

neurodegenerative disease (n=103,969). Correctness of every candidate pair and prevalent non-candidate pairs was checked using occupational coding manuals of FINJEM and F-ISCO88, including occupational titles. Final list of accepted pairs was agreed by the authors.

The number of verified F-ISCO-88–FINJEM conversion pairs was 835, including 88 pairs from non-candidates. In total, 397 (34.7%) candidate pairs were incorrect. We could solve FINJEM occupation for 84 252 (81.0% from total population) persons with direct conversions or verified conversion pairs. Occupation of the remaining 19 717 persons changed between 1990 and 1995. Direct conversions totaled 27 716 (26.6%) solutions and split F-ISCO-88 codes 56 536 (54.4%) solutions. The resulting F-ISCO-88–JEM comprises original FINJEM exposure estimates for direct conversions and estimates for split F-ISCO-88 codes, calculated using proportions of corresponding FINJEM codes as weights.

A quarter of F-ISCO-88 codes can be converted to FINJEM codes in data with F-ISCO-88 occupational codes. This proportion could be tripled in a dataset including FINJEM and F-ISCO88 codes in consecutive censuses, resulting in more accurate exposure estimates.

## SCOM/Modernet

### 05E.1 DATA ON ACKNOWLEDGMENT AND COSTS OF WORK-RELATED MENTAL DISEASES IN FRANCE

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**Objective** To report data concerning the reality of work-related mental diseases (WRMD) in France, their acknowledgment as occupational diseases and some socio-economic data.

**Methods** Data were collected from the French National Health Insurance Fund (NHIF) and from the database of the French national occupational surveillance and prevention network (rnv3p). Rnv3p collects data from French Occupational Disease Centers to identify and describe risks and/or emerging work-related diseases.

**Results** Data from NHIF indicate that the number of requests for acknowledgment of WRMD has increased significantly from 2012 to 2017 (200 to 1500). About 50% are acknowledged and compensated as occupational diseases. Within these affections, the share of depressions is the majority. Durations of work stoppages (more than 400 days on average) were much longer than for other occupational diseases.

Mental disorders related to psychosocial risk factors may also be compensated as work injuries. In 2016, NHIF compensated over 10 000 mental disorders as work injuries, mostly caused by external events or inadequate working conditions. The proportion of people with permanent disability was 4.6%. Finally, the management of WRMD acknowledged will have represented   230 million for the Work Injuries-Occupational Diseases branch of the NHIF.

Rnv3p data are globally consistent with NHIF concerning compensated occupational mental diseases, highlighting the increase of WRMD in some sectors such as public

administration, health and social action, retail business and education. Over 18000 WRMD (33% men, 67% women; mean age=46.0 8.9) were recorded in the database between 2010 and 2016, and 1833 cases of burnout situations currently non acknowledged as occupational diseases by the NHIF. Rnv3p data also illustrate the importance of under-reporting of WRMD as occupational diseases.

**Conclusion** Then, RNV3P provides important data to assist in the acknowledgment of WRMD and to carry out preventive actions in the sectors and enterprises most concerned.

### 05E.2 A HOSPITAL OCCUPATIONAL DISEASES UNIT: AN EXPERIENCE TO INCREASE THE RECOGNITION OF OCCUPATIONAL DISEASE

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**Background** Under-reporting and recognition of occupational diseases is a problem in countries with workers' compensation schemes.

**Aims** To describe the role of a public hospital Occupational Disease Unit (ODU) in Barcelona that resulted in improved reporting and official recognition of occupational diseases from 2010 to 2017.

**Methods** Hospital physicians referred possible cases of work-related disease to the ODU, where in-depth medical evaluations were then performed, and a detailed report addressing causation was generated. Patients with confirmed cases of occupational disease were counselled and followed while pursuing official recognition and benefits claims by the Spanish Social Security System.

**Results** Between 2010 and 2017, 149 cases were referred to the ODU for evaluation. Of these, 80 (53.7%) were confirmed to have an occupational disease, 54 (67.5%) patients pursued official recognition, and to date 26 (48.1%) were accepted by the Social Security System. The predictive positive value varied by diagnosis group (p=0.003), and was highest for skin diseases (71.4%) and cancer (66.7%), and lowest for hearing loss (29.4%) and musculoskeletal disorders (16.7%).

**Conclusions** A hospital ODU can improve reporting and official recognition of occupational diseases, that otherwise might not have been recognized. Expanding this experience to other Spanish and European hospitals could improve the efficiency of workers' compensation schemes and better support preventive policies.

### 05E.3 OCCUPATIONAL DISEASES AMONG WORKERS IN DIFFERENT SOCIOECONOMIC POSITIONS

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**Introduction** To determine differences between workers in lower and higher socioeconomic positions (SEP) in: i)

incidence, trends and type of occupational disease (OD) and ii) incapacity for work due to ODs. It is hypothesized that workers in lower and higher SEP still differ in health disparities from an occupational perspective.

**Methods** From a Dutch cohort of occupational physicians (OPs), ODs assessed by OPs were retrieved over a seven year period (2010–2016) for lower and higher SEP groups. Incidence and type of OD and incapacity for work were determined for the total number of ODs and six frequently occurring ODs. Trends in incidence were estimated using a multilevel negative binominal regression model.

**Result** In total, 54 per 100,000 workers in elementary occupations, machine operating and assembly jobs, as well as managerial and intellectual jobs during 2016 had an OD diagnosed and reported by an OP, from which 98 per 100,000 were for lower SEP, and 36 per 100,000 for higher SEP. Among the lower SEP, musculoskeletal disorders (37%) and noise-induced hearing loss (NIHL) (32%) comprised two-thirds of the OD diagnoses. Among the higher SEP, distress/burnout comprised 60% of the OD diagnoses, with an increasing trend (6%; 95% CI: 3%–8%). Incapacity for work due to work-related low back disorders (69% vs 9%) and shoulder-, arm- and wrist disorders (89% vs 47%) differed significantly between workers in lower compared to higher SEP.

**Discussion** Occupational diseases occur at a 2.7 higher incidence rate for workers in lower SEP compared with higher SEP. Incapacity for work due to work-related musculoskeletal disorders are higher for workers in lower SEP compared with higher SEP, suggesting fewer opportunities to modify work tasks and working circumstances for lower SEP. Psychosocial risk factors constitute the greatest problem for workers in higher SEP, resulting in distress/burnout, accompanied by incapacity for work.

#### 05E.4 BRIDGING THE GAP BETWEEN CLINICAL CASES AND EPIDEMIOLOGICAL EVIDENCE

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One of the current gaps in the prevention of work-related diseases (WRDs) is the missing link between the assessment of occupational hazards introduced at the workplace, clinical alerts, epidemiological studies and policy actions. Alert systems aim to bridge this gap, by collecting information on diseases and exposures to raise alerts to different stakeholders and trigger timely prevention.

This project started with a review of international alert systems to identifying good practices and learning about prerequisites, drivers and obstacles to implement alert and sentinel systems. Next, the findings led to the implementation of an integrated approach consisting of alert systems on three levels in the Belgian context:

1. Signal detection and assessment: suspected clinical cases of new WRDs (new exposure–disease combinations) can be reported through an online platform called ‘SIGNAAL’. Each reported case is followed by an extensive assessment of

exposure– and work–relatedness performed by clinical experts. Since the start, 22 cases have been reported to the platform.

2. Signal strengthening through a network of occupational health physicians. This sentinel approach has been introduced through the PROBE system, in which 47 occupational physicians participated. During the periodic health examinations of workers, the physicians filled in a web survey regarding occupational exposure of a random sample of workers to 22 selected hazardous chemicals during the last working week. Results of the first study showed that 47% of workers were exposed to at least one chemical product from the list, with diesel exhaust being the most frequently reported substance (n=91; 14% of workers).
3. Alerts to public health authorities are mainly communicated through collaboration with Federal Public Services and Federal Agency for Occupational Risks.

These agencies provide support in the maintenance of systems and in turn, data from the systems is used as input for potential preventive strategies on company and societal level.

## Occupational Health in Women

### 06A.1 AGGREGATION OF WORK-RELATED HEALTH PROBLEMS THROUGHOUT WORKING-LIFE IN A POPULATION-BASED SAMPLE OF WOMEN

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**Introduction** Multimorbidity potentiates a spectrum of adverse health outcomes that surpass those of individual diseases. However, little is known on disease aggregation related to occupational exposures.

**Objective** To assess the impact of life course occupational experience on health problem aggregation.

**Methods** We evaluated 4330 adult women at the 10-year-old follow-up wave of the population-based birth cohort Generation XXI, using a self-administered version of the Labour Force Survey item inquiring whether they had ever had a ‘physical or mental health problem that was caused or made worse by your current work or any previous work’ with 11 close-ended and one open-ended response options. Disease aggregation was assessed using principal components (PC) analysis and component scores were summarized by sociodemographic, anthropometric and work-related characteristics.

**Results** We identified five components to describe disease aggregation which accounted for 54.7% of observed variance. PC1 gathered all items on musculoskeletal disorders (back, upper and lower limb); participants with lower educational level, higher BMI, blue-collar jobs, working in the private sector, and with a history of occupational accidents scored higher in this component. PC2 gathered the item on mental disorders