmonary cancer can be recognized only if it is associated with an asbestosis or another pleural disease, or else if it results from a proven exposure to asbestos dust in a cumulative dose of at least 25 fibres per year in the workplace; since 2009, this disease can also be recognized if it is due to the joint action of asbestos and polycyclic aromatic hydrocarbons.

## Conclusion

Postulating that the levels of exposure to occupational risks are similar in Germany, Denmark, Spain, France and Italy, we should theoretically find occupational disease reporting ratios of the same order of magnitude. But this is not the

(20) For cases of skin disease that are not sufficiently handicapping to oblige the victim to discontinue their work, the preventive benefits can mostly be broken down into medical rehabilitation measures, prevention measures in the workplace, and health education measures. The actions and measures taken enable retraining activities to be reduced. In the current economic environment, occupational retraining no longer seems as promising as before, and retention in employment - by means of adaptation measures - is the preferred solution.

(21) In Germany, only serious or recidivant skin diseases which oblige the victim to cease all activities that could have caused, aggravated or reactivated these conditions can be formally recognized and possibly give entitlement to the payment of benefits.

(22) See also "Asbestos-related occupational disease in Europe" (March 2006) - <http://www.eurogip.fr/images/publications/EUROGIP-24F-MPamiante.pdf>

case.

The graphs show that Denmark registers far more reports than the other countries.

Since recognition rates are rather lower in Denmark than in the other countries, it would seem that it is not (simply) the prospect of recognition, and where applicable compensation, which encourages claimants to undertake the claim for recognition procedure or not.

The high reporting levels in Denmark could well be a consequence of the efficiency of the system as a whole:

- The initiative for the procedure is mainly entrusted to the doctor, i.e. to the person who has sufficient knowledge to establish a link between the disease and the occupation;

- This doctor is given incentives (financial but also legal incentives) to report;

- The electronic procedure is facilitated; the authorities give priority to the combat against under-reporting, which notably takes the form of the creation of a proactive system of detection of occupational cancers and studies and reports on the subject.

Moreover, it may be noted that this country also ranks in first place for recognition of two of the four most frequent categories of occupational diseases studied: hypoacusia and skin diseases. It can be conjectured that this large number of cases recognized is a consequence of the large number of reports, except when insurance factors (i.e. the potential for compensation for the disease paid by the insurer) significantly filter the claims, which is the case for multifactorial diseases (cancers, MSDs).

The second observation based on reading these graphs concerns France: this country has a good or better level of reporting (compared with the other countries) for diseases that it recognizes better than elsewhere (i.e. for which the recognition rate is higher). For MSDs, the large number of reports is probably a consequence of the large number of cases recognized. It should be remembered that the existence

of a strong presumption of imputability associated with the French list of occupational diseases greatly facilitates the recognition of multifactorial diseases, unlike countries such as Germany and Denmark, where the search on a case-by-case basis for the relation between the disease and the work activity during the investigation phase leads to numerous rejections.

Regarding hypoacusia and skin diseases, we note that although the recognition rates in France are not lower than those in other countries, there are comparatively fewer reports.

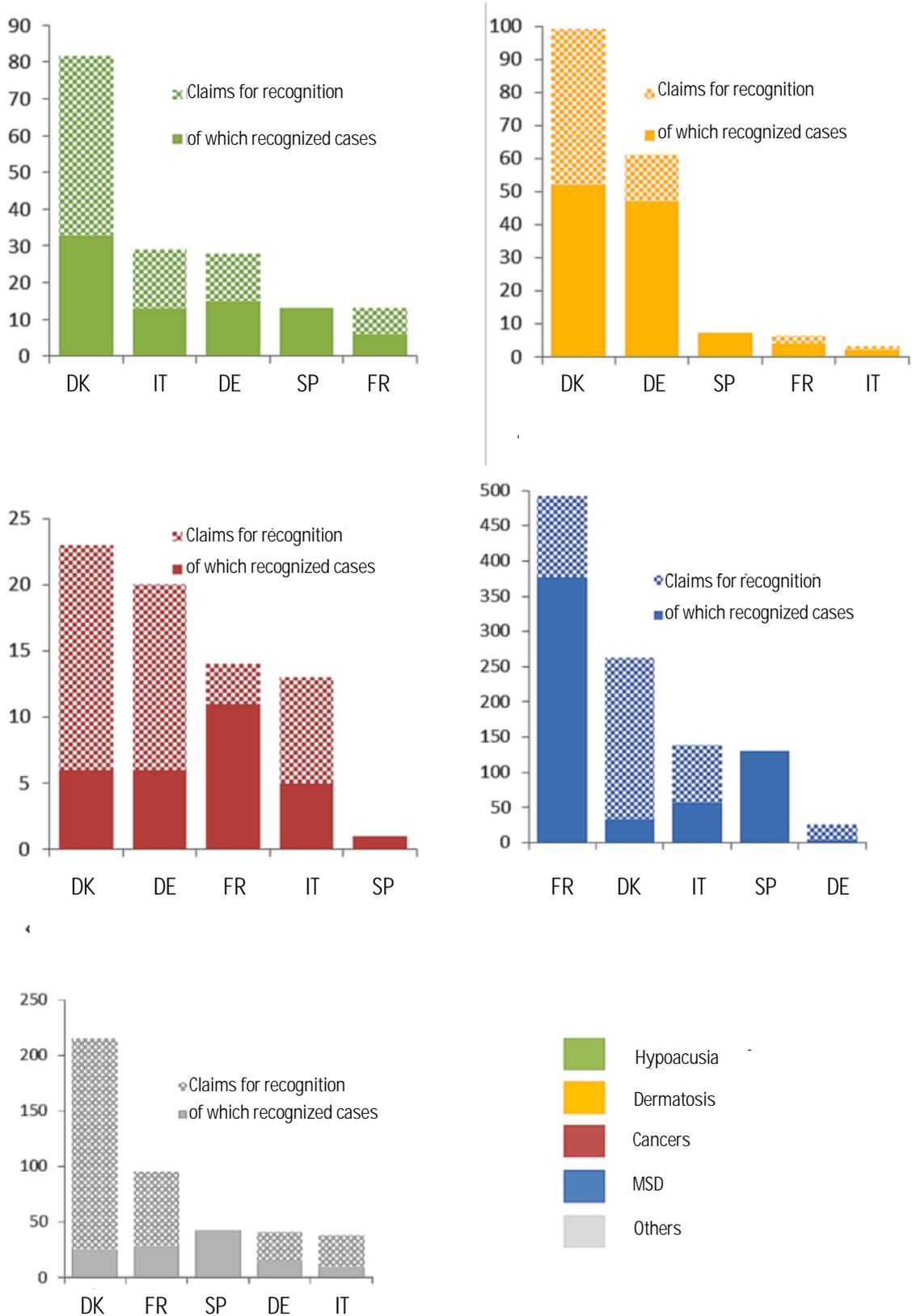
Germany, for its part, is characterized by a particularly low level of MSD reporting. It is well known that in the current state of the regulatory conditions for recognition of MSDs and the investigation procedure, this category of diseases is not likely to be covered more by the German occupational health and safety insurance system.

And yet it is not appropriate to speak of under-reporting in this case. The (good) German ratios show that the doctor (the main player for reporting in Germany) is thoroughly capable of detecting the possible work-related origin of the other categories of diseases: this country ranks second for hypoacusia reports (with Italy), skin diseases and cancers. Regarding MSDs, it seems that doctors anticipate a likely rejection of the case by the insurer and decide not to initiate the procedure.

Italy, for its part, is at the mid/lower end of the ranking, and is characterized by a preponderance of MSDs in the reports received by INAIL; the number of MSDs reported is experiencing exponential growth, especially since they were included in the list of occupational diseases in 2008.

It is hard to draw conclusions from the Spanish ratios, given the lack of data concerning reports to the insurance organizations. However, there is no doubt that Spain faces substantial under-reporting of occupational cancers, which even innovative local experiments for detection of occupational diseases (see Part 3) seem powerless to combat.

Graph 7: Reporting and recognition ratios broken down by disease in five European countries (2011)



# 3 - Combat against under-reporting of occupational diseases in Denmark, Spain, France and Italy

Of the five European countries studied previously, four are dealt with in this part. Whereas in Germany the phenomenon of under-reporting is perceived as being marginal, in Denmark, Spain, France and Italy, it is admitted that a significant number of occupational diseases are not reported. There are many reasons for this:

- The lack of information and training for general practitioners regarding occupational diseases, hence their lack of interest in searching for possible work-related causes of the disease; in their defence, these doctors are often not acquainted with their patient's work station and certain diseases - such as cancers - are often of a multifactorial nature and occur many years after exposure, which does not make it easy to establish a link with the victim's occupation;
- Employees' lack of information regarding their possible exposure to risks and regarding the specific insurance system for occupational diseases;
- The employee's fear of losing his (her) job;
- The complexity and length of the procedure, and the difficulty in providing proof of risk exposure under the complementary recognition system.

There are other possible explanations depending on the country and the constraints related to its reporting system.

The four countries covered here have expressed, and still do express, an interest in the issue of under-reporting of occupational diseases. Often they have even tried to measure its magnitude (cf. 3.1). Logically, they have also implemented experimental measures to combat the phenomenon (cf. 3.2).

## 3.1 National observations: causes and magnitude of the phenomenon

The phenomenon of under-reporting has been denounced in ad hoc reports produced in Denmark and France. It is documented in Spain and Italy, more sporadically.

### Denmark

Denmark treats the under-reporting of occupational dis-

eases as a priority concern, and has done so for the past several decades. Three studies published in 1990, 1996 and 2007 showed the existence of this phenomenon and quantified it, especially for occupational cancers. A recent 2012 report, specifically covering the phenomenon of under-reporting of occupational diseases, approaches the issue from the qualitative and quantitative viewpoints.

#### Three studies on the under-reporting of occupational cancers

Each of the studies aimed to measure, over successive periods and for two types of cancers chosen for their well-known link with an occupational exposure, the difference between the number of cases registered in the Cancer Register<sup>(23)</sup> and the number of cases reported to the Labour Inspectors or the National Board of Industrial Injuries<sup>(24)</sup>.

They covered two diseases for which doctors, and especially the specialists in charge of these cancers, are presumed to know their link with an occupational exposure. The diseases are pleural mesothelioma caused by asbestos and adenocarcinoma of the nasal cavities and sinuses related to wood dust.

The first study in 1990<sup>(25)</sup> estimated that over the period 1983-1987, the rate of under-reporting of these two types of cancers was about 50%. Only 92 of the 268 cases registered in the Cancer Register (i.e. 34%) had been reported, whereas the conclusions of the study asserted that 191 of them ought to have been reported.

This study had also covered the quality of the medical files held by hospital departments for patients diagnosed in 1986 and 1987. Out of 81 files studied, 51 had not been reported to the Labour Inspectors/National Board of Industrial Injuries.

The study showed that the exposure history is not always recorded in the medical file, even when a work-related origin of the disease is highly possible. The exposure history proves absent, or of very poor quality, in 75% of cases not reported (38 out of 51). In this context, the question is how the head of a hospital department can fulfil his obligation of reporting suspected cases if the data relating to occupational exposure are not entered in the medical file.

(23) The Danish cancer register is administered by the National Health Office (*Sundhedsstyrelsen*); it lists all cases of cancer in Denmark since 1942, with a high rate of coverage of the country.

(24) As explained in 1-2, cases of diseases for which a work-related origin is suspected are the subject of a joint report to these two organizations.

(25) Reporting of occupational cancer in Denmark. Skov T, Mikkelsen S, Svane O, Lynge E. *Scand J Work Environ Health* 1990

**Table 1: Estimate of medical files of cases of pleural mesothelioma and adenocarcinoma of the nasal cavities and sinuses diagnosed in 1986 and 1987 and not reported to the Labour Inspectors/National Board of Industrial Injuries (Denmark)**

Quality of the information on occupational exposure contained in the medical file	Pleural mesothelioma	Adenocarcinoma of the nasal cavities and sinuses	Total
History concluding in occupational exposure, but case not reported	3	0	3
No exposure history, although patient alive at the time of diagnosis	11	5	16
Exposure history of mediocre quality	4	0	4
No exposure history, diagnosed after deaths	18	0	18
History concluding in no occupational exposure	8	2	10
<b>Total</b>	<b>44</b>	<b>7</b>	<b>51</b>

The second study, published in 1996<sup>(26)</sup>, which covered the period 1983-1990, merely corroborated the conclusions of the previous study and noted that no improvement had been observed.

The most recent study<sup>(27)</sup>, published in 2007, performed the same work of comparison, over the period 1994-2002, between cases registered in the Cancer Register and those reported to the National Board of Industrial Injuries. It showed that, over the defined period, only 55% of mesothelioma cases and 41% of adenocarcinoma cases registered in the Cancer Register were reported to the insurance organization. 91% and 87% of reported cases respectively were recognized as occupational cancers (see Tables 2 and 3).

The cases not registered with the National Board of Industrial Injuries were searched for in the databases of the

supplementary pension organization ATP (*Arbejdmarkedets Tillaegspension*), and also in the Civil Status Register (*Det Centrale Personregister*). The aim was to collect information on the positions held by the persons in question since 1964, and thus assess the probability of an occupational exposure to asbestos or wood dust.

For the cases not reported to the insurance organization, searches performed in the databases made it possible to establish that information on the patients' career records was available for three-quarters of them.

Their career records showed that 60% of men (and 5% of women) suffering pleural mesothelioma had been exposed to asbestos and that 32% of men (0% of women) afflicted by adenocarcinoma had been exposed to wood dust.

**Table 2: Patients suffering pleural mesothelioma listed in the Cancer Register from 1994 to 2002 and reported to the National Board of Industrial Injuries (Denmark)**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	Total
Cases reported:										
Cancer register	69	64	68	82	73	97	80	90	72	<b>695</b>
National Board of Industrial Injuries	40	34	35	55	44	55	43	39	36	<b>381</b>
Proportion (as a%)	58%	53%	51%	67%	60%	57%	54%	43%	50%	<b>55%</b>
Cases recognized by National Board of Industrial Injuries	34	27	26	45	38	51	38	38	34	<b>331</b>
Recognition rate (as a%)	85%	79%	74%	82%	86%	93%	88%	97%	94%	<b>87%</b>
Cases not reported	29	30	33	27	29	42	37	51	36	<b>314</b>

(26) Underreporting of occupational cancers in Denmark, Danø H, Skov T, Lynge E., *Scand J Work Environ Health* 1996

(27) Registration of selected cases of occupational cancer (1994-2002) with the Danish National Board of Industrial Injuries, Hansen, Rasmussen, Omland, Olsen. Danish National Board of Industrial Injuries, 2007

**Table 3: Patients suffering adenocarcinoma of the nasal cavities and sinuses listed in the Cancer Register from 1994 to 2002 and reported to the National Board of Industrial Injuries (Denmark)**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	Total
Cases reported:										
Cancer register	15	9	10	9	10	16	15	8	17	<b>108</b>
National Board of Industrial Injuries	6	5	6	4	6	5	6	2	4	<b>44</b>
Proportion (as a%)	40%	56%	60%	44%	60%	31%	40%	40%	24%	<b>41%</b>
Cases recognized by National Board of Industrial Injuries	5	5	5	3	5	5	6	2	4	<b>40</b>
Recognition rate (as a%)	83%	100%	83%	75%	83%	100%	100%	100%	100%	<b>91%</b>
Cases not reported	9	4	4	5	4	11	9	6	13	<b>64</b>

**Table 4: Occupational exposure of patients suffering pleural mesothelioma and adenocarcinoma of the nasal cavities and sinuses not reported to the National Board of Industrial Injuries between 1994 and 2002 (Denmark)**

Disease	Gender	Total	Information on work activity		Exposure to asbestos/wood dust (%)
			without	with	
Pleural mesothelioma	M	224	48	176	105 (60%)
	F	90	29	61	3 (5%)
Adenocarcinoma of the nasal cavities and sinuses	M	38	3	35	11 (32%)
	F	26	9	17	0

The study concluded that there was substantial under-reporting of these two types of cancers, and this under-reporting has apparently not changed since the 1980s.

**A report on the under-reporting of occupational diseases**

In May 2012, a working group mandated by the Minister of Labour and coordinated by the OI/OD insurer published a report on the under-reporting of occupational diseases<sup>(28)</sup>.

The task of the group of experts was to measure the magnitude of the phenomenon, to explain its causes and to propose practical solutions. This work was performed based on statistical analysis of the source of the reports (claimant, frequency per claimant, geolocation of the claimant, diagnostic, etc.), studies performed on eczema among hairdressers (2011), the three aforementioned studies on cancers and a 1998 study on the position of occupational exposure in the consultations of a broad sample of general practitioners, and based on interviews conducted with a sample of family doctors.

Because, in Denmark, the doctor is the cornerstone of the reporting system (cf. 1.2), the experts' work mainly concerned the ability of the medical profession to detect and then report cases for which a work-related origin is suspected.

The report concluded that under-reporting is highly likely in the country. While the scale of the problem varies depending on the region, the branch of activity and the disease, unreported cases as a whole are estimated at between 1,000 and 2,000 per year (in 2011 Denmark registered about 18,000 claims for recognition).

Regarding doctors' practices, around half of general practitioners (45%) reported no case during the period from 1 July 2010 to 31 December 2011.

80% of the doctors who reported during this reference period made between one and five reports. On average, each hospital doctor or specialist reports 4 to 5 times more cases than the general practitioner.

As regards the causes, and therefore the remedies, there are numerous proposals.

The obligation of reporting should not be restricted to doctors and dentists, but extended to other practitioners in the health care sector such as psychologists and chiropractors, and this obligation should be reintroduced for employers (abolished in 1999).

To overcome doctors' concern about reporting when they have a doubt concerning the work-related origin of the disease or when it is impossible for them to establish a precise diag-

(28) Report of the working group on reporting of occupational diseases published on 23 April 2012 (in Danish): <http://www.ask.dk/~media/ASK/pdf/Rapporter/PDFrapportanmeldelseafarbejdsskaderpdf.ashx>

nostic, it would be necessary to remind them of the scope of their obligation to report, and make available to them on the website of the ASK insurer concise information concerning the pathologies related to various work stations.

Because some doctors do not feel sufficiently invested/involved in the procedure (having no feedback regarding the action taken for the cases that they report), it is planned to inform them of the outcome of the procedure.

As regards the technical difficulties encountered with electronic reporting, it is important to ensure that doctors do not devote to it more than 10 minutes per case.

Several other paths are explored. Since interviews with doctors have revealed that the cause of the disease was not their priority approach (they are mainly focused on healing the disease), it would be advisable to continue informing them about their obligation of reporting (targeting doctors who have never made a report). It is also planned to target certain groups of specialists who are concerned in particular, and to continue - via the trade unions - to raise workers' awareness of the existence of a specific insurance system, to facilitate electronic reporting and to assess its ease of use, to create an information area on the website of the ASK insurer dedicated exclusively to the criteria for suspicion which should trigger an occupational disease report, and to assign higher priority to occupational medicine in further training for doctors.

As regards experiments with proactive systems to search for occupational diseases, the report proposes examining the possibility of automatic reporting between the National Health Office (*Sundhedsstyrelsen*) (using certain centralized health registers) and the ASK insurance organization, for new diagnoses; this mutual signalling of cases already exists for mesothelioma and sinus cancer.

For some pathologies (skin disease, asbestosis, lung cancer and bladder cancer), a letter could also be sent automatically to the family doctors of the patients concerned, explaining to them the possibility of reporting these cases.

Moreover, the working group recommends ensuring that the form for reporting ODs is displayed in all medical information systems (*lægesystemer*)<sup>(29)</sup> existing in Denmark. This requires integration into or adaptation to the existing medical information systems. Pragmatically, it is recommended that the National Board of Industrial Injuries establish contact with

the MedCom organization<sup>(30)</sup> in order to perform an expert appraisal to evaluate the technical feasibility and cost of this integration.

Finally, as a short-term initiative, the working group recommends to the National Department of OIs/ODs that it contact the regional authorities to have created, on the Health pages of their websites, a link to the website of the National Department of OIs/ODs.

The working group concludes in its report on under-reporting that it is essential not to fall into the opposite excess and end up with a phenomenon of over-reporting which would create unjustified expectations among patients/victims.

## Spain

In Spain, the issue of under-reporting of occupational diseases is not as consensual as in Denmark.

According to the insurers (the Mutuas and the AMAT which federates them), this is an epiphenomenon, whereas it is strongly denounced by the trade unions.

Most national experts agree that there is substantial under-reporting in Spain, especially for occupational cancers. This is deplored in numerous articles in the specialist literature<sup>(31)</sup>.

The AMAT and the Mutuas prefer the expression "under-diagnosis" to "under-reporting", which would suggest a deliberate intention not to report. The insurers nevertheless admit the existence of some under-reporting before the regulatory changes made in 2006. This was notably a consequence of the obsolescence of the Spanish list of occupational diseases in force between 1978 and 2006, but also of the old procedure which provided that only the employer could report a suspected case to the Mutua to which he was affiliated and, finally, the off-putting effect of the visit by the Labour Inspectors to the company in question, provided for in each case of suspected occupational disease.

At present, according to the insurers, under-reporting does not exceed 20%.

Moreover, 15% of occupational injuries are claimed to be in fact incorrectly classified occupational diseases, which has no consequences for compensation of the victim. The proportion

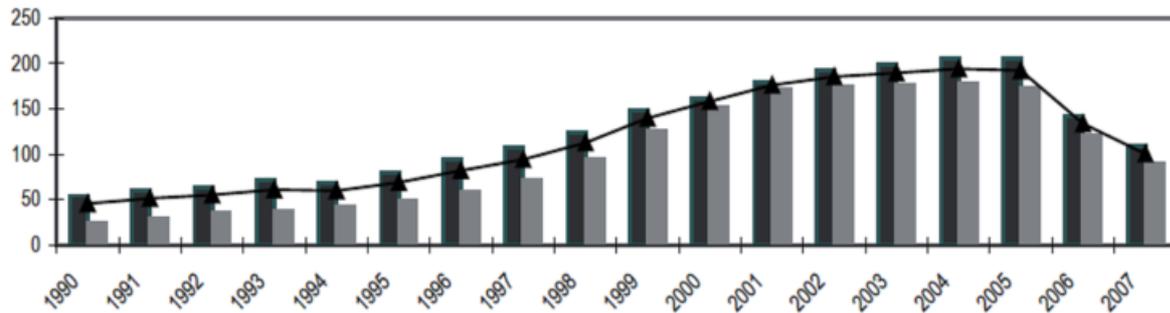
(29) The *Lægesystemer* are systems for computerized management of medical files, set up in medical centres to make it possible, inter alia, to send electronic medical prescriptions, receive analysis results from laboratories or hospital microbiology or pathology departments, receive correspondence from hospitals, the doctor on call, specialist doctors, etc., and establish statistics based on key words. There are about fifteen medical information systems (e.g. Docbase, MedWin, Novax, XMO, Æskulap, EMAR, WinPLC, Web Praxis, MultiMed Web, Ganglion).

(30) MedCom is a joint project set up in 1995 between public-sector authorities (Ministry of Health, regional governments, decentralized authorities) and private companies in the health care sector to contribute to the development, experimentation, dissemination and quality of electronic communication and information in the health care sector.

(31) Análisis del descenso del reconocimiento de las enfermedades profesionales en España, 2006-2007. Montserrat Garcia Gomez, Rosario Castaneda Lopez. Arch Prev Riesgos Labor 2008; 11 (4): 1996-2003 // Sistema de declaracion de enfermedades profesionales en España: conclusiones de un taller. <http://www.ladep.es/ficheros/documentos/Sistema%20de%20declaraci%F3n%20de%20enfermedades%20profesionales%20en%20Espa%F1a%202009.pdf>

La sorprendente historia de las enfermedades profesionales en España. Fernando G Benavides, Ana M García. Medicina clinica, vol 131, num 14, 25 October 2008 // Asbestos-related occupational cancers compensated under the Spanish National Insurance System, 1978-2001 - Montserrat Garcia-Gomez, 2014, International Journal of Occupational and Environmental Health

Graph 8: Rate of recognition of occupational diseases (according to gender) for 100,000 people insured between 1990 and 2007 (Spain)



Source: Análisis del descenso del reconocimiento de las enfermedades profesionales en España, 2006-2007 (see note 32)

of ODs among OIs could be higher, according to the Spanish Association of Occupational Medicine Specialists (AEEMT), at around 50%.

However, the denunciation of under-reporting has become stronger since the mid-2000s. Although it is not possible to exploit the number of claims for recognition (since this information is not available), it is clear that there has been a fall in the number of cases recognized since 2006, a year in which there was a 27% decline relative to the previous year (the figure thus fell from 30,030 cases recognized in 2005 to 21,905 in 2006); this trend has continued, because in 2007 there were only 17,061 cases recognized, which represents a further 23% decline.

This reversal of the trend occurred the day after a regulatory amendment<sup>(32)</sup> having a major financial impact on the Mutuas. This legislation, which came into force on 1 January 2006, established that the Mutuas would from now on bear the financial cost of pensions for the permanent disability and death of victims of occupational disease, capitalizing the amount of those pensions. Formerly, the Mutuas repaid to INSS the amount of the pensions in the form of a percentage of the contribution paid by companies. This new method of calculation would incentivize the Mutuas to recognize fewer occupational diseases.

It has been complained that the Mutuas, to avoid being forced to increase the amount of their contributions paid by companies (and thus risk losing affiliations, because the 20 Mutuas are in competition), apparently deliberately slashed the number of occupational diseases recognized and compensated.

Moreover, in 2007 the regulatory framework for occupa-

tional diseases was profoundly altered (new list of occupational diseases, new reporting procedure, new statistical registration system, cf. 1.3). Numerous stakeholders have complained of the dysfunctions of the new system: it is claimed that the IT application is excessively rigid and does not allow optimal reporting.

These two events apparently account for the fall in the number of occupational diseases recognized since 2006. These explanations are considered more than plausible, since the fall in the number of occupational diseases is too pronounced to be merely a consequence of progress in the area of workplace safety.

The under-reporting already noted before 2006 apparently grew worse.

The organization Instituto Sindical de Trabajo, Ambiente y Salud, ISTAS<sup>(33)</sup> tried to estimate the under-reporting of occupational diseases in Spain in reports in 2006, 2007, 2008 and 2009.

By comparing the official recognition statistics, the available data regarding mortality, incidence and prevalence, and by estimating the attributable risk based on several national and international epidemiological sources, ISTAS in its 2008 report<sup>(34)</sup> found an average under-reporting rate of 80% (see Table 5).

According to ISTAS, under-reporting especially concerns lung cancers and skin diseases.

There can be many reasons for this: under-diagnosis by the doctors of the National Health Service, the new procedure of capitalization of the pension for occupational diseases which dissuades recognition by the Mutuas, and companies' persistent fear of receiving a visit by the Labour Inspectors.

(32) Orden TAS/4054/2005, de 27 de diciembre, sobre constitución por las mutuas de accidente de trabajo y enfermedades profesionales de la Seguridad Social del capital coste correspondiente a determinadas prestaciones derivadas de enfermedades profesionales. BOE núm. 310, of 8 December 2005

(33) The Trade Union Institute for Work, the Environment and Health is an independent, technical and trade union foundation whose objective is to promote and improve working conditions, the level of health and safety in the workplace and environmental protection in Spain. The ISTAS was founded in 1996 by the Comisiones Obreras trade union confederation (CC.OO.).

(34) Impacto de las enfermedades de origen laboral en España, April 2009, ISTAS at <http://www.istas.ccoo.es/descargas/Mortalidad%20y%20morbilidad%20de%20origen%20laboral-Informe%202009.pdf> (in Spanish)

**Table 5: Summary ISTAS estimate of the under-reporting of occupational diseases for 2008 (Spain)**

Diseases	Number of occupational diseases reported/recognized	Estimated number of occupational diseases	Rate of under-reporting <sup>(35)</sup>
Osteomuscular conditions	13,966	31,812	56,1%
Skin diseases	1,242	12,909	90,4%
Hypoacusia or deafness	790	11,642	93,2%
Respiratory diseases	850	9,467	91%
Malignant tumours	62	6,291	99%
Infectious diseases	493	2,390	79,4%
<b>TOTAL</b>	<b>18,700</b>	<b>90,869</b>	<b>79,4%</b>

Source: From the report mentioned in note 34

## France

The issue of under-reporting of occupational diseases is a regular subject of debate. Since 1997, a Commission chaired by a magistrate of the “Cour des comptes” (government audit agency) performs work every three years to estimate the cost of under-reporting of occupational injuries and diseases<sup>(36)</sup>. This estimate is the subject of a detailed public report. The latest report<sup>(37)</sup> (in June 2014), after assessing the implementation of the proposals of the previous Commission and recent developments in the combat against major occupational risks, analyses the main reasons for the under-reporting and under-recognition of occupational risks (see Table 6).

These reasons have changed little since the previous report in 2011. Thus, the factors contributing to the under-reporting of occupational diseases may be due to the employers (in particular through concealment behaviour or failure to display/update the risk assessment document), the employees themselves (ignorance of the relation between the disease and the work activity, fears for their job), or to health care professionals (persistent lack of adequate training and information for health care doctors, reluctance to report the disease when that could have repercussions on employment, lack of cooperation between occupational medicine services and non-hospital health care providers). The coexistence of occupational disease compensation systems and the disability system could also contribute to the phenomenon of under-reporting.

As regards factors identified as possibly being a source of underrecognition, the report mentions great heterogeneity,

depending on the fund, in procedures for recognition of occupational diseases and in determining permanent disability rates, the obsolescence of some occupational disease tables and the difficulty of revising them, and the underrepresentation of mental illnesses relative to workers’ exposure to psychosocial risks.

Limiting the exercise to the field of diseases for which their occupational nature could be recognized within the framework of the present legal system, the Commission then estimates the number of occupational diseases under-reported based on the available epidemiological statistics, in order to determine the proportion of diseases attributable to work-related causes.

Bear in mind that this is a very approximate estimate, the aim of which is to calculate a financial range which will be used to determine the amount repaid by the “occupational risks” branch to the “health insurance” branch of the Social Security system.

Applying to these estimates an average cost for each type of disease (calculated based on financial data from the CNAMTS and, for cancers, also on the basis of a study by the Institut National du Cancer), the 2014 report determined a financial range for the annual cost of under-reporting of occupational diseases of €596 million to €1,224 million (to which can be added €99 million for the under-reporting of occupational injuries).

The amount of the allocation for 2014 and the following two years will be set based on this financial estimate by the (annual) Budget Act for the Social Security system. This allocation amounted to €710 million in 2011 and €790 million in

(35) Since the statistics for reporting to the Mutuas are not available, these under-reporting rates were calculated based on the occupational disease statistics registered by the CEPROSS system, i.e. recognized cases. This method of estimation, assimilating recognized cases to reported cases, nevertheless remains valid, because the Mutuas assert that their recognition rates are very high.

(36) This estimate of the cost of under-reporting is used to determine, in accordance with Article L.176-2 of the Social Security Code, the annual amount that the “occupational risks” insurance branch pays to the “sickness-maternity-disability-death” branch, to allow for the expenses incurred by the latter for affections not reimbursed by the former.

(37) Soon available on Internet (in French) - Previous report (2011) at [http://www.securite-sociale.fr/IMG/pdf/11\\_diricq.pdf](http://www.securite-sociale.fr/IMG/pdf/11_diricq.pdf)

**Table 6: Summary estimate of under-reported cases of occupational diseases within the framework of the L-176-2 Commission (France)**

Diseases	Under-reporting assessment criteria	Estimated number of cases under-reported (for 2012, salaried workers exclusively)
Cancers	Source: INVS*, IARC* Attributable risk fraction: 3% to 6% for men/ 1.5% to 6% for women	Not estimated by number of cases, only by cost (between €279m and €728m)
Main MSDs	Source: INVS (2009 Study) 45% rate of under-reporting for carpal tunnel, 50% for tendinitis of the elbow, hand and fingers, 30% for tendinitis of the shoulder	Carpal tunnel: 9,900 Tendinitis of the elbow: 6,531 Tendinitis of the shoulder: 84 Tendinitis of the hand & fingers: 2,518
Lumbar rachis conditions	Source: INVS (2009 Study) Rate of under-reporting between 40% and 65%	Between 1,334 and 3,717
Asthma	Source: Various studies of the general population between 1996 and 2000 Attributable risk fraction: 15%	Between 104,808 and 158,262
Chronic obstructive lung diseases	Attributable risk fraction: 10% to 20% Prevalence of occupational origin: 1% to 2%	Between 8,781 and 26,481
Dermatosis	Incidence of occupational origin: between 0.5 and 0.7 per 1000 workers per year	Between 8,441 and 11,981
Deafness	Sources: AFFSE 2004 + INVS	11,825

\* Institut national de veille sanitaire (INVS): French Institute for Public Health Surveillance - International Agency for Research on Cancer (IARC)

2012 and 2013.

After estimating the scale and cost of under-reporting, the Commission makes recommendations for better support to victims of occupational diseases by the “occupational risks” branch:

- Need for improved training and information for doctors;
- Simplification and harmonization of the applicable regulations in the area of compensation by the “occupational injuries and diseases” and “disability” insurance organizations;
- Ongoing efforts to audit companies;
- Research on methods for storage and archiving of risk assessment documents, especially if the company disappears;
- Incentives for hospital personnel to report more frequently the occupational nature of a disease or injury;
- Continuing updating of occupational disease tables;
- Improvements in the collection of scientific information on occupational risks and coordination of research organizations.

## Italy

There exists no specific study on the subject of under-reporting on the national level. But all the reports by the par-

liamentary commission for enquiry on occupational injuries and diseases (1997, 2006, 2013)<sup>(38)</sup> mention in the chapter dedicated to statistics that “INAIL, employers and employees and industrial doctors have always considered that occupational diseases are an underestimated phenomenon”.

And yet, in recent years the insurance organization INAIL has posted a significant increase in claims for recognition (+ 41.7% between 2007 and 2011 for the industry and services sector).

This reporting boom is due to a series of factors, starting with the coming into effect of a new list of occupational diseases in 2008. This list includes several diseases which were formerly able to be recognized under the complementary system, especially conditions inherent in mechanical overloading affecting the musculoskeletal system, and which now benefit, like all listed diseases, from a legal presumption of work-related origin. Next, the designation in the new list of specific diseases, and no longer pathogenic agents, had a collateral technical effect in the form of multiple reports (which in 2009 were estimated at 20% of the total number of reports).

The increase in the number of claims for recognition is also apparently the positive consequence of public awareness raising campaigns (targeting workers, employers and family doctors), and in particular the greater number of training offers and information products.

(38) Last report (January 2013) available (in Italian) at <http://www.senato.it/service/PDF/PDFServer/BGT/697907.pdf>; see pages 62 et seqq.

Nonetheless, occupational cancers, of which about 2,000 are reported per year, are estimated as being indisputably underreported.

Numerous articles published in the *Medicina del lavoro* review and in *Quaderni di medicina legale del lavoro* emphasize the difference between the number of cases of occupational cancer expected on the basis of epidemiological studies and the number of cases reported to INAIL and compensated. Comparisons of epidemiological data and the statistics of INAIL (insurer)/ASL (cf. note 12 page 11) would thus make it possible to estimate the under-reporting of occupational cancers at more than 90%, apart from mesotheliomas and nasosinusoidal tumours (for which there is a systematic registration system: *Registri mesoteliomi e tumori nasosinusali*).

## Conclusion

Depending on the country, one observes that there is more or less a consensus on the issue of under-reporting of occupational diseases. When there is a differing opinion, it is that of the insurance organizations. As regards quantification, it proves difficult or even impossible on the national level and for all occupational diseases.

Likewise, the issue is judged of greater or lesser priority depending on the country. Some believe that their reporting system is efficient, but that it is necessary to improve doctors' ability to detect the work-related origin, and they are working on this via information system interconnections. Others consider that the reporting system entails perverse effects in itself.

## 3.2 Examples of good practices to combat under-reporting

In most European countries there are numerous products giving information on occupational diseases and on the possibility of their coverage by the Social Security system, intended both for doctors and for a wider public.

In particular, subjects considered from a public health perspective such as asbestos-related diseases, and more generally occupational exposure to carcinogenic agents or psychosocial risks, attract increasing media coverage.

We shall not list here all the communication campaigns on occupational diseases which have been and still are carried out in each country. Rather we shall choose to examine original and practical initiatives designed to search proactively for cases that could be recognized as occupational diseases, but which tend to elude the system of reporting to the insurance organization.

Nor will this be an exhaustive study of all the experiments carried out to combat under-reporting. A single initiative has been selected for each country concerned (Denmark, Spain, France and Italy); these are initiatives on which we have some hindsight and for which there exists an assessment of the results.

We shall see that a majority of initiatives aim at improved reporting of occupational cancers and that the tool often approved overwhelmingly is the computerized cross-checking of data.

### Denmark: Cross-checking of computer files

In July 2007, Denmark created a national system to combat the under-reporting of mesothelioma and cancer of the nasal cavities and sinuses, for which the links with exposure to asbestos dust for the former disease and to wood dust for the latter have been scientifically established.

A system for automatic and mutual signalling of cases corresponding to these two types of cancers was established by the National Health Office (*Sundhedsstyrelsen*), which administers the Cancer Register, and the National Board of Industrial Injuries.

The 2012 annual report of the National Board of Industrial Injuries<sup>(39)</sup> shows that this initiative had a major impact on the number of claims for recognition related to these two types of cancers. The number of claims increased by 50% for mesotheliomas after implementing the system. And the figures show that the system gave an even greater boost to cases of cancer of the nasal cavities (see Table 7).

The impact of this initiative on the number of cases recognized and compensated is less clear-cut, because this figure remains stable. In particular, the increase in the number of reports goes hand-in-hand with an increase in the number of reported cases rejected. It should be specified that the systematic nature of the transfer of files between the National Health Office and the National Board of Industrial Injuries means that many cases diagnosed incorrectly by the former are rejected by the latter. Moreover, in some cases the victims/their legal beneficiaries object to the insurance organization examining their file, which will in that case be rejected.

### France: Proactive search for potential victims

Since 2008, France has experimented a programme for detecting the possible work-related origin of tumours of the bladder in almost half of mainland France.

Occupational exposures (to polycyclic aromatic hydrocarbons derived from coal and charcoal, certain aromatic amines, and nitrosamine N-nitrosodibutylamine) are, together with

(39) In Danish (Appendix A 2 - Tables 3 to 6)

<http://www.ask.dk/~media/ASK/pdf/udgivelser/Redegoerelser%20til%20Folketinget/BEU-redeg%C3%B8relsen%202012%20pdf.ashx>

**Table 7: Number of claims for recognition of cases of mesothelioma and cancer of the nasal cavities to the insurer ASK between 2006 and 2012 (by year of diagnosis/reporting - Denmark)**

Cases reported	2006	2007	2008	2009	2010	2011	2012
Mésothelioma	92	141	141	155	127	126	138
Cancer of the nasal cavities	6	84	151	127	127	102	92
<b>Total</b>	<b>98</b>	<b>225</b>	<b>292</b>	<b>282</b>	<b>254</b>	<b>228</b>	<b>230</b>
Of which reported by:							
• Sundhedsstyrelsen (Cancer Register)	not applicable	51	122	102	123	104	116
• Doctors or other	98	174	170	180	131	124	114

**Table 8: Handling of claims for recognition of cases of mesothelioma and cancer of the nasal cavities between 2006 and 2012 (by year of diagnosis/reporting and by type of decision - Denmark)**

Decision on claims for recognition (year of the claim)	2006	2007	2008	2009	2010	2011	2012
Cases recognized	85	105	85	90	84	91	87
Cases rejected	13	118	207	192	170	137	135
Cases undergoing processing/other	0	2	0	0	0	0	8
<b>Total</b>	<b>98</b>	<b>225</b>	<b>292</b>	<b>282</b>	<b>254</b>	<b>228</b>	<b>230</b>

tobacco, the main risk factors for these tumours.

This experiment is being carried out in six regions<sup>(40)</sup> which account for 50% of the population of mainland France: Normandie and Nord-Picardie since 2008, Bourgogne-Franche-Comté since the end of 2010, and the Sud-Est and Nord-Est since early 2011.

The aim is to identify, among patients afflicted by a cancer of the bladder or the upper urinary tracts, those who were exposed during their working life to harmful agents, and make them aware of the procedure for reporting as an occupational disease with a view to recognition.

Concretely, the primary health insurance fund (CPAM) and the Medical Department, after identifying insured people who have been admitted with a chronic disease<sup>(41)</sup> ("Affections longue durée", ALD) for a bladder cancer (by a computer search), send to the targeted people a letter informing them of the procedure.

Those persons who agree are contacted by telephone to reconstitute their professional career on the basis of a questionnaire. If a work-related origin proves likely or possible, they are invited to fill in an occupational disease reporting form.

The programme has made it possible to detect 1,855 cases of potentially work-related bladder cancers since the start of the experiment (i.e. on average 6% of the bladder cancers registered as chronic diseases over the same reference period). In the regions undergoing the experiment, 961 occupational disease claims have been received for this type of cancer, about 60% of which have been recognized.

Graph 9 shows the change in the number of reports in each of the regions since 2008. It shows a latency time of two six-month periods between the start of the experiment (2008, end-2010 or early 2011 depending on the region) and the increase in the number of cases reported.

In all the participant regions, claims for recognition increased by a factor of 4.6 within 18 months to two years following the start of the programme. For the two regions which started earliest, this effect continues four years after the start of the experiment, with a trend to inflection of the curve.

As regards the recognition statistics, they too show an increase in the number of cases taken charge of.

(40) These are not strictly administrative regions: "Normandie" covers Basse-Normandie and Haute-Normandie, "Nord-Picardie" covers Nord-Pas-de-Calais and Picardie, "Sud-Est" covers Provence-Alpes-Côte d'Azur, "Bourgogne-Franche-Comté" covers Bourgogne and Franche-Comté and "Nord-Est" covers Champagne-Ardenne and Lorraine.

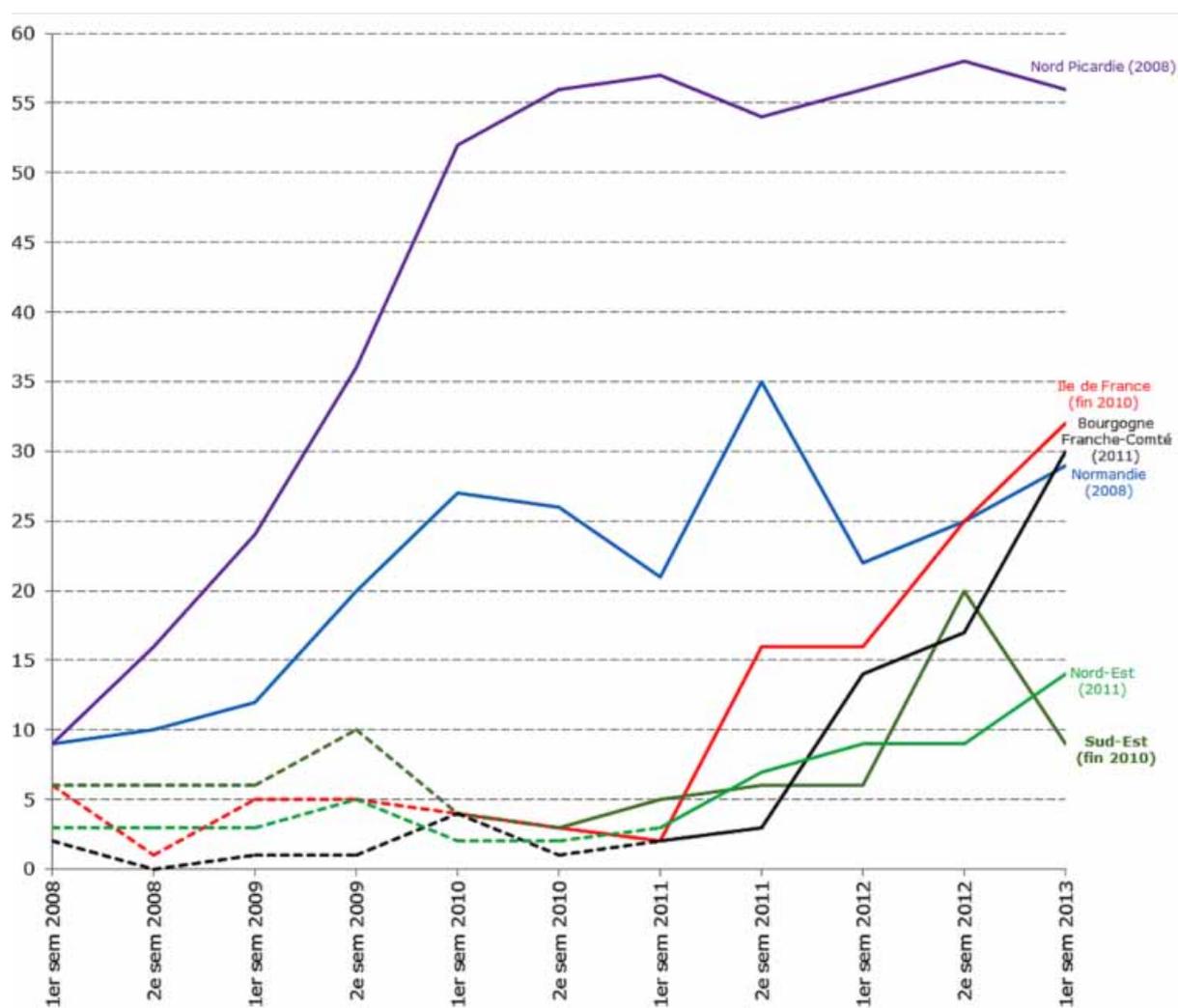
(41) Chronic diseases are conditions which involve prolonged treatment and an extremely costly therapy and which can therefore be 100% reimbursed by the health insurance organizations.

Table 9: Number of occupational diseases detected, reported and recognized by region, from the first six months of experimenting (situation at the end of first-half 2013 - France)

Regions	Number of chronic bladder cancer diseases	Possible work-related origin		OD reports received		Cases recognized as ODs	
		Number	% "ALD"	Number	%/possible work-related origin	Number	%/declarations received
Normandie	4,889	294	6%	236	80%	159	67%
Nord-Picardie	8,684	646	7%	474	73%	264	56%
Ile-de-France	7,684	243	3%	94	39%	68	72%
Sud-Est	6,023	57	1%	49	86%	19	39%
Bourgogne-Franche-Comté	2,235	510	23%	66	13%	27	41%
Nord-Est	2,722	105	4%	42	40%	32	76%
Total	32,247	1,855	6%	961	52%	569	59%

"ALD": see note 41 page 31

Graph 9: Change in the number of OD reports by region undergoing the experiment and by six-month period from 2008 to 2013 (France)



**Table 10: Claims for recognition (claims) and recognized cases (RC) of bladder cancer between 2008 and 2013 in the six regions undergoing the experiment (France)**

Regions		2008	2009	2010	2011	2012	2013 (1 <sup>st</sup> semester)
Normandie	claims	19	32	55	56	47	29
	RC	14	19	35	35	40	16
Nord-Picardie	claims	25	60	108	111	114	56
	RC	14	50	63	59	60	28
Ile-de-France	claims	7	10	7	18	41	32
	RC	7	6	4	15	32	20
Sud-Est	claims	12	16	7	11	26	9
	RC	5	4	1	6	5	7
Bourgogne - Franche-Comté	claims	2	2	5	5	31	30
	RC	1	2	3	3	16	8
Nord-Est	claims	6	8	4	10	18	14
	RC	5	1	3	8	13	11

A comparison with national statistics over a reference period from 1 January 2001 to 31 March 2013 shows that the regions undergoing the experiment recorded 84% of nationwide claims for recognition of bladder cancers as an occupational disease. And yet they account for only 49% of the chronic conditions corresponding to these diseases. The number of cases recognized as an occupational disease in these regions is, here again, significantly higher (84% of cases recognized nation-wide).

It is planned to adopt this system throughout France.

### Italy: Cooperation between hospitals and INAIL

As is often the case in Italy, innovative measures arise from regional or local initiatives. This is also true in the area of occupational health, in this highly decentralized country in which occupational risk prevention is entrusted to some extent to the national insurance organization (INAIL), but also to local authorities via the *Aziende Sanitarie Locali (ASL)*.

In Italy there are various systems actively searching for occupational cancers, in particular the OCCAM system<sup>(42)</sup> (Occupational cancer monitoring) based on the occupational case history identifiable/reconstituted from data from the Social Security system (*INPS: Istituto Nazionale della Previdenza Sociale*). But apart from the fact that there are many limitations to these systems, their consequences in

terms of claims for recognition to the insurance organization are not documented.

The initiative selected as an experiment in good practice for combating the under-reporting of occupational diseases is a system of systematic searching for occupational cancers based on cases diagnosed and treated in a hospital environment in the province of Brescia<sup>(43)</sup>.

Brescia Province is in Lombardy, northern Italy. It is a highly industrialized region with, according to the statistics of the territorial cancer registers, a high incidence of lung cancer.

Since May 1998 and following a joint initiative with the ASL as part of the activities of its Prevention Department, the Occupational Medicine Service attached to the chair of occupational medicine of the University of Brescia operates under an agreement with the occupational medicine operating unit of the civil hospitals of Brescia to identify cases of occupational cancer.

This systematic search initially focuses on lung cancers. The initiative involves the pneumology, thoracic surgery and general medical services and the hospital's radiology institute, which are the departments most deeply involved with the diagnosis and therapy of patients suffering lung cancer.

The purpose of this systematic search is to identify, assess and document cases of lung tumours for which a work-related origin is suspected. The primary objective is to improve the epidemiological data possessed by the ASL in order to more effectively prevent occupational cancers; but the initia-

<sup>(42)</sup> <http://www.occam.it/index.php>

<sup>(43)</sup> I tumori occupazionali "ritrovati". Considerazioni sul ruolo del Medico del Lavoro nella ricerca sistematica e nella diagnosi eziologica dei tumori polmonari, alla luce di una casistica. S. Porru, A. Scotto di Carlo, Donatella Placidi, Cecilia Arici, G. Tassi, L. Alessio, *Med Lav* 2006; 97, 4 :565-580 - [http://www.lamedicinadellavoro.it/summary/2006/vol\\_97\\_04/01\\_vol\\_97\\_04.pdf](http://www.lamedicinadellavoro.it/summary/2006/vol_97_04/01_vol_97_04.pdf)

I tumori occupazionali ritrovati: contributo del medico del lavoro e vantaggi della ricerca sistematica. S. Porru, A. Scotto di Carlo, L. Alessio. *G Ital Med Lav Erg* 2009; 31 :3, Suppl, 108-112

tive also has insurance-related consequences.

The stages of the procedure are as follows.

For each new lung cancer diagnosed, the hospital doctor in charge of the patient produces a brief occupational case history and fills in an electronic form containing the following information: civil status, clinico-histological diagnostic, tobacco abuse habits, a few aspects of the occupational case history collected "at the patient's bedside" (sector of activity, job, period, duration). Only a few minutes are needed to establish this document. This data sheet is sent to the hospital's Occupational Medicine Service.

Based on this sheet, the industrial doctor archives non-suspected cases (e.g. office work, housewife, etc.) and assesses suspected cases via a direct interview with the patient or a specialist consultation.

For each patient assessed, a clinical file is created containing the relevant documentation relating to the hospitalization (radiological, endoscopic and histopathological references which led to the cancer diagnosis).

A more detailed occupational case history is established; in 99% of cases, it is collected directly from the patient. It brings together information on the period of the work activity, the name and head office of the establishment, the main production characteristics of the company, the job, any use of or exposure to chemical or physical substances, wearing of PPE where applicable, and the presence in the company of airborne pollutant capture systems. This enquiry concerns the career record without any time limit; the industrial doctor consults the employment record book if it is available, if necessary seeks additional technical information (risk assessment document, environmental surveys) from the companies (in particular the manager of the risk prevention department) or goes directly to the workplaces. The industrial doctor of the company and the ASL's doctor (who has a good knowledge of the risk map on the local level) are sometimes consulted. The enquiry also concerns any of the patient's leisure activities that could have exposed them to carcinogenic agents.

Finally, the Occupational Medicine Service performs detection of other tumours, lung affections and occupational diseases.

On completion of this process, the Occupational Medicine Service sends to the doctor in the department which took charge of the patient a detailed report containing the occupational and pathological case histories and conclusions regarding the causal link between the disease and an occupational exposure, accompanied by references to the scientific literature. In addition, the report reminds the doctor of his medico-legal obligations: reporting of the case to the competent ASL (to be saved in its database), drafting of a report for the legal authority, and writing of the first occupational disease certifi-

cate to be submitted to the patient, necessary for making a claim for recognition to INAIL. Usually, advice is also provided regarding assistance to patients (e.g. procedures for obtaining access to the INAIL insurance organization, protection of the *patronati*<sup>(44)</sup>).

An assessment of this initiative was possible thanks to:

- The creation of a database containing all the cases assessed by the Occupational Medicine Service, excerpts from which are sent regularly to the ASL;
- The collaboration established with INAIL in Brescia, which performed a search in its own departmental database on the names supplied, thus making it possible to consult the decisions delivered by the insurer;
- Collaboration with the doctors of the INCA patronato of Brescia, which made it possible to monitor any legal developments regarding certain cases.

From 1990 to 1998 (the year of introduction of the systematic search system), only a few dozen cases of work-related lung cancer had been reported to the ASL's industrial doctor. From May 1998 to May 2005, 182 of these reports were made.

Out of the first 1,502 lung cancers diagnosed during the reference period, at least half were archived mainly due to insufficient factors that could suggest an occupational exposure to lung carcinogens. A few rare cases were excluded because the patients' state of health did not make it possible to establish their occupational case history.

The other half of cases was assessed for a possible work-related origin. Out of 693 cases, the Occupational Medicine Service confirmed an occupational aetiology for one-quarter of them, all male patients.

The identified risk factors are exposure to silica (26%), asbestos (9%) and polycyclic aromatic hydrocarbons; the sectors of activity are road transport, building painting, road surfacing and multiple exposures (12%).

For some patients, the pathological case history revealed the existence of another work-related disease: six patients had both a lung cancer and an asbestosis, a silico-asbestosis, a bladder cancer (for a leather tanning worker), a systemic sclerosis (attributed to exposure to silica) or a chronic obstructive lung disease. In seven cases, an asbestos-related benign pleuropathy was initially diagnosed.

27 patients already received an INAIL pension (23 for a silicosis, 2 for asbestosis, and 2 for pneumoconiosis due to several types of dust).

Out of the 182 cases for which an occupational aetiology was established by the industrial doctors, 142 claims for recognition were filed with INAIL. The other 40 cases corresponded to patients who were either non-residents in Brescia province and therefore depended on other INAIL centres, or their Occupational Disease Certificate had not reached INAIL, if

(44) In some cases, following recourse by a *patronato* which produces the documentation established by the Occupational Medicine Service, INAIL recognizes and pays compensation for a case initially rejected. Closer cooperation between the hospital and the *patronati* has been developed in order to provide technico-scientific support for cases with INAIL, or even during litigation; this cooperation has led to the recognition of several cases in court.

**Table 11: Assessment of cases diagnosed/appraised/recognized between May 1998 and May 2005 (Italy)**

Systematic search data	Number	%
Cases diagnosed	1,502	100%
Cases archived	806	53%
Underwent an occupational medicine appraisal	696	47%
Establishment of a causal link	182	12%
<b>INAIL insurance data</b>		
Claims for recognition received	142	100%
Cases recognized	48	34%
Cases rejected	76	53%
Cases undergoing appraisal at the time of publication of the data	18	13%

it had indeed been established.

One-third of the reported cases were recognized: 18 workers exposed to silica (of whom 13 with silicosis), 4 from the road transport sector, 3 from the vehicle repair sector or the metallurgy/mechanical engineering sector, 1 from road surfacing, 1 exposed to sulphuric acid in a wool textile mill, 3 building painters, 4 exposed to asbestos, 1 doctor exposed to ionizing radiation, 1 worker in the rubber industry, 1 in the galvanic treatment sector and 9 who had sustained multiple exposures.

To conclude, from a few cases recognized by INAIL each year before the start of the systematic search experiment, the number has increased to 48 cases recognized over a period of 7 years, with a recognition rate of about 38%, far higher than the 23% for this disease nation-wide in the period 1994-2002.

Despite the success of this approach, it is not yet clear why more than 60% of the cases for which the Occupational Medicine Service established a link with work were rejected by the insurance organization.

### Spain: SISVEL reporting software

The Region (or autonomous community) of Valencia, in southeastern Spain, is a pioneering region in the area of detection of occupational diseases.

In a context of under-reporting and lack of information allowing suitable planning of preventive measures, the regional government established as of 1991 a proactive system called SISVEL (*Sistema de información sanitaria y vigilancia epidemiológica laboral* - Workplace health information and epidemiological watch system) allowing health care professionals and services which were volunteers at that time to report to the Region cases of work-related health damage which should be watched.

This programme was then transformed to adapt to the new 2006 regulatory framework regarding occupational diseases and the new obligations of the regional health authorities.

SISVEL aims at two objectives:

- Mapping of occupational risks in the Region: this is an instrument which collects and analyses comprehensive and up-to-date information on occupational risks in each geographic area, so as to plan preventive health measures for workers;

- Proposing an alert system: this allows rapid, systematic identification of cases of diseases potentially of occupational origin diagnosed in the health system, and electronic transmission to the insurance organization as a claim for recognition.

In practice, doctors in the Valencia Healthcare Agency<sup>(46)</sup> and the industrial doctors of the Occupational Risk Prevention Departments are connected to SISVEL via the software's integration into the Ambulatory Information System (*Sistema de Información Ambulatoria* - SIA) for the former and via a Web portal for the latter.

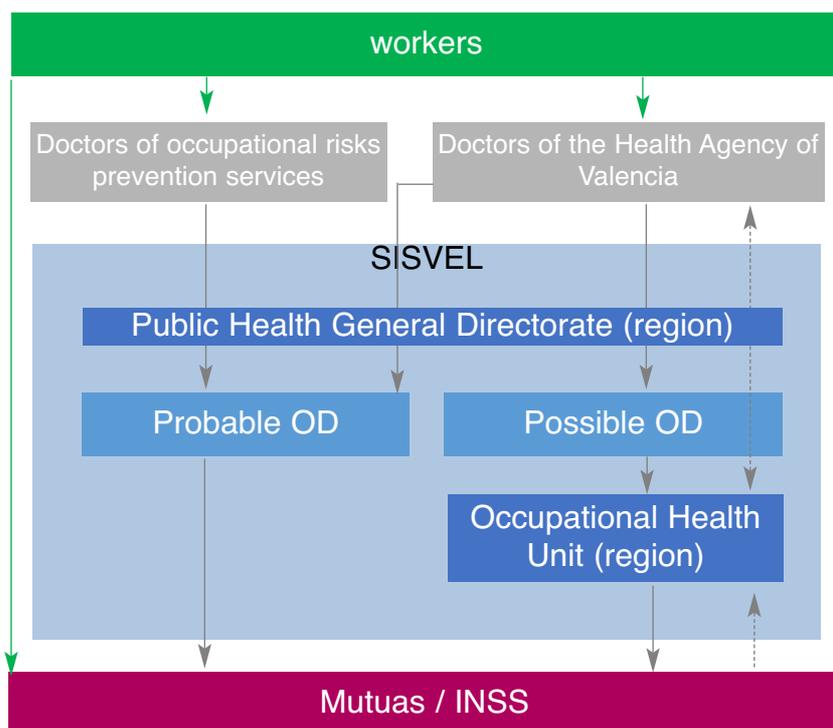
Each patient has on SIA a personal electronic medical file containing medical information and information concerning their work environment. When a diagnosis is established by a doctor (for patients over age 16) in SIA and it corresponds to one of those selected by SISVEL, a window opens to inform him of the possibility that the disease may be of work-related origin, and allows him to report the case to the insurer, via the General Public Health Department of Valencia.

The reporting doctor can report the case directly via SISVEL if he considers that the disease can be classified as work-related or else, in the event of a mere suspicion, request an appraisal by the occupational health unit of the competent Public Health Centre, which will be responsible, where applicable, for sending the file to the insurer, again via SISVEL.

The requested investigations consist of an epidemiological

(45) Since self-employed doctors are not subject to the obligation of reporting suspected cases of occupational disease, they are not involved in the SISVEL system.

Graph 11: SISVEL information circuit (Spain)



enquiry, the acquisition of information on occupational exposure to risk factor(s), if necessary a visit to the company and additional clinical information from the reporting doctor.

The industrial doctors of the occupational risk prevention departments are considered to have sufficient knowledge and competence, and they therefore have only one option, direct reporting.

Every report via SISVEL contains data concerning the worker, the disease, the employer, the reporting doctor and the type of report (“considers the disease work-related” or “suspect”). The first four sections are filled in automatically beforehand thanks to data available in the information systems onto which SISVEL has been grafted (SIA, information system of the National Health Service and SIP, the demographic information system).

The General Public Health Department of Valencia, acting as an intermediary, “filters” the reports transmitted by SISVEL (conditions of acceptability, no investigation concerning the substance of the cases), before submitting them to the competent insurance organization, Mutua or the National Social Security Institute depending on the employer’s choice of insurance policy. The insurer retains control of the decision to recognize the work-related origin of the disease. It is planned for there to be feedback regarding the decision taken to the Region and the detecting doctor.

It should be specified that, currently, the SISVEL medium accounts for about one-third of the recognized cases of occupational diseases (under the OD list system, or CEPROSS system) in the Valencia region. The other cases correspond to claims for recognition expressed on the occasion of direct visits by workers to a doctor of the Mutua with which their company is affiliated.

After a period of experiments on a reduced list<sup>(46)</sup> of diseases, the list of diagnoses triggering the SISVEL alert now contains 75 categories of diagnostics coded as ICD9<sup>(47)</sup>, which practically corresponds to the Spanish list of occupational diseases.

For certain categories of diseases, all the diagnoses were not taken into account by the system; a selection was performed by combining criteria of frequency, seriousness and etiological fraction of the risk. Benign diseases with a high incidence and a low proportion of cases attributable to work were therefore excluded, in order to prevent excessive activation of the alert system.

For each of the diagnosis categories considered, SISVEL includes associated suspicion criteria, with at least a confirmed clinical diagnostic and an occupational case history compatible with risk exposure, or risky activities or tasks.

As regards the system’s coverage, in 2014 it extended to all the primary health care centres in the Region, 70% of spe-

(46) When the system was created in 1991, the list of diseases concerned was limited to hypoacusia, carpal tunnel syndromes, contact dermatitis and asthma. SISVEL experienced initial expansion in April 2012, with 35 diseases.

(47) ICD9: International Classification of Diseases - Ninth Revision - <http://www.cdc.gov/nchs/icd/icd9.htm>

cialist health care centres, 60% of hospitals in the Valencia Region, 62% of the doctors in occupational risk prevention departments (i.e. 301 prevention departments concerned), the 10 Mutuas and the 16 Occupational Health Units present on the territory. The working population covered is estimated at 1.8 million workers.

This gradual extension of coverage has been accompanied by the circulation of a specific guide<sup>(48)</sup> and by a doctor training approach, in which there was a high rate of participation: in 2010, 75% of doctors invited to attend took part in the training seminars, i.e. 2007 doctors of the National Health Service, and the system was presented to the 500 industrial doctors of the Region's risk prevention departments.

40% of the cases reported by SISVEL to the Autonomous Community are not sent to the Mutuas for several reasons.

More than a third of them correspond to self-employed workers or workers with no remunerated activity who, as a result, are not covered by the Mutuas. For one-quarter of them, no relation has been established with the work activity; and for one-fifth of these "filtered" cases, the worker did not want their case to be sent to the insurer.

We note major differences between the various health care entities regarding rates of reporting via SISVEL.

The same differences are noted between Mutuas with regard to recognition rates (rate varying between 7% and 40%), while the rate corresponding to cases covered by the INSS (about 6% of persons insured on the national level) is estimated at about 50%.

As regards the reasons for rejection by the Mutuas, we know that the diagnosis was not confirmed for 24% of cases rejected and that the exposure criteria were not met for 30%; the other reasons are not known. Although there is an obligation for the Mutuas to provide feedback, it is optional to men-

tion the reason for rejection.

Finally, the best recognition rate (45.9%) is noted for cases reported by the Occupational Risk Prevention Departments, versus 24% for cases sent by the doctors of the National Health System without a preliminary appraisal request to the Occupational Health Unit of a Public Health Centre, and 29% with a preliminary appraisal.

The SISVEL 2012 report also provides information on the types of diseases reported: 80% of cases are osteoarticular conditions (more than 59% are carpal tunnel cases). Respiratory diseases account for only 6%. About ten cases of tumours (i.e. 0.7% of the total) are identified. The last two rates, which are extremely low, can partly be explained by the fact that they correspond to diagnoses which are generally produced by specialist departments in the hospitals, which are still not highly integrated into the SISVEL system.

In light of these results and the sharp increases observed between 2011 and 2012 (partly due to the incorporation of the specialist health care centres in 2012), the General Public Health Department of Valencia concluded that there was substantial under-reporting, especially of respiratory diseases, skin diseases and cancers.

In 2013, a series of measures were in progress to consolidate the system and improve the detection, reporting and recognition of occupational diseases:

- Extension of the SISVEL system's coverage to health care entities dependent on information systems other than the SIA;
- Encouragement of participation by health care professionals and improvement in the quality of communication reports;
- Optimization of feedback.

Although recognition ratios are not presented for each autonomous community, the CEPROSS data show that the

Table 12: SISVEL results for 2012<sup>(49)</sup> (Spain)

	SISVEL 2011-2012 results		2011	2012	Change 2012/2011
Number of OD cases reported via SISVEL to the General Public Health Department of Valencia			1,006	1,318	+30,8%
Number of OD cases sent to the Mutuas			431	708	+60,5%
Number of cases recognized as ODs by the Mutuas			144	200* (22 cases as acc. at work)	+37,9%*

This figure is preliminary; on the date of publication of these data, the decision process was ongoing by Mutuas for 109 cases. Considering the current recognition rate of 33.81%, the number of recognized cases would be 237, bringing the percentage change 60.7% compared to the previous year.

(48) Guía para la comunicación de sospechas de enfermedades profesionales, Generalitat Valenciana, conselleria de sanitat, 2010 <http://www.ladep.es/ficheros/documentos/Guia%20comunicaci%F3n%20sospecha%20enfermedades%20profesionales%20G%20Valenciana.pdf>

(49) Informe SISVEL 2012, principales resultados, Generalitat Valenciana, Conselleria de sanitat [http://www.sp.san.gva.es/DgspPortal/docs/guia\\_com\\_enf\\_sos.pdf](http://www.sp.san.gva.es/DgspPortal/docs/guia_com_enf_sos.pdf)

autonomous community of Valencia is the Region which in 2013 saw the biggest increase in the number of cases recognized as occupational diseases (+64% between 2012 and 2013).

Tools similar to SISVEL are currently being developed in at least nine other autonomous communities, in particular in Navarre, Catalonia and the Basque Country.

## Conclusion

Although these initiatives to combat under-reporting have a few common features (targeting of cancers, use of IT resources), they remain specific to the characteristics of each country.

In the highly decentralized countries of Spain and Italy,

good practices originate at the local level, and their implementation is facilitated by the strong relations existing between the various health care players (regions, hospitals, social insurance organizations).

Denmark, for its part, relies on data networks which are reliable and well documented at the national level; the fact that this country is small, and with a Scandinavian culture, assigning importance to observance of the law, is not unrelated to the success of its initiative.

The solutions adopted by some countries cannot necessarily be copied by the others in the same conditions, but it seems that the proactive search for unreported cases of diseases particularly affected by under-reporting is an appropriate area of work for everyone.

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# Appendices

## Appendix 1: Methodological notes on the data presented

The statistical data presented in appendix and used in the body of the report come from publications by the national occupational risk insurance organizations (DGUV for Germany, ASK for Denmark, CNAMTS for France, INAIL for Italy) and the Ministry of Labour for Spain.

When various publications by a given organization present figures varying by a few units, the figure most consistent with the remainder of the documentation has been adopted.

The insured population means in this study the number of insured workers (per capita) during the reference year. However, it should be specified that some countries (such as Germany) have more part-time contracts than others (as an illustration, the number of insured in Germany was 58,859,409, but only 37,475,591 in full-time equivalents) and, when calculating the ratios per 100,000 people insured which are essential for comparisons between countries, this has the effect of minimizing the results of those countries.

Moreover, the statistics which are used here do not necessarily cover the same insured population depending on the country: all workers in Denmark, workers in the private and public sectors except for a few special regimes in Germany and Spain, employees in industry and commerce in Italy, and private-sector employees in France. These differences of scope may affect the results, in the sense that the number of persons insured is used to calculate the ratios per 100,000 people insured. However, certain specific populations (farmers in particular), covered or not depending on the country, are not exposed to the same risk factors and do not develop

the same occupational diseases. Their inclusion for calculation of the ratios could minimize said ratios. When possible, certain extremely impacting categories were nevertheless excluded from calculation of the ratios (for example, all school pupils in Germany, and housewives in Italy).

For the comparison in Part 2, 2011 served as reference year. It is the reports received that year and the cases recognized in the same year that were used, but these are not necessarily the same cases (it may therefore occur that the number of recognized cases of a disease is greater than the number of cases reported that year). This detail does not concern the Italian statistics, whose presentation depends on the year of reporting and the outcome for these reported cases irrespective of the year of the decision.

We also specify that since the 2011 data have not yet been consolidated in all the countries, they may be subject to slight changes in publications subsequent to those used here.

By claims for recognition is meant the number of cases filed with the insurance organization during the reference year, except for France where the CNAMTS statistics do not cover files received but decisions delivered (positive or negative), i.e. the cases processed during the reference year.

Moreover, numerous values are not published as is in the source documents used, but have undergone reconstitution to be able to provide a common base for analysis and thus allow a comparison between countries.

Finally, the number of reports and cases recognized is given per disease and not per worker.

## Appendix 2: Statistics for GERMANY

### GERMANY: Insured population, claims for recognition and cases recognized - 2011

Insured population <sup>(a)</sup> : 40,861,230	Claims for recognition	Cases recognized
TOTAL ODS	71,269	34,581 (of which 19,311 not expressly recognized <sup>(b)</sup> )
Hypoacusia	11,640	6,107
Dermatosis	25,056	9,399 (of which 18,828 not expressly recognized)
MSD strictly speaking	4,213	525 (of which 16 not expressly recognized)
Lumbago (codes 2108 - 2110)	5,891	535 (of which 149 non expressly recognized)
Cancers:	8,000 (approx)	2,408
- of which lung/larynx cancer due to asbestos	3,824	799
- of which mesotheliomas (code 4105)	1,312	980
Asbestosis and pleural plaques	3,662	1 818
Complementary system	1,968	136

Sources: DGUV

#### Bibliography

DGUV Statistics 2011 - Figures and long-term trends, other DGUV Statistics

<http://www.dguv.de/medien/inhalt/zahlen/documents/dguvstatistiken2011e.pdf>

For the statistics by disease, see also: <http://www.dguv.de/de/Zahlen-und-Fakten/BK-Geschehen/index-2.jsp>

For the insured population, see also Geschäfts- und Rechnungsergebnisse der gewerblichen Berufsgenossenschaften und Unfallversicherungsträger der öffentlichen Hand 2011, page 11 tables 2 & 3 (in German)

(a) The number of 40,861,230 people insured covers private- and public-sector workers (individual employers and employees) in 2011. However, it excludes two particular categories of people insured under the same regime: 17,071,776 pupils and students and 17,998,179 "other insured" non-workers (unemployed receiving compensation, prisoners, blood donors, volunteer workers, family support workers, etc.). These two specific populations were excluded in order to make the German statistics comparable with those of the other countries (which do not cover/insure them in the same proportions), notably so as to calculate the occupational diseases/insured population ratios. However, it was impossible to isolate and hence subtract these two populations from the detailed occupational disease statistics. This in fact has no consequences for the consistency and comparability of the statistics, because the numbers of cases of ODS affecting students and "other insured" are insignificant; in 2011, for the students category, there were only 120 claims for recognition as ODS out of a total of 71,269 for all populations combined, i.e. 0.16% of claims; their representation among recognized ODS is even smaller (about ten cases recognized in 2011). As regards "other insured" among non-workers, while it is not possible to know the number of reports and cases recognized as ODS which is attributable to them, the very specific nature of the activities which subject them to injury insurance (travel between home and employment agency for the unemployed, blood sampling for blood donors, etc.) exposes them only very marginally to "occupational disease" risk (more to "occupational injury" risk).

(b) The German system of recognition of occupational diseases is peculiar in that, among the diseases recognized, it distinguishes between cases which are recognized strictly speaking and which give entitlement to compensation (notably for permanent disability) and cases for which the relation with the work activity has been established but for which their degree of seriousness does not require that the victim be forced to discontinue the work activity which exposes them to the risk. For these cases, the OSH insurance benefits are confined to individual preventive measures such as medical protection and adaptation of the work station. The diseases covered by this distinction are defined in the list of ODS; this mainly concerns skin diseases, allergies and certain MSDs.

## Appendix 3: Statistics for DENMARK

### DDENMARK: Insured population, claims for recognition and cases recognized - 2011

Insured population: 2,676,095	Claims for recognition	Cases recognized
TOTAL ODS	18,230	3,994
Hypoacusia	2,183	877
Dermatosis	2,660	1,389
MSD strictly speaking	5,419	664
Lumbago	1,604	217
Cancers:	612	162
- of which lung cancer due to asbestos	not relevant	not relevant
- of which larynx cancer due to asbestos	1	not relevant
- of which mesotheliomas	82	83
Asbestosis	55	21

Sources: *Arbejdsskadestyrelsen*

#### Note

As a reminder, in Denmark reported cases of occupational diseases can be recognized only if they lead to a permanent disability, i.e. physiological harm and/or a loss of earning capacity. This means that cases for which only daily benefits (paid by the health insurance organization for a merely temporary disability) or non-specific health care services are granted are not counted in ASK's recognition statistics.

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Cases recognized in 2011 by final diagnosis:

<http://www.ask.dk/da/Statistik/Erhvervssygdomme-fordelt-pAa-diagnoser/~media/ASK/pdf/statistik/erhvervssygdomme%20diagnoser/Erhvervssygdomme%20fordelt%20p%20diagnose%2020072011tabel3pdf.ashx>

See also:

<http://www.ask.dk/da/Statistik/Arbejdsskadestatistik/~media/ASK/pdf/statistik/Statistik%202011/Arbejdsskadestatistik2011endelig2011beskpdf.ashx> (in Danish)

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## Appendix 4: Statistics for ITALY

### ITALY: Insured population, claims for recognition and cases recognized relative to claims for recognition - 2011

Insured population (industry and services) : 17,294,329	Claims for recognition	Cases recognized
TOTAL ODs	38,101	14,837
Hypoacusia	5,044 (of which 2,305 off-list)	2,317 (of which 404 off-list)
Dermatosis	519 (of which 210 off-list)	260 (of which 33 off-list)
MSDs strictly speaking	15,398 (of which 7,509 off-list)	6,771 (of which 1,034 off-list)
Lumbago	8,494 (of which 5,501 off-list)	3,003 (of which 1,126 off-list)
Cancers:	2,272 (of which 993 off-list)	908 (of which 87 off-list)
- of which asbestos-related lung	275 (estimate)	not relevant
- of which mesotheliomas	626 (estimate)	not relevant
Asbestosis	528	226
Pleural plaques	895	597

Source: INAIL

#### Note

The Italian statistics relating to occupational diseases are presented according to the year of reporting (in this case 2011) and the outcome for these reported cases irrespective of the year of the decision.

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See also Banca Dati statistica

## Appendix 5: Statistics for FRANCE

### FRANCE: Insured population, reports and cases recognized - 2011

Insured population (general social security scheme) : 18,492,444	Decisions of recognition	Recognized cases
TOTAL ODs	114,531	78,805
Hypoacusia	2,474	1,046
Dermatosis	1,051	762
MSDs + Lumbagos		
- of which MSDs strictly speaking	82,276	65,724
- of which lumbagos	8,772	4,028
Cancers:	2,536	2,050

Source: Caisse nationale de l'assurance maladie - Direction des risques professionnels

#### Note

By number of reports, what is meant here is the number of recognition decisions delivered during 2011, whether positive or negative. "False" rejections due to the absence of a medical certificate attached to the claim for recognition were therefore excluded from this number.

## Appendix 6: Statistics for SPAIN

### SPAIN: Insured population, cases recognized, details by registration system - 2011

Insured population <sup>(c)</sup> : 15,756,800	Recognized cases	Details by registration system
TOTAL MP	30,262 <sup>(d)</sup>	19,195 <sup>(e)</sup> CEPROSS (of which 1,273 non-disabling permanent injuries)
Hypoacusia	2,067	1,558 CEPROSS + 509 (estimate of non-disabling permanent injuries)
Dermatosis	1,064	985 CEPROSS + 619 PANOTRATSS
MSDs + Lumbagos	20,296	
- of which MSDs strictly speaking	16,297	12,632 CEPROSS + about 130 non-disabling permanent injuries + 3,535 PANOTRATSS
- of which lumbagos	3,999	PANOTRATSS
Cancers	75 (of which 63 caused by asbestos)	CEPROSS
Asbestosis and pleural plaques	91	CEPROSS
Silicosis	296	CEPROSS

Source: Employment and Social Security Ministry

#### Notes

Data relating to claims for recognition are not available.

In the statistics by disease, the data coming from CEPROSS do not include any cases of non-disabling permanent injuries (1,273 cases out of 19,195 CEPROSS), not broken down by disease but included in the total number of occupational diseases.

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#### PANOTRATSS

[http://www.seg-social.es/Internet\\_1/Estadistica/Est/Observatorio\\_de\\_las\\_Enfermedades\\_Profesionales/panotratss2k11/index.htm](http://www.seg-social.es/Internet_1/Estadistica/Est/Observatorio_de_las_Enfermedades_Profesionales/panotratss2k11/index.htm)

(c) The insured population in 2011 was calculated from the incidence rate mentioned on page 3 of the "informe 2011" statistical source.

(d) To the occupational diseases strictly speaking registered in CEPROSS should be added the PANOTRATSS data, which technically correspond to occupational injuries, but which are in fact cases of off-list diseases.

(e) This figure is always slightly overestimated in the statistics published by the ministry, because a number of cases are reclassified subsequently. In 2011, 3.98% of the cases registered as occupational diseases in CEPROSS underwent such a reclassification as a "common disease" and 2.8% as an occupational injury. However, it is not possible to know which diseases were reclassified in this way.



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51, avenue des Gobelins - F-75013 Paris  
Tel. +33 0 1 40 56 30 40

