

# Occupational and Environmental medicine

*Challenges for Occupational Epidemiology in the 21st Century*

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**FOR OCCUPATIONAL**  
**EPIDEMIOLOGY**  
**IN THE 21<sup>ST</sup> CENTURY**

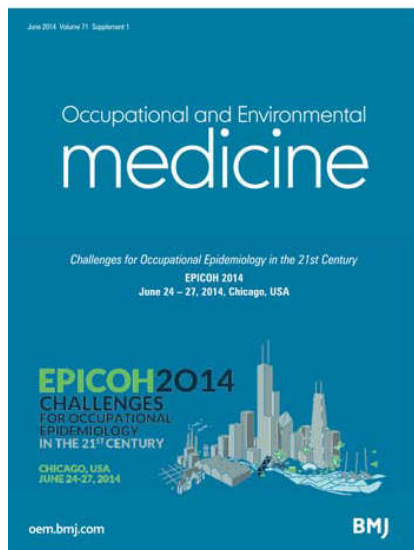
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# Occupational & Environmental Medicine



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**Objectives** To evaluate whether the presence of pleural abnormalities was a reasonable marker to predict mesothelioma among workers with asbestosis in Hong Kong.

**Method** This is a historical cohort study comprised of 99 male asbestosis workers registered in the Pneumoconiosis Clinic under Hospital Authority of the Hong Kong Government during 1981–2008 who had records of chest radiograph at the time of diagnosis of asbestosis. All asbestosis workers were followed up till 31/12/2008 and the rate of follow-up was 97%. We calculated the sensitivity and specificity of the presence of benign pleural abnormalities (i.e., the presence of benign plaques and/or thickenings at the initial chest radiograph) using mesothelioma deaths as the “good standard”; meanwhile, the positive predictive value (PPV) and negative predictive value (NPV) were also calculated.

**Results** Benign pleural abnormalities appeared in the initial radiograph for 54 asbestosis workers. We observed 15 mesothelioma deaths and 4 of them had benign pleural abnormalities at the initial chest radiographs. The sensitivity, specificity, PPV, and NPV for using the baseline benign pleural abnormalities to predict mesothelioma deaths was 0.27 (95% CI: 0.078–0.55), 0.63 (95% CI: 0.52–0.73), 0.11 (95% CI: 0.032–0.27), and 0.83 (95% CI: 0.71–0.91). These results remained unchanged when workers with co-presenting cancer at the baseline were excluded from the analyses.

**Conclusions** This study suggests a relatively limited value for using benign pleural abnormalities as markers to predict mesothelioma deaths in workers with asbestosis. [Acknowledgement: CUHK Direct Grant (Project code.: 2041587), Hong Kong]

#### 0045 CHARACTERISING ADOPTION OF PRECAUTIONARY RISK MANAGEMENT GUIDANCE FOR NANOMATERIALS, AN EMERGING OCCUPATIONAL HAZARD

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10.1136/oemed-2014-102362.199

**Objectives** Exposure to engineered nanomaterials, ENM, (substances with at least one dimension of 1–100 nm) has been of increased interest, with the recent growth in production and use of nanomaterials worldwide. Various organisations have recommended methods to minimise exposure to ENM. The purpose of this study was to evaluate the extent to which U. S. companies follow the guidelines for reducing occupational exposures to ENM, including those issued by the National Institute for Occupational Safety and Health (NIOSH).

**Method** We collected and reviewed survey data, field reports, and field notes for all NIOSH nanomaterial exposure assessments conducted between 2006 and 2011 to: (1) determine the level of adoption of precautionary guidance on engineering and administrative controls and personal protective equipment (PPE), and (2) evaluate the reliability of companies' self-reported use of engineering and administrative controls and PPE.

**Results** Use of PPE was reported by 89% of 46 surveyed or visited companies, and 83% reported using engineering controls for at least some processes to protect workers from

airborne exposures to nanoscale materials. In on-site evaluations, we observed that more than 90% of the 16 engineered carbonaceous nanomaterial companies that responded to an industrywide survey were using engineering and administrative controls and PPE as reported or more stringently than reported.

**Conclusions** Since PPE use was slightly more prevalent than engineering and administrative controls, better communication may be necessary to reinforce the importance of the hierarchy of controls. These findings may also be useful in conducting exposure assessment and epidemiologic research among U. S. workers handling nanomaterials.

#### 0046 THE SHIFTWORK AND THE COMMON MENTAL DISORDERS AMONG NURSING WORKERS

Patricia Baptista, Renata Tito, University of Sao Paulo, Sao Paulo, Brazil

10.1136/oemed-2014-102362.200

**Objectives** This study aimed to identify the occurrence of Common Mental Disorders (CMD), and its association with the shiftwork among nursing workers.

**Method** This is an exploratory study, cross-sectional with quantitative approach that aimed to identify the occurrence of Common Mental Disorders (CMD), and its association with the shiftwork among nursing workers. The research was conducted in a public University Hospital specialised in cardiology, pulmonology, thoracic and cardiac surgery. The sample consisted of workers who work in nursing care units, semi-intensive and intensive, paediatric and neonatal, making a total of 92 participants. For quantitative data collection was used an instrument of socio demographic and the Self-Reporting Questionnaire (SRQ-20). The collection period was between June and July, 2012.

**Results** The result of the analysis revealed the occurrence of CMD in 44.60% (41) of the nursing workers. Regarding CMD, the answer of the workers was distributed according to the four groups of prognostic evaluated by the SRQ-20: Somatic Group, Decrease of vital energy, Anxious-depressive humour and Depressive thoughts. In relation to social demographic variables and CMD, there was no statistic association.

**Conclusions** The results show the importance of protective measures of mental health for workers since the shiftwork brings strain processes.

#### 0047 HEALTH DISORDERS BETWEEN NURSING STAFF IN A PUBLIC HOSPITAL OF SAO PAULO

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**Objectives** This study aimed to identify the injuries and disorders occurred with the nursing staff through the Surveillance System for Nursing Workers Health -SIMOSTE and describe the consequences of injuries.

**Method** This is an exploratory and quantitative study conducted in a public hospital of Sao Paulo. The data were