

Occupational lung disease

S1 A NEW, EFFICIENT WEB-BASED TOOL TO COLLECT AND CODE LIFETIME JOB HISTORIES IN LARGE POPULATION-BASED STUDIES: THE COPD PROJECT IN THE UK BIOBANK COHORT

¹S De Matteis, ¹D Jarvis, ¹M Wheatley, ¹H Azhar, ²A Young, ²H Young, ¹L Rushton, ¹P Cullinan. ¹Imperial College London, London, UK; ²Oxford University, Oxford, UK

10.1136/thoraxjnl-2014-206260.7

Introduction and objectives The manual collection and coding of job histories is the standard method for assessing occupational exposure, but may be infeasible for large population-based studies such as the UK Biobank cohort.

Our aim was to develop a new web-based tool to automatically collect and code individual lifetime job histories in the UK Biobank cohort for investigating the causes and burden of work-related COPD in the UK.

Methods UK Biobank is a population-based cohort of 502,682 subjects, aged 40–69 years, recruited in 2006–2010. Baseline spirometry data, current employment and smoking histories were collected. We developed a job questionnaire based on the hierarchical structure of the standard occupational classification (SOC) 2000 to allow participants to automatically self-collect and code their lifetime job histories. The web-based prototype (www.imperial.ac.uk/biobank/questionnaire) was pre-piloted in May–August 2013 among key job sectors using snowball sampling together with a feedback survey.

Results 171 subjects participated in both the pre-piloting and feedback survey. 91% completed the questionnaire in <20 min, 85% considered the instructions clear, and 80% found their job categories/titles easily. Overall, 96% judged the questionnaire to be clear and easy. A revised questionnaire has now been designed and will be accessible from different media including PCs/laptops, tablets and smart phones to encourage high response. A demonstration version will be made available to conference participants.

Conclusions Our web-based job questionnaire is an efficient new standard tool for collecting and automatically coding lifetime job histories in large population-based studies and is adaptable for use in many occupational and environmental health research projects.

S2 DEVELOPMENT OF A JOB EXPOSURE MATRIX FOR SOC 2000 LISTINGS TO IDENTIFY OCCUPATIONAL CAUSES OF COPD

¹S Sadhra, ²D Fishwick, ³OP Kurmi, ²H Chambers, ¹KBH Lam, ⁴S Hutchings, ⁴D Jarvis, ⁴S De Matteis, ⁴L Rushton, ¹JG Ayres, ⁴P Cullinan. ¹University of Birmingham, Birmingham, UK; ²Health and Safety Laboratory, Buxton, UK; ³University of Oxford, Oxford, UK; ⁴Imperial College London, London, UK

10.1136/thoraxjnl-2014-206260.8

Introduction Occupational exposures are associated with the presence of a significant proportion of chronic obstructive pulmonary disease (COPD). The majority of the previous population studies have relied on self-reported exposures to vapours, gases, dusts and fumes (VGDF), which could lead to substantial misclassification. We aim to develop an occupational inhalation job exposure matrix (JEM) developed for use specifically with

SOC 2000 occupational codes covering a wider range of occupational airborne pollutant types.

Methods The development of airborne chemical exposure JEM (ACE-JEM) involved a four-stage approach; first, exposure (yes/no) to each of the six different airborne pollutants types (vapours, gases, dusts, fumes, fibres and mists; VGDFFM) was assessed for each of the 353 SOC codes, then three levels of exposure estimates (low, medium and high) (L-JEM1) and four levels of proportion exposed (0–4%, 5–9%, 20–49% and ≥50%) (P-JEM2) were assigned to the exposed codes and for each pollutant type. The two P and L JEMs were then combined to produce the final ACE-JEM. The estimated exposure of the 6 pollutant types was expanded to include biological dusts, mineral dusts, metals, diesel fumes and asthmagens.

Results For L-JEM1 186 (53%) of the codes were assigned as exposed to at least one type of VGDFFM. The most common exposure was dust (40% of all SOC codes) followed by fumes (26%). Over 68% of all codes were assigned as not being exposed to fibres, gases or mists. The pollutant with the highest proportion in the high exposure group was dusts (13%), and 33% of the codes were assigned as exposed to asthmagens. Overall, 53% of the codes were assigned as exposed to CGDF, with 22% assigned as having medium or high exposure to VGDF.

Discussion An expert assessment derived JEM has been developed, using a strict set of a priori defined rules. This JEM will assist attribution of possible harmful workplace exposures in future epidemiological studies. The ACE-JEM could also be applied to studies to assess risks of other respiratory diseases, including asthma and extrinsic allergic alveolitis.

S3 IDIOPATHIC PULMONARY FIBROSIS, MESOTHELIOMA, AND ASBESTOSIS MORTALITY TRENDS FOR ENGLAND AND WALES: IS ASBESTOS EXPOSURE ASSOCIATED WITH IPF?

¹C Reynolds, ²C Barber, ¹P Cullinan. ¹Department of Occupational and Environmental Medicine, National Heart and Lung Institute, London, UK; ²Centre for Workplace Health, University of Sheffield, Sheffield, UK

10.1136/thoraxjnl-2014-206260.9

Introduction and objectives Idiopathic pulmonary fibrosis (IPF) is more common in older people, in men, in manual workers, and in those living in more industrial areas of the country.

It has been hypothesised that workplace asbestos exposure is an under-recognised cause of IPF. Studies of mesothelioma patients have shown that asbestos exposure is poorly recalled. If asbestos exposure is not known, asbestosis can be misclassified clinically as IPF because both can present with progressive breathlessness and radiological UIP.

Our aim was to investigate a possible association between IPF and known asbestos-related mortality. Our objective was to visualise age-standardised annual mortality trends for IPF, mesothelioma, and asbestosis for men and women.

Methods Age, sex, and region stratified mortality data for IPF, mesothelioma, and asbestosis were obtained for England and Wales from the Office of National Statistics for the period 1974–2012. Data were age-standardised and visualised using the Python Pandas data analysis library and matplotlib.

Results The incidence of IPF continues to increase and is higher in men (male:female = 1:1.6) and in the north west of England. IPF and asbestos-related deaths are rare before the age of 40 and more common in elderly people.