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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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

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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

collected by a software, the Surveillance System for Nursing Workers Health -SIMOSTE in the period December 2012 to March 2013.

Results The Surveillance System for Nursing workers Health identified 1847 injuries in the period December 2012 to March 2013. There were prevalence of occurrence between nurses (80.94%) and musculoskeletal diseases were the most prevalent (34.70%), followed by diseases of the respiratory tract (13.05%). Regarding the consequences, observed 10.67% of accidents and 86.63% of medical licenses.

Conclusions The data point to the need for development of new shares surveillance focused on the notification of occupational accidents and work-related diseases, and prevention of diseases. The Surveillance system is a technology capable to operationalize institutional policies regarding occupational health and the valuing of human resources, considering that monitoring and analysing the workers' health situation is an indispensible action for the planning of strategies to promote the improvement of their working conditions.

0049 ASSOCIATION BETWEEN WORK EXPOSURE, ALCOHOL INTAKE, SMOKING AND DUPUYTREN'S DISEASE IN A LARGE COHORT STUDY (GAZEL)

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Objectives In view of the debate about biomechanical and toxic factors in Dupuytren's disease, we aimed to describe its relationship with certain occupational factors and alcohol intake and smoking.

Method Subjects in the French GAZEL cohort answered a questionnaire in 2012 included self-reported Dupuytren's disease, such as disabling Dupuytren's disease (including surgery). In 2007, self-assessed lifetime occupational biomechanical exposure was recorded (carrying loads, manipulating a vibrating tool, climbing stairs), as well as alcohol intake, smoking and diabetes mellitus. Analyses were performed on high alcohol intake, smoking and duration of relevant work exposure, stratified by gender for both outcomes.

Results A total of 13 587 subjects answered the questionnaire in 2012 (73.7% of the questionnaire sent) and constituted the sample (10 017 men and 3570 women, aged from 64 to 73 years; mean age for men 68 years and for women 65 years). Among men age, diabetes, heavy drinking and over 15 years of manipulating a vibrating tool at work were significantly associated with Dupuytren's disease; except for diabetes, the association with these factors was stronger for disabling Dupuytren's disease (or surgery). Among the 3570 women included, 160 reported Dupuytren's disease (4.5%). The number of cases in the group of women was too low to reach conclusions, although the findings seemed similar for age, diabetes and vibration exposure.

Conclusions In this large French cohort study, Dupuytren's disease in men was associated with high levels of alcohol consumption and exposure to hand-transmitted vibration. It is likely that the same applied to women.

0050 AN INTERNATIONAL HISTORICAL COHORT STUDY OF WORKERS IN THE HARD-METAL INDUSTRY: EXPOSURE ASSESSMENT

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Objectives A multinational occupational epidemiological study is underway to investigate the total and cause-specific mortality of workers exposed to tungsten carbide with a cobalt binder (WCCo). The study includes 12 US and 9 European plants. The objective of the exposure assessment component, coordinated by the University of Illinois at Chicago, is to reconstruct agent-specific exposure estimates for use in the epidemiological analyses.

Method Quantitative occupational exposures are being generated through a process of modelling and validation using industrial hygiene data from study plants. Innovative semi-quantitative methods are being developed to extrapolate data for years in which it is missing, and are based on exposure changes due to manufacturing process changes over time (e.g., moving from manual to automated methods). Company work history information is being used to construct a job dictionary. The resulting exposure estimates and job dictionary will form the job-exposure matrix.

Results The agents of interest are WCCo, tungsten carbide, tungsten, cobalt, and carbon black. Current and past working environments are being characterised according to products manufactured and operations performed and in relation to potential exposures using sampling data, job descriptions, plant and process histories, and information provided by knowledgeable plant personnel.

Conclusions Exposure estimates will be generated for the study plants. The multinational aspect of the study provides the opportunity to pool data and produce exposure estimates for all 21 facilities with potential insight into similarities or differences among countries and/or plants involved in the same global industry. This presentation will detail the progress to date on the exposure assessment effort.

0052 LEPTIN, ADIPONECTIN, AND HEART RATE VARIABILITY AMONG POLICE OFFICERS

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Objectives To investigate the relationship of leptin and adiponectin with heart rate variability (HRV).