

conducted in two Rounds ('rating' and 'ranking') using a developed questionnaire based on expert panel discussions and key research topics identified from the medical literature, including similar studies.

Questionnaires will be circulated using a survey link electronically. Contacts have been established with the UK Faculty and Society of Occupational Medicine and academic OH institutions and agreement gained to participate.

Results The first 'rating' round was completed between September - November 2016 and the second 'ranking' round has recently been commenced. This survey will remain open until mid-April 2017, with reminders to increase response rate. The results will be collated and written up by June 2017.

Conclusions By achieving consensus on current research priorities, this work will inform the future direction of national OH research strategy and support and encourage research that addresses important knowledge gaps within the specialty. It will facilitate maximum gain for all key stakeholders by establishing where OH research funding ought to be focusing.

Oral Presentation

Exposure Assessment

0294

JOB-EXPOSURE MATRIX ADDRESSING SMOKING IN THE NATIONWIDE DANISH OCCUPATIONAL COHORT, DOC*X

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10.1136/oemed-2017-104636.242

Objectives To develop a job-exposure matrix (JEM) addressing smoking to allow for confounder adjustment in register-based occupational health studies.

Methods We combined and harmonised questionnaire and interview data on smoking from several Danish cohort studies and surveys in the time-period 1981–2013 for 2 64 054 employees registered with a DISCO-88 code (the Danish version of ISCO-88) in the Danish nationwide JEM database, DOC*X. We modelled the probability of being a smoker, and the amount of smoking (g/d) among smokers. In mixed models, age and sex were included as fixed effects and DISCO as random effect for six different time-periods.

Results The proportion of smokers decreased linearly from 56% in 1981–90% to 19% after 2010, whereas the amount increased from 15.9 g/d in 1981 to 16.5 g/d in 1991–95, and then declined to 13.2 g/d after 2010. In general, the quality of the JEM increased by calendar year, as 23% and 71% of

the DISCO-codes were represented in the first and latest time-period, respectively, on the most detailed 4 digit DISCO-level. This was also reflected in the calculated interclass correlation coefficient (ICC), which increased by calendar year. The within job-group variation was large relative to the between jobs variation, but the range between jobs was in general high, as the probability ranged from 6% to 40% and the amount from 8.0 to 19.5 g/d after 2010.

Conclusions We succeeded addressing a smoking JEM with substantial variability between jobs, which may prove a useful tool for confounder adjustment in register-based occupational studies.

Oral Presentation

Cancer

0295

URINARY CADMIUM CONCENTRATION AND MAMMOGRAPHIC VOLUMETRIC DENSITY – PRELIMINARY RESULTS

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10.1136/oemed-2017-104636.243

Cadmium (Cd) is a heavy metal with widespread occurrence in the environment. Occupational exposure to cadmium occurs in many occupational settings, such as pigment and batteries production, galvanization and recycling of electric tools. Environmental contamination with Cd comes from industry and agriculture. The interest of the researchers and stakeholders in cadmium as potential risk factor for breast cancer has been increasing over the recent years.

The objective of our ongoing project is to assess the association between Cd and mammographic density - a strong risk factor for breast cancer. Our research hypothesis assumes that Cd, as metalloestrogen, modifies mammographic density therefore affecting breast cancer risk.

The cross sectional study will include, in total, 500 women undergoing screening mammography at the mammography centres in Lodz (Poland). The study procedures include personal interview, anthropometric measurements, blood and urine collection and mammography. Cd is determined in spot urine sample (by ICP-MS technique). Digital mammography is performed according to the standards for screening mammography and volumetric mammographic density is analysed by Volpara software. The potential associations are examined with linear regression model, age and BMI adjusted.

During the first phase of the study we collected data from 200 women of mean age 54 years. The mean Cd concentration was 0.54 µg/L, and mean volumetric density 7.6% (left breast, cranio-caudal view). The preliminary analysis showed an inverse association of the volumetric density with age ($p < 0.01$) and BMI ($p < 0.001$). We did not observe association between cadmium concentration in urine and volumetric density.

Poster Presentation

Policy/Impact

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

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10.1136/oemed-2017-104636.244

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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10.1136/oemed-2017-104636.245

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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10.1136/oemed-2017-104636.246

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