

work, insufficient vacation time, affected personal health, unexpected or short notice in shift arrangements, low respect at work, and salary and benefits.

**Conclusions** The problem of high percentage of nurses considering leaving job has been real. This problem was related to high burnout and conflicting with family needs in nurses, most likely caused by high work load and problems in work arrangements.

#### 0260 COMBINED EFFECT OF CIGARETTE SMOKING AND NON-FERROUS METAL EXPOSURE IN THE DEVELOPMENT OF DIGESTIVE DISEASE IN INDUSTRY WORKERS

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**Objectives** Purpose of the study: (1) to determine the prevalence of digestive diseases in workers in non-ferrous metallurgy, and (2) to evaluate the effect of cigarette smoking in the development of digestive diseases in exposed workers.

**Method** A retrospective combined cross-sectional and case-control study was performed. Industry workers from a nonferrous plant and controls were monitored for an 8-year period. All workers received regular clinical examinations: evaluation for \*smoking status, \*occupational exposure to Pb and Cd, \*digestive disease using an epidemiological survey. Four representative groups were selected: Group (1)-exposed smokers, Group (2)-non-exposed smokers, Group (3)-exposed non-smokers, Group (4)-non-exposed non-smokers. The prevalence of digestive diseases was determined in each group. Linear regression analysis was used to assess the correlation between the levels of exposure and biomarkers of exposures, as well as between the amount of smoking and the burden of digestive disease.

**Results** During the studied period, Pb&Cd levels in the air of all workplaces were persistently high (Pb = 0.9–13.3 mg/m<sup>3</sup>; Cd = 0.3–1.3 mg/m<sup>3</sup>). Clinical examination identified the classic symptoms of chronic occupational intoxication with Pb. There was a relatively high prevalence of smoking in group (1) and (2). The prevalence of digestive disease was significantly higher in exposed smokers. Linear regression analysis showed close relationship between the studied parameters.

**Conclusions** There is high prevalence of smoking and digestive disease in industry workers. Cigarette smoking may act as a confounder in the assessment of the severity of occupational disease related to noxious metal exposure in industry workers. The goal for all facilities and workers is to minimise smoking and occupational exposure to noxious agents.

#### 0262 PREVALENCE OF SPONTANEOUS ABORTION IN WORKERS IN THE WOOD-PROCESSING INDUSTRY

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**Objectives** The purpose of the study was to determine the prevalence of spontaneous abortion in workers exposed to organic solvents in the wood-processing industry.

**Method** A retrospective combined cross-sectional and case-control study was performed. Female workers from a wood-

processing factory were monitored for a 10-year period through periodic clinical exams and epidemiologic surveys. Only fertile female workers were monitored, infertile workers (postmenopausal, status post hysterectomy) were excluded. The level of organic solvents was measured in the air during the study period. Each exposed fertile female was matched to a corresponding control subject without exposure to organic solvents. The prevalence rate of spontaneous abortions was evaluated in both groups.

**Results** During the study period, the organic solvents levels exceeded several times the maximal admissible concentrations. There were 366 exposed fertile female workers. The prevalence of spontaneous abortions in the exposed group was higher compared to the reference group and general public. The majority of abortions happened in the first trimester of pregnancy.

**Conclusions** Long-term exposure to organic solvents may cause decreased fertility in female workers. The goal for all facilities and workers is to minimise occupational exposure to noxious agents.

#### 0263 CAN WORKPLACE CHEST X-RAY SURVEILLANCE PROGRAMS SHED LIGHT ON WORKERS' INJURIES? PREVALENCE AND PREDICTORS OF RIB FRACTURES AMONG ACTIVE AND FORMER UKRAINIAN COAL MINERS

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**Objectives** Chest x-ray surveillance programs for pneumoconiosis are well established public health tools. Data on rib fractures, part of the ILO system of classification, may shed light on injuries in these populations. We sought to determine the prevalence of rib fractures from a cross-sectional study of current and former Ukrainian coal miners.

**Method** Between 2001 and 2003, coal miners with at least five years of underground mining experience were randomly selected from employment records of 7000 current and 9000 former miners from three mines. CXRs were read by two NIOSH B-readers. Interviewers collected work and smoking history. The prevalence and predictors of at least one rib fracture with 95% confidence intervals [95% CIs] was estimated using univariate methods and logistic regression.

**Results** Average age was 47.1 years among the 598 active miners and 56.9 years among the 468 former miners. Total mining tenure and years of work at the coal face were similar in both groups, about 20 and 8 years respectively. The prevalence of rib fractures was almost twice as high in former compared with current miners (15.5% [11.6, 19.5%] vs. 7.9% [5.6, 13.3%], respectively). Prevalence increased with age among active miners; among former miners prevalence was highest in 45 to 55 year olds.

**Conclusions** CXR surveillance for pneumoconiosis may have use in monitoring injury among miners. While the prevalence of rib fracture appeared high in this population, caution is warranted interpreting our findings: no comparison groups exist and the use of this methodology for characterising injury prevalence is untested.