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).

Poster presentation

Method Leptin and adiponectin levels were measured in 388 non-diabetic officers from the Buffalo Cardio-Metabolic Occupational Police Stress study, following a 12-hour fast. HRV was performed according to methods published by the Task Force of the European Society of Cardiology and the North American Society of Pacing Electrophysiology for measurement and analysis of HRV. Mean values of high (HF) and low frequency (LF) HRV were compared across tertiles of leptin and adiponectin using ANOVA and ANCOVA; trends were assessed using linear regression models.

Results Leptin, but not adiponectin, was significantly and inversely associated with HF and LF HRV. BMI and percent body fat (also waist circumference and abdominal height) significantly modified the association between leptin and LF (but not HF) HRV. Among officers with BMI <25 kg/m^2, the association between leptin and HRV was not significant. However, among officers with BMI ≥ 25 kg/m^2, the association between leptin and HRV was inversely related, after adjustment for age, gender, and race/ethnicity; p-values for trend (HF HRV, p = 0.019 and LF HRV, p < 0.0001). Similarly, among officers with percent body fat $\geq 25.5\%$, leptin and LF HRV showed significant, inverse associations (adjusted p for trend = 0.001).

Conclusions Our results show that leptin levels were inversely and significantly associated with HRV among all officers, and particularly among officers with higher levels of adiposity. These results suggest that increased leptin levels may be associated with CVD-related health problems.

0057 | **QUALITATIVE FINDINGS FROM A SAFETY COMMUNICATION AND RECOGNITION PROGRAM ON SAFETY AWARENESS AND TEAMBUILDING IN CONSTRUCTION**

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Objectives To qualitatively explore the impact of a safety communication and recognition program ("B-SAFE") on safety attitudes and beliefs among construction workers.

Method B-SAFE consisted of weekly, detailed feedback to foremen and workers on safe and unsafe work practices. B-SAFE ran for approximately 5 months on three commercial construction sites in Eastern Massachusetts. Sites were paired with a similar worksite (and same owner or general contractor), and data collection methods were identical at each site. Focus groups and key informant interviews were conducted to qualitatively assess the program's impact on workers' perception of site safety. Transcripts of focus groups and key informant interviews were coded and analysed for thematic content using Atlas.ti (V7).

Results At B-SAFE intervention sites, workers noted increased levels of safety awareness, communication, and teamwork, when compared to experiences on-site before the program, and to past worksites. Workers attributed an increase in morale to B-SAFE, noting that increasing safety performance feedback helped to improve safety conditions. One worker stated, "[B-SAFE] increased the level of awareness around safety conditions on-site (...) Instead of cutting corners, we'd do it right." Workers at sites without B-SAFE noted that the safety level was comparable to past worksites.

Conclusions The B-SAFE program led to many positive changes on-site, including an increase in safety awareness, teambuilding,

and collaborative competition. Future quantitative data analysis to evaluate program effectiveness including worker surveys, safety inspections, and injury reports will augment these qualitative results.

0061 | **EPIDEMIOLOGICAL STUDY OF LUNG INFLAMMATION AND OXIDATIVE DAMAGE IN INDIUM TIN OXIDE WORKERS**

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Objectives Indium Tin Oxide (ITO) is widely used in many kinds of touch panels nowadays. Workers could expose to ITO particles from sintering granules, splashing, pulverisation, cutting, and grinding processes. This study aimed to assess the relationship between ITO exposure and lung inflammation and oxidative damage in ITO workers.

Method We recruited 148 exposed workers and 38 control workers from ITO powder process, recycling and ITO target manufacturing plants in Taiwan. Indium in serum (S-In) and urine (U-In) was determined as biomarkers of exposure. Exposed group was further divided as high (S-In > 3 µg/L and low exposed groups (S-In £3 µg/L). Urinary and plasma 8-hydroxy-2-deoxyguanosine (8-OHdG), serum Clara cell protein (CC16), and fractional exhaled nitric oxide (FENO) were measured as biomarkers of oxidative damage and pulmonary inflammation, respectively.

Results The geometric mean air concentrations of indium were 0.0041 ± 2.49 mg/m^3 by area sampling and 0.017 ± 5.20 mg/m^3 by personal sampling. The mean S-In level and U-In level in high exposed group were 8.01 ppb and 3.45 ppb, respectively. The mean levels of S-In and U-In in high exposed group were significantly higher than those of low exposed group. The mean levels of serum CC16 and urinary 8-OHdG in high exposed group were also significantly higher than those of low exposed groups. After adjusting potential confounders, dose-response gradients were found between S-In and CC16 (p = 0.020) and between S-In and urinary 8-OHdG (p = 0.027), respectively.

Conclusions We concluded that indium particles exposure may induce lung inflammation and DNA oxidative damage.

0062 | **ROTATING NIGHT SHIFT WORK IN NURSES AND MIDWIVES AND LIFESTYLE**

Beata Peplonska, Weronika Burdelak, Agnieszka Bukowska, Wojciech Sobala. Nofer Institute of Occupational Medicine, Lodz, Poland

Objectives To investigate the association between rotating night shift work and selected modifiable lifestyle factors among nurses and midwives.

Method The cross-sectional study included 725 nurses and midwives aged 40–60 (354 rotating night shift and 371 daytime workers). Occupational history and data about potential confounders were collected through in-person interview. Weight and height were measured and BMI was calculated. Associations between night shift work characteristics such as current rotating

0052 Leptin, adiponectin, and heart rate variability among police officers

Luenda Charles, Cecil Burchfiel, Khachatur Sarkisian, et al.

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