Burden of occupational diseases treated in the Spanish National Health System

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Recognition of occupational diseases in Spain

Diseases caused by work

Occupational diseases
- Legally recognised
- Official list of OD\(^1\)

Work-related diseases (WRD)
- Strong scientific evidence of work as its cause

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1, RD 1299/2006, Cuadro de enfermedades profesionales en el sistema de la SS y se establecen criterios para su notificación y registro.
Recognition of occupational diseases in Spain

Three reasons:

1) **Increased paid benefits for the patient**: 80% of salary if OD vs. 60% otherwise, and other possible benefits.

2) **Sentinel case detection** to suspect other possible cases and adopt preventive measures. Epidemiological surveillance.

3) **Balance of health care costs** between the National Health System and the Social Security System.
### Recognition of occupational diseases in Spain

#### Health care systems in Spain

<table>
<thead>
<tr>
<th>National Health System</th>
<th>Social Security System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financing</strong>: taxes</td>
<td><strong>Financing</strong>: Social Security</td>
</tr>
<tr>
<td><strong>Management</strong>: Autonomous communities</td>
<td><strong>Management</strong>: Insurance companies (Mutuas) Social Security collaborators.</td>
</tr>
<tr>
<td><strong>Health care</strong>:</td>
<td><strong>Health care</strong>:</td>
</tr>
<tr>
<td>✓ Non-work related diseases</td>
<td>✓ Occupational disease</td>
</tr>
<tr>
<td>✓ Non work related injuries</td>
<td>✓ Occupational injuries</td>
</tr>
<tr>
<td><strong>Coverage</strong>: all residents in Spain.</td>
<td><strong>Economic benefits</strong>:</td>
</tr>
<tr>
<td></td>
<td>✓ Occupational and non-work related diseases</td>
</tr>
<tr>
<td></td>
<td>✓ Occupational and non-work related injuries</td>
</tr>
<tr>
<td></td>
<td><strong>Coverage</strong>: affiliated to certain Social Security schemes.</td>
</tr>
</tbody>
</table>
## Secular problem: Underreporting and recognition of OD in Spain

- Compared to other countries (Finland, Canada, other), only **30%** of WRD are reported in Spain (29,000 vs. 93,000 estimated cases).


- Cancer: incidence and scientific evidence (attributable fraction, occupation)

<table>
<thead>
<tr>
<th></th>
<th>Population (millions)</th>
<th>New cancers/year</th>
<th>Estimated occupational cancer cases</th>
<th>Cancers cases recognised as OD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spain</strong></td>
<td>41.8</td>
<td>161.748</td>
<td>6.470-13.487</td>
<td>14</td>
</tr>
<tr>
<td>France</td>
<td>57.3</td>
<td>250,000</td>
<td>10,000</td>
<td>900</td>
</tr>
<tr>
<td>UK</td>
<td>57.5</td>
<td>241,875</td>
<td>9,670</td>
<td>806</td>
</tr>
<tr>
<td>Germany</td>
<td>79.1</td>
<td>367,641</td>
<td>14,700</td>
<td>1,889</td>
</tr>
<tr>
<td>Belgium</td>
<td>10.2</td>
<td>46,339</td>
<td>1,850</td>
<td>149</td>
</tr>
<tr>
<td>Denmark</td>
<td>5.1</td>
<td>29,657</td>
<td>1,180</td>
<td>79</td>
</tr>
<tr>
<td>Finland</td>
<td>5.2</td>
<td>22,201</td>
<td>890</td>
<td>110</td>
</tr>
</tbody>
</table>

Implementation of an intensive programme in PRIMARY HEALTH CARE: 6 times more cases being recognised as OD tan the rest of Spain.

Recognition of occupational diseases

... and hospitals?...

Some experiences in other countries\(^1\),
but very scarce/partial, if any in Spain

Parc de Salut MAR

1,038 Beds

350,753 Visits

3,143 Staff (40h)

“New challenges, new horizons”
Aims: To identify, evaluate and report suspected cases of OD among PSMAR patients for their official recognition as OD by the Social Security system, based on the collaboration among clinical and occupational health services, and patients.

Clinical and epidemiological research. Training of occupational physicians and nurses, and other specialists.
OCCUPATIONAL DISEASE UNIT PSMAR/UPF: the team

- Consol Serra, coordination, OP OHS PSMAR and CiSAL UPF.
- George L. Delclos, consultant OP, University of Texas School of Public Health and CiSAL UPF.
- José M Ramada, OP OHS, PSMAR and CiSAL UPF.
- Mònica Ubalde, post-doc, CiSAL UPF, collaborator 2015-
- Fernando G. Benavides, Prof. PH, CiSAL UPF
- Dinora Bernal, pre-doc, RN, CiSAL UPF, collaborator
- Rosabel Garrido, RN, MSc student
- Mery Valinho, MsC Public Health, UPF
- Sergio Vargas-Prada, OP, CiSAL UPF, collaborator
- Trainees Occupational Medicine, Training Unit UPF
Hospital clinical services
• Dermatology
• Ophthalmology
• Oncology
• Otorhinolaryngology
• Pneumology
• Radiotherapy
• Rehabilitation
• Traumatology
• Urology

Suspected OD, case:
✓ Clinical diagnosis
✓ Occupation

Referral to “Occupational Diseases”

OCCUPATIONAL DISEASE UNIT (ODU)

Initial case assessment:
✓ review of clinical record
✓ clinical-occupational visit

Collection of additional clinical and occupational exposure information

Confirmation or not of OD:
✓ Systematic, standardised causation report

Communication and delivery of the causation report (3 copies)

Patient

Primary care physician

Referring physician (clinical record)

If confirmed OD by ODU, official OD recognition process started by the patient and/or his/her primary care physician

Predictive value (+) = 39.1%

n = 115

2011 - 2014

n = 46

n = 31

n = 13

Ramada JM et al. 2014


ODU

PSMAR/UPF

Methods
If confirmed OD by ODU, **official OD recognition process** started by the patient and/or his/her primary care physician.

- **Social Security Resolution** favorable to the recognition of Occupational Disease, or judicial sentence

- Review of the clinical history and identification of health care activity related to OD

- Identification of Mutua or self-insurance company, or INSS

- Invoice according to the rate established in the agreement with financing institution

- **ECONOMY/BILLING**

- **MUTUA/INSS/SELF-INSURER**

- **HOSPITAL**

Return
### Characteristics of confirmed cases of suspected OD.
**ODU PSMAR/UPF, Barcelona, 2010-2014**

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years)</strong></td>
<td>Mean (DE)</td>
<td>58</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td>Men</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>9</td>
</tr>
<tr>
<td><strong>Diagnostic group</strong></td>
<td>Musculoskeletal</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Cancer</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Hearing loss</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Dermatosis</td>
<td>5</td>
</tr>
<tr>
<td><strong>OD recognition process</strong></td>
<td>Initiated</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Non initiated</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Lost to follow-up</td>
<td>5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>46</td>
</tr>
</tbody>
</table>

### Diagnosis group

<table>
<thead>
<tr>
<th>Diagnosis group</th>
<th>N</th>
<th>OD recognized</th>
<th>OD not recognized</th>
<th>Ongoing process</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>Musculoskeletal</td>
<td>9</td>
<td>2 (33.3)</td>
<td>7 (77.7)</td>
<td>-</td>
</tr>
<tr>
<td>Cancer</td>
<td>8</td>
<td>5 (62.5)</td>
<td>1 (11.1)</td>
<td>2 (22.2)</td>
</tr>
<tr>
<td>Hearing loss</td>
<td>10</td>
<td>3 (30.0)</td>
<td>6 (60.0)</td>
<td>1 (10.0)</td>
</tr>
<tr>
<td>Dermatosis</td>
<td>4</td>
<td>3 (75.0)</td>
<td>-</td>
<td>1 (25.0)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>31</td>
<td>13 (41.9)</td>
<td>14 (45.2)</td>
<td>4 (12.9)</td>
</tr>
</tbody>
</table>

Follow-up...

46 cases of confirmed suspected OD

- 5 lost to follow-up
- 31 initiate process
- 10 did not initiate the process

- 4 on-going process
  - 3 INSS, 1 MUTUA
  - 1 INSS

- 14 rejected OD
  - 10 INSS, 4 MUTUA
  - 2 MUTUA

- 13 recognized OD
  - 7 INSS
  - 6 MUTUA
  - 2 INSS
  - 1 Juzgado social

Administrative route (n=11)

Litigation (n=2)

- Mutua = insurance company
- INSS = Institute of Social Security

Economic burden for PSMAR

- **Clinical records**: discharges, outpatients visits, day care and/or emergencies, diagnostic tests, surgical procedures, drugs, etc. (551 clinical log registries) Revision by independent pairs.
- **Economic data**: real cost and charges.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Total COST (€)</th>
<th>Mean cost per case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Musculoskeletal</td>
<td>22,883.70</td>
<td>2,080.34</td>
</tr>
<tr>
<td>Cancer</td>
<td>152,237.60</td>
<td>15,223.76</td>
</tr>
<tr>
<td>Hearing loss</td>
<td>473.80</td>
<td>33.84</td>
</tr>
<tr>
<td>Dermatosis</td>
<td>5,477.30</td>
<td>1,095.46</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>181,072.40</strong></td>
<td><strong>4,526.81</strong></td>
</tr>
</tbody>
</table>

CONCLUSIONS

- The PSMAR/UPF Occupational Disease Unit is a pilot experience that has proven to be useful and effective.

- Challenge: to expand this approach to the identification and management of occupational diseases to other hospitals of the Spanish National Health Service. The CEPS project.
HYPOTHESES

1) Secular under-reporting and recognition of occupational diseases in Spain is an important health care and economic burden for hospitals of the National Health System.

2) Hospitals of the National Health System can contribute significantly to the identification, reporting and recognition of OD, by means of a structured methodology and common protocols for the systematic evaluation of suspected cases of OD.
CEPS RESEARCH TEAM

- Parc de Salut Mar
- Badalona Serveis Assistencials
- Institut d'Assistència Sanitària Girona
- Hospital de Palamós
- Hospital UF Jiménez Díaz
- Hospital Gregorio Marañón
- Hospital de Vigo
- Hospital Arquitecto Marci de Ferrol
- Hospital de Cabueñes-Gijón
- Hospital Galdakao
- Hospital de Basurto

- Carmen Diego
- Isabel Taboada
- Purificación Palacios
- Ana Isabel Collazos
- Teresa del Campo
- Ignacio Sánchez
- José M Ramada
- Rosa Carreras
- Alex Guerrero
- M Cruz Rodríguez
- Consol Serra (IP)
- Fernando G. Benavides
- George Delclos
- José M Ramada
- Mònica Ubalde
- Rocío Villar
- Montse Fernández
To contribute to the identification and systematic assessment of the burden of occupational disease (EP) treated in hospitals of the National Health System and to evaluate the health care and economic impact for these hospitals.

1) To estimate the prevalence and underreporting of OD in the participating hospital populations;

2) To identify the possible causes of OD underreporting in such populations;

3) To evaluate the economic costs of OD treated at the participating hospitals;

4) To develop two guidelines to assist patients/workers, health professionals (clinicians and occupational physicians), lawyers and unions in the process of recognition of OD by the Social Security system.
• **Design:** Prospective study of a series of suspected occupational disease (OD) cases in a sample of Spanish hospitals.

• **Study subjects:** suspected cases of OD in the 11 participating hospitals of 5 CCAA (regions).

• **Definition of suspected case of OD:** Patient receiving care at one of the 11 participating hospitals that, in the clinical judgment of the physician, raises a suspicion of OD, based on her/his clinical diagnosis and the information requested from the patient about her/his occupation.
## CEPS project: METHODOLOGY

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Admissions/ year</th>
<th>Estimated no. of cases*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parc de Salut Mar</td>
<td>20.918</td>
<td>42</td>
</tr>
<tr>
<td>Hospital de Vigo</td>
<td>41.062</td>
<td>82</td>
</tr>
<tr>
<td>Hospital de Basurto</td>
<td>38.000</td>
<td>76</td>
</tr>
<tr>
<td>Hospital Universitario Fundación Jiménez Díaz</td>
<td>32.043</td>
<td>64</td>
</tr>
<tr>
<td>Hospital de Galdakao</td>
<td>27.152</td>
<td>55</td>
</tr>
<tr>
<td>Hospital Gregorio Marañón</td>
<td>48.838</td>
<td>98</td>
</tr>
<tr>
<td>Hospital de Cabueñes</td>
<td>18.986</td>
<td>38</td>
</tr>
<tr>
<td>Hospital Arquitecto Marci de Ferrol</td>
<td>12.036</td>
<td>24</td>
</tr>
<tr>
<td>Hospital de Palamós</td>
<td>10.491</td>
<td>21</td>
</tr>
<tr>
<td>Badalona Serveis Assistencials</td>
<td>9.500</td>
<td>19</td>
</tr>
<tr>
<td>Institut d’Assistència Sanitària de Girona</td>
<td>6.813</td>
<td>14</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>265.839</strong></td>
<td><strong>533</strong></td>
</tr>
</tbody>
</table>

* Calculated for a ratio of 2 cases/1,000 hospital admissions.
CEPS project: ORGANIZATION

**WP1: Coordination (years 1-3)**

- Creation and full development of ODU in each hospital, common methodology
- Identification, evaluation and follow up of suspected cases undergoing process of OD recognition, common protocols.

**WP2: Evaluation (years 2-3)**

- Causes of under-reporting: scoping review, qualitative analysis (focus groups).
- Analysis of under-reporting and economic burden

**WP3: Dissemination and transference (years 1-3)**

- Development of 2 guidelines
- Dissemination on results and web-based digital platform