

## Poster Presentation

## Policy/Impact

## 0296 GRADUAL RETURN TO WORK AMONG WORK-DISABLED EMPLOYEES IN BELGIUM: BARRIERS AND POSSIBILITIES FOR IMPROVEMENT

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**Introduction** To provide for a fast and safe return-to-work, it is important to take early measures during work incapacity. In Belgium, one of these measures includes the system of gradual work resumption while on sickness benefits. The barriers and possibilities for improvement within this system have barely been examined scientifically. The purpose of the present study is to explore these barriers and facilitators among work-incapacitated employees. Policy recommendations regarding partial return to work will be formulated for this study. When the barriers of gradual work resumption are addressed, the application of the system is expected to be easier and more effective.

**Methods** A qualitative study is conducted to obtain the experiences of various stakeholders (employees/patients, employers, occupational physicians, social security physicians and general practitioners) with gradual return to work. Discussions and conversations are held in the form of respectively focus group interviews (duration about two hours) and individual interviews (duration about one hour) about barriers and possibilities for improvement within this system. Qualitative thematic analysis will be used to analyse the data.

**Results and discussion** The current research is still ongoing (expected end date: July 30th, 2017). Therefore, results will be presented later as analyses are still being conducted. Until now, three interviews and one focus group (n=3) have been conducted with employees/patients, one interview and one focus group (n=11) have been conducted with occupational physicians, two interviews have been conducted with social security physicians and one focus group (n=2) has been conducted with general practitioners.

## Oral Presentation

## Dusts and Fibres

## 0297 OCCUPATIONAL EXPOSURE TO ORGANIC DUST AND RISK OF DEVELOPING RHEUMATOID ARTHRITIS

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**Objective** Airborne exposure to inorganic dust is a contributor to rheumatoid arthritis (RA). We therefore wanted to investigate potential risks from exposure to organic dust.

**Methods** This population-based case-control study consisted of individuals living in Sweden during 1968–2012. RA patients were enrolled from the Swedish Rheumatology Quality

Register. To each case we matched ten controls from the population register on sex, parish and age. We collected the participants' job titles from national population and housing censuses carried out 1960, 1970, 1975, 1980 and 1990. Job-exposure matrices were applied to the job titles to estimate ever exposure to oil mist/cutting fluids, wood-, animal-, paper-, textile-, flour- and other organic dust from 1955–1995. We used conditional logistic regression to calculate odds ratios (ORs) and 95% confidence intervals (CIs) for ever exposure vs. never exposure in relation to seropositive or seronegative RA.

**Results** In total, 237 243 women and 98 136 men were included in the analysis. Men exposed to animal dust (OR: 1.3, 95% CI: 1.2–1.5), oil mist/cutting fluids (OR: 1.1, 95% CI: 1.1–1.2) and other organic dusts (OR: 1.3, 95% CI: 1.2–1.4) had an increased risk of seropositive RA, whereas wood dust (OR: 1.2, 95% CI: 1.1–1.4), animal dust (OR: 1.3, 95% CI: 1.1–1.6) and other organic dusts (OR: 1.2, 95% CI: 1.1–1.4) increased the risk of seronegative RA. Women had no significantly increased risk of RA from organic dust exposure.

**Conclusions** Certain organic dusts are associated with increased risks of RA in men.

## Poster Presentation

## Exposure Assessment

## 0303 EVALUATING DIFFERENCES IN EXPERT AGREEMENT BETWEEN SUBGROUPS TO IDENTIFY WHERE TO PRIORITISE USE OF MULTIPLE RATERS

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The validity and reliability of expert-based assessments can be improved by using multiple raters. However, to maximise scarce resources, use of multiple raters should focus on jobs for which experts are more likely to disagree. For comparisons of agreement across subgroups, the standard metric Kappa must be used cautiously because it is sensitive to the ratings' marginal distribution. As an alternative, we used Kappa's numerator: the difference between observed and expected agreement. This value equals the Mean Risk Stratification (MRS), a novel metric also used to evaluate the predictiveness of risk models. MRS is interpreted as the number of observations (per 100) that raters will agree on beyond chance. For subgroups of jobs in three industries stratified based on 4 characteristics, we evaluated quadratically-weighted MRS from six experts' ordinal, 4-category exposure ratings (67–74 workers per industry). For all industries, MRS was consistently lower for jobs in far vs. near proximity to an exposure source and for jobs with multiple vs. one work locations, with experts agreeing on 2–8 fewer jobs (per 100) for far proximity jobs and 0.4–12 fewer jobs with multiple work locations. MRS was also lower for jobs with subject-reported non-visible vs. visible dust accumulation in two industries (difference: 1–6 jobs) and for non-production vs. production jobs in one

industry (difference: 9 jobs). The use of MRS allowed us to identify job characteristics that are associated with lower agreement between experts and to quantify the potential benefit of using multiple raters.

## Poster Presentation

### Cancer

#### 0304 TEMPORO-SPATIAL ANALYSIS OF MORTALITY FROM PLEURAL MESOTHELIOMA FROM 1975 TO 2012 IN ÎLE-DE-FRANCE

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**Context** Pleural mesothelioma surveillance, a marker of asbestos exposure, improves early detection and helps improving compensation of the disease. Few epidemiological data exist at a sub-district level in France.

**Objectives** This study presents an analysis of mortality in Île-de-France region from pleural mesothelioma from 1975 to 2012, by sex, district and "cantons-villes" residence.

**Material and methods** Pleural mesothelioma deaths from 1975 to 2012 were provided by the CepiDc and the corresponding population numbers by INSEE. Mortality rates stratified by age were reported for the region and its districts. Standardised mortality ratios were calculated using the Île-de-France population as a reference at "canton-villes" level. A ranking algorithm to order the mortality by "canton-ville" over the period was developed and applied.

**Results** The epidemic peaked in the mid-90s. Among men the lowest standardised rate was observed for Paris (3.4 per 100,000) and the highest in Seine-et-Marne and Seine-Saint-Denis (5.1 per 100,000). Among women the lowest mortality was observed in Paris and in the Val d'Oise (1.3 per 100,000) and the higher in the Seine-Saint-Denis (1.8 per 100,000). The temporo-spatial representation shows high mortality areas consisting of neighbouring "cantons-villes" in Seine-et-Marne (Perthes) and Seine-Saint-Denis (Aulnay-sous-Bois), in contrast with areas of low mortality localised mainly in Paris and the Val-d'Oise. The epidemic timeline differed among "canton-ville".

**Conclusion** Epidemic of pleural mesothelioma can be characterised at a fine scale over a long period. This territorial knowledge can be an aid to targeted education of health professionals and the populations concerned.

## Oral Presentation

### Cardiovascular Disease

#### 0305 OCCUPATIONAL EXPOSURE TO RESPIRABLE QUARTZ AND RADON AND THE RISK OF ACUTE MYOCARDIAL INFARCTION

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**Objectives** The aim of this study is to investigate the effect of occupational exposure to radon and respirable quartz (RQ) on the risk of acute myocardial infarction.

**Methods** This individually matched case-control-study is nested into the Wismut cohort of former uranium miners. Acute myocardial infarction (AMI) was ascertained from hospital discharge diagnoses coded in ICD-10 and validated according to WHO criteria (1979) by patient records. Exposure to RQ, radon, long-lived radionuclides, Gamma-radiation, and arsenic was estimated by a corresponding job-exposure-matrix. Information on silicosis was included in the dataset to reduce a possible Healthy-worker-effect. To exclude effects of possible exposures before hire in uranium mining, a second analysis was performed limited to miners born after 1930. Conditional logistic regression was used for risk modelling.

**Results** In total, 467 cases of AMI and 467 controls, matched by year of birth, were ascertained. The analysis of the full dataset shows only a weak increase of AMI-risk with increasing exposure to RQ. But the second analysis, based on 126 matched pairs, revealed a positive dose-response relationship with RQ. The odds ratio for the highest quintile (>15 mg/m<sup>3</sup>·year) was 4.91 (95%CI: 1.43–16.8). Including RQ as a linear term yields OR=1.05 per mg/m<sup>3</sup>·year. The analysis of the cumulative radon exposure produced similar findings.

**Conclusions** This study shows elevated risk of AMI due to radon and RQ exposure. Because of the high correlation between both exposures, a differentiation between the corresponding effects is not possible.

## Oral Presentation

### Exposure Assessment

#### 0306 USING DATA FROM EXPOSURE DATABANKS: COMPARING MEASUREMENT LEVELS IN LIMS (QUEBEC, CANADA) AND IMIS (USA)

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