

disorders, blue collar with musculoskeletal disorders and inspection with injuries. The findings provide relevant information for disease's prevention and health promotion policies with priority to the most vulnerable occupational groups.

#### 0303 CONDITIONS OF RETURN TO WORK OF NURSES AFTER MATERNITY LEAVE

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10.1136/oemed-2014-102362.328

**Objectives** Currently, countries like France, Spain, Italy, United States and Brazil there was an increase in the proportion of workers aged between 25–45 years, a period considered fertile. This scenario has determined that many workers had to choose between career and motherhood. The aim is to analyse the amount of Brazilian nursing professionals, in the period from January, 2012 to July 2013, returned to work after maternity leave.

**Method** Was performed a literature review at Pub Med and BIREME. There was a review of the medical records of nursing professionals met at a public university hospital of São Paulo, Brazil, from January 2012 to July 2013.

**Results** Returned to work after maternity leave: 80% (57) of nursing assistants, 70% (16) of the nursing staff and 94.6% (53) of nurses. Among the layoffs, 62.5% (15) occurred within the first 3 months, and only 18.75% (3) in the first six and nine months after maternity leave.

**Conclusions** It is possible to conclude that the nursing professional return to work after maternity leave quality requires investment in health policies that promote greater social and labour support.

#### 0304 THE NIEHS GULF STUDY: ESTIMATE OF WORKERS' EXPOSURES THROUGH THE INHALATION ROUTE ON SEVEN RESPONSE VESSELS NEAR THE WELL-SITE DURING THE DEEPWATER HORIZON OIL SPILL

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10.1136/oemed-2014-102362.329

**Objectives** After the Deepwater Horizon, response vessels were brought near the wellhead area to stop the leak, collect oil and drill the relief wells. The objective of this paper is to characterise inhalation exposure on these vessels for various exposure groups (EGs) to total hydrocarbons (THCs).

**Method** Approximately 100 EGs based on job title group, tasks and time period during the response effort were standardised across these vessels. Descriptive statistics were calculated from the measurements for each EG on each vessel. Since many of the data were censored (i.e., below the limit of detection), a Bayesian method was used to obtain estimates for the arithmetic mean (AM), geometric mean, and geometric standard deviation.

**Results** During the first time period (April 20–May 14), the range of the AMs on the vessels was 1.9–24.2 ppm THC. Exposures were lower during the second period (May 15–July 15) when dispersant was used to reduce air concentrations (0.1–14.6 ppm). After top-capping the well, a substantial reduction was observed on all seven ships (0.1–1.9 ppm). After bottom capping (>August 10), exposures generally increased on the ships (0.1–3.8 ppm), most likely due to decontamination activities. The vessel capping the well and the vessel burning waste oil and gas had significant differences from the vessels drilling the relief wells.

**Conclusions** Differences were found by vessel and time period that likely reflected oil weathering and differences in job and vessel activities.

#### 0306 PARENTAL OCCUPATIONAL EXPOSURE TO IONISING RADIATION AND SELECTED BIRTH DEFECTS IN THE US

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10.1136/oemed-2014-102362.330

**Objectives** Results of previous studies of occupational exposure to ionising radiation (IR) and birth defects are inconsistent. Our objective was to assess the association between maternal and paternal occupational exposure to ionising radiation (IR) and birth defects using a larger sample than previous studies.

**Method** We studied 27 809 case mothers and 10 200 control mothers who participated in the National Birth Defects Prevention Study (NBDPS), giving birth between 1997 and 2009. Our exposure assessment was based on a textual analysis of the mother's description of her occupation, workplace and job activities (and those of the infant's father) during the three months before and the three months after the estimated date of conception. Logistic regression was used to examine crude and adjusted odds ratios for the association between possible maternal and paternal occupational exposures to IR and 45 birth defects. We assessed the possibility of confounding from pre-pregnancy diabetes and body mass index, smoking, use of supplements containing folic acid, use of alcohol, use of illicit drugs, pregnancy intention, study location and demographic variables.

**Results** We excluded 17 mothers with a history of cancer, and 12 568 mothers who were unemployed, homemakers or students during the periconceptional period. Overall, 3% of the mothers and 2% of the fathers were exposed to IR. The remainder of our results are underway and will be presented at the meeting.

**Conclusions** Our results will be interpreted taking account of multiple statistical comparisons and the possibility of recall bias.

#### 0307 MONITORING MERCURY EXPOSURE AMONG ARTISANAL AND SMALL-SCALE MINERS: DEVELOPING AND EVALUATING A SURVEILLANCE PROTOCOL

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10.1136/oemed-2014-102362.331

**Objectives** - Develop a mercury exposure surveillance protocol targeted at artisan and small-scale miners that includes taking occupational histories, ancillary tests, counselling and educating patients regarding exposure

## Poster presentation

- Obtain physician, subject matter and end user feedback on the protocol content and implementation feasibility
- Develop a training guide for physicians and educational materials for miners
- Pilot test the surveillance protocol among a small group of artisan miners

**Method** The Minamata Conference on Mercury highlighted the importance of surveillance protocols in identifying, treating and preventing mercury exposure among miners. As such, we will use materials from the World Health Organisation (WHO) and International Labour Organisation (ILO) to develop the protocol. We will collaborate with physicians, occupational health and small-scale mining experts to identify key content and obtain feedback regarding each section of the protocol. Once we have a finalised protocol, we will pilot test the protocol among a small group of artisan miners and incorporate lessons learned into the final product.

**Results** We will develop a surveillance protocol that will capture prevalence, occurrence, treatment and preventive efforts related to mercury exposure. The initial pilot testing will provide valuable feedback regarding the ease of use, content comprehension, effective treatment and preventive efforts associated with mercury exposure.

**Conclusions** Treating, preventing and reducing mercury exposure is a priority of the mining industry. In order to effectively reduce and eliminate mercury exposure it is important to develop an effective surveillance protocol tailored to artisan and small-scale miners.

#### 0308 PREVALENCE OF LEUCOPENIA AMONG INDUSTRY WORKERS 2000–2009

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10.1136/oemed-2014-102362.332

**Objectives** To estimate the prevalence of leucopenia among industrial workers 2000–2009.

**Methods** The study population comprises workers from manufacturing industries of the Bahia State, Brazil, who had annual compulsory medical checkups in a national not-for-profit occupational safety and health care system during the study period. We retrieved computerised medical records, clinical and laboratory exams, and also workplace risk assessment, occupational and socio-demographic data. Leucopenia was defined as having leucocytes counting less than 4000.

**Results** From a total of 64 454 workers with valid blood counting data, 12 303 (19.09%) had leucopenia over the study time. Prevalence of leucopenia was 21.87% in 2005, 20.73% in 2006 showing a declining trend until 2009 when reached 15.89% ( $p < 0.001$ ). Leucopenia was higher among male workers than women ( $p < 0.001$ ) and in the rubber and plastic industry.

**Conclusions** Blood cell counting is compulsory monitored in industry, by data are rarely analysed and results made public. Preliminary results of our analysis show that there is a declining trend of leucopenia prevalence suggesting a possible positive impact of the Benzene National Agreement on workers' health in the rubber and plastic industry in Bahia.

#### 0312 MESOTHELIOMA MORTALITY IN ARGENTINA 1990–2010

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10.1136/oemed-2014-102362.333

**Objectives** To estimate the number of cases and proportionate mesothelioma mortality in Argentina over the period of 1990–2010.

**Method** Data are from death certificates, Mortality Database (DEIS), Health Ministry of Argentina. Mesothelioma was defined using the following codes of the International Classification of Diseases, 9<sup>th</sup> Rev. 151, 161/2, 164, 195, 199, 212, 229, 235, 495, 500/04, 511, used from 1990–1997; and ICD-10<sup>th</sup> Rev. codes J60, J90, C32, C45, from 1998 through 2010. Proportional mortality was estimated for each calendar year.

**Results** A total of 1734 of mesothelioma deaths were reported, varying widely, from 99 in 1995 to 16 in 1997. There was an increasing (44.0%) trend of deaths overtime. The proportionate mesothelioma mortality in 1990 was 0.3/1000 and showed a linear declining trend until 0.01/1000 in 2010.

**Conclusions** Argentina ban extraction, production, and the asbestos trade in 2001 but little is known about its impact or prospects on workers' health. The number of mesothelioma deaths is growing and it is plausible to continue to increase given its long latency period. Argentinian occupational health and safety authorities need to implement a national surveillance system capable to monitor risk factors and health outcomes for better planning and commitment with workers' health and wellbeing.

#### 0315 OCCUPATIONAL EXPOSURE TO AIR POLLUTION AND BLADDER CANCER

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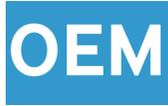
10.1136/oemed-2014-102362.334

**Objectives** To present the rationale behind the qualitative IARC evaluation of outdoor air pollution and the new findings on bladder cancer derived from occupational epidemiological studies.

**Method** The International Agency for Research on Cancer recently used a series of systematic reviews to classify 'outdoor air pollution' as carcinogenic to humans (Group 1). Meta-analytic techniques, including forest plots and the I2 statistic, were used by the IARC Working Group to guide the hazard identification process.

**Results** The IARC Group 1 evaluation was based on an increased risk of lung cancer but the Working Group also noted limited epidemiological evidence for an increased risk of bladder cancer, after accounting for tobacco smoking, from studies of workers occupationally exposed to potentially high levels of outdoor air pollution. These studies were of both cohort and case-control designs and directly evaluated the association of cancer of the bladder with metrics of exposure to outdoor air pollution, traffic or traffic fumes or specific occupations (bus, taxi, and truck drivers).

**Conclusions** Although positive associations were observed in a number of studies that adjusted for smoking, the interpretation of the results is complicated by co-exposures and crude assessment of exposure in some studies.



## 0307 Monitoring Mercury Exposure Among Artisanal and Small-Scale Miners: Developing and Evaluating a Surveillance Protocol

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*Occup Environ Med* 2014 71: A105-A106  
doi: 10.1136/oemed-2014-102362.331

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