Poster Presentation

Reproductive Effects

THE CHLORINATED HYDROCARBONS CONTAMINATED GROUNDWATER AND THE REPRODUCTIVE HAZARD

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Our study was to investigate the association between the birth outcome and infant mortality among the community with chlorinated organic contaminated groundwater. The parents who lived in the area around the factory from 1978 to 1997 were recruited. According to the groundwater hydrogeology, we classified into three areas, factory located as a high-exposure area, the downstream as low-exposure areas, and upstream as reference areas. We exclude the population who ever worked in the factory. Associations between the exposure area and adverse birth outcomes were divided into four periods 1978–82, 1983–87, 1988–92, and 1993–97. For the preterm delivery, the odds ratio for the factory located were 1.60 (CI=1.14–2.24) for the period of 1993–1997, 1.67 (CI=1.03–2.71) for the period of 1988–1992 and 1.57 (95% CI=1.07–2.30) for the downstream for the period of 1988–1992. For the low birth weight, the odds ratio for the downstream were 1.36 (CI=1.00–1.84) for the period of 1993–1997. The infant mortality have the trend for the factory. The Chlorinated Hydrocarbons organic solvents contaminated water and the environment could be increased the risk of preterm delivery and low birth weight. The more evidence need more explore and further studies need to strengthen the relation.

Oral Presentation

Exposure Assessment

CREATION OF A QUANTITATIVE HISTORICAL JOB-EXPOSURE MATRIX FOR PLUTONIUM WORKERS AND FEASIBILITY OF ITS USE WITH RECONSTRUCTED OCCUPATIONAL HISTORIES FOR EPIDEMIOLOGICAL PURPOSES

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Introduction The UK Sellafield workforce is important for studying potential health risks of plutonium (Pu) exposure. However, several hundred early workers, employed during the period 1952–63, have been excluded from epidemiological studies because their urinalysis results were insufficiently reliable to provide accurate exposure assessment. This project aimed to develop a job-exposure matrix (JEM) that would enable future inclusion of these workers in epidemiological studies. Methods 630 plutonium workers without reliable Pu urinalysis data for 1952–63 were identified within fourteen ‘homogeneous’ plutonium exposure groups. For each job/work location/year, ‘exposure analogues’ with reliable urinalysis data were identified (n=330). The JEM was based on 4487 work history records and 6899 urinalysis results. Intake assessments were produced using the ‘PuMA’ plutonium mass assessment code employing the latest conventional assessment methodology. Results The JEM provided estimates for the median plutonium intake in bequerel (Bq) per year for each job/work location/year combination, and ranged from “no intake” to 175 Bq/yr.
Cumulative plutonium intakes for these workers ranged from “no intake” to 990 Bq. Internal cross-validation indicated moderate-to-good correlations (r>0.4) and relative differences between JEM and validation sample <10%. Probabilistic evaluation indicated robust estimates of cumulative intake. Median cumulative JEM intake was 50 times lower than for conventional assessment methodology and much better aligned with prior expectation.

**Conclusions** The ‘exposure analogues’ methodology in JEM-development is a novel approach and has the potential to be a valuable tool for future epidemiological studies of the risks that may arise from plutonium exposure at Sellafield and potentially other similar cohorts.

**Declaration of potential conflict of interest:** Dr MacGregor, Mrs Wilson, Mr Peace and Mr Herdnan are employed by Sellafield Ltd. Professor Wakeford does consultancy work, including for the UK Compensation Scheme for Radiation-linked Diseases. The authors declare that they otherwise have no actual or potential competing financial interests.

**Poster Presentation**

**Occupational Medicine (SCOM/Modernet)**

**0201 SURVEY TO DETERMINE USUAL CARE IN THE UK NHS OCCUPATIONAL HEALTH DEPARTMENTS IN MANAGING STAFF WHO GO ON SICK LEAVE WITH COMMON MENTAL HEALTH DISORDERS**

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**Introduction** The National Health Service (NHS) is the biggest employer in the United Kingdom (UK). Poor mental health is estimated to account for more than 25% of sickness absence in the NHS. Little is known about the management of NHS staff who take sick leave due to common mental health disorders (CMHD).

**Aims** To establish the current practice of UK Occupational Health (OH) departments in managing staff who go on sick leave with CMHD.

**Methods** Survey of OH departments providing OH services to NHS trusts and health boards (12 questions). Analysis involved descriptive statistics and content analysis.

**Results** There were 49 complete responses from 126 OH departments (38.9%). The majority (98%) of the Trusts have a CMHD sickness absence policy in place. For 63.3% of the Trusts, the first OH consultation would occur between 8 and 28 days after a staff member going off sick and would be undertaken by someone with an OH qualification (91.8%). Assessment during the first consultation most frequently undertaken by someone with an OH qualification (91.8%).

**Conclusions** We found variation in practice between trusts with respect to timing of first consultation, use of case-management approach and regular timed reviews. The most up-to-date evidence on the effectiveness of intervention is not uniformly being incorporated into current practice.

**Oral Presentation**

**Psychosocial**

**0202 WORKPLACE-BASED INTERVENTIONS TO INCREASE CHANCES OF SOONER AND SUSTAINED RETURN TO WORK IN WORKERS WITH COMMON MENTAL HEALTH DISORDERS: A SYSTEMATIC REVIEW OF THE LITERATURE**

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**Introduction** Common mental health disorders (CMHD) are highly prevalent in the working population. Sick leave due to CMHDs is contributing to the exclusion form the labour market.

**Aims** To give an overview of the efficacy and effectiveness of interventions to increase chances of sooner and sustained return to work (RTW) in staff who go on sick leave with CMHDs. We aimed to include a wide variety of study designs, mental health conditions and types of interventions to allow for increased generalizability of the findings.

**Methods** We systematically searched MEDLINE, EMBASE, CINAHL, PsychINFO, and Cochrane Database of Systematic Reviews for studies published between 2009 and 2016. We included workplace- based interventions that focused on initiatives undertaken or strongly facilitated by the employer or the insurer. We used a narrative synthesis.

**Results** We retrieved 934 articles and 56 included in the qualitative synthesis. Of these 16 were randomised controlled trials. There was strong evidence that workplace focused interventions reduce the time until RTW (i.e. the number of sick-leave days), but did not improve RTW rates compared with controls. The evidence regarding lasting return to work and job performance is less clear. There is strong evidence that multiple domain interventions are more effective compared with single domain interventions.

**Conclusions** Individual-based interventions are more prevalent. However, more studies on workplace-focused interventions are needed, especially since connecting healthcare and workplace systems appears vital to influence the return-to-work process. There remains an evidence gap for which, if any, interventions lead to sustained return to productive work.

**Poster Presentation**

**Cancer**

**0203 FARMING AND MORTALITY FROM LEUKAEMIA IN TAIWAN**

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**Introduction** Agricultural workers might be at an increased risk for several cancers, including leukaemia, in mortality and incidence studies. A death certificate-based case-control study was designed