

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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**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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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.