Objective To investigate the causes and burden of work-related COPD in the UK through the use and extension of UK Biobank cohort information on occupational exposure.

Methods UK Biobank is a population-based cohort of over 500,000 people aged between 40–69 years and recruited in 2006–2010. Baseline measurements of spirometric lung function and lifetime smoking history have been collected and are being analysed with information on current employment status translated into standard occupational codes (SOC 2000). An enhanced web-based occupational module based on the hierarchical structure of SOC 2000 will be sent to all participants in 2013 to collect their life-time occupational histories. Subsidiary questions concerning industries, jobs and exposures related to COPD will be included, as well as questions on shift patterns and hours worked. We are developing a general Job Exposure Matrix (JEM) for COPD for application to the Biobank data. The JEM involves allocation of exposure for different airborne pollutant types for each 4 digit SOC code. Results from systematic review and evaluation of the literature on occupational COPD and the currently available disease-specific JEMs are being used to identify key jobs, exposures and occupational burden of COPD.

Results About 40% of participants have never smoked. At baseline, only 8352 (1.67%) reported that they had been given a diagnosis of chronic bronchitis or emphysema by a doctor. Spirometry data are available for approximately 324000 participants. Preliminary analysis indicates that 30214 men and 25608 women have airflow obstruction (FEV1/FVC <0.7). Of these, 39% of the women reported never smoking in contrast to about 3% of the men.

Conclusions This project will provide estimates of the burden of COPD attributable to lifetime occupational exposure in the UK and facilitate the development of a long-term strategy for the prevention of occupational COPD.