legislation, all employers have to perform a risk assessment to identify workers exposed to HBV and offer them vaccination. Immunisation should be done as early as possible after the start of their career to avoid HBV infection and the development of a carrier status.

Methods We performed a cross-sectional survey of representatives from the Occupational Medicine section of the European Union of Medical Specialists (UEMS), to find out how policies have been put into practice in the European countries.

Results Answers were received from 21 countries, representing 78% of the population in the EU-28. HBV vaccination was mandatory for medical and nursing staff in 10 countries, mandatory for other paramedical staff, medical and nursing students in nine countries, for paramedical students in eight countries. It was recommended in all other participating countries. Serotesting before vaccination was done in eight countries. The vaccination schedule most often used was 0, 1, 6 months (18 countries). Serotesting after vaccination was done in 18 countries, boosters were recommended in 14 countries. A non-responder policy, including testing for carrier state, was present in 18 countries.

Discussion More consultation between key actors from MS at EU level could help to optimise the way this matter is dealt with in different MS in order to contribute to further reducing HBV transmission to HCWs

Oral Presentation

Shift Work

0108

SHIFT WORK AND SLEEP-RELATED PROBLEMS: A NATIONWIDE SURVEY IN TAIWAN

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Objective 1) To estimate the prevalence of insufficient sleep and poor sleep quality by different shiftwork status in a representative sample of the Taiwan working population. 2) To estimate PARs of sleep-related problems as related to shiftwork.

Methods The data of 22 600 workers aged 20 to 65 years were retrieved from the Survey of Perceptions of Safety and Health in the Work Environment, a nationwide cross-sectional survey conducted in 2010. Insufficient sleep was defined as self-reported short sleep duration interfering with life or work activity. Sleep quality was categorised into very good, good, poor and very poor. Work shifts were classified into fixed daytime, evening, or night, rotating night shift, rotating shift not including night, and irregular. Multivariate logistic regression was used to calculate the ORs and then estimated PARs of sleep-related problems.

Results Among all workers, shift status were as follows: fixed daytime shift 74.7%, fixed evening 10.6%, fixed night 2.3%, rotating night shift 5.3%, rotating shift not including night 2.0%, and irregular 5.2%. The highest prevalence of sleep-related problems was observed among fixed night workers

with insufficient sleep of 12.1% and poor sleep quality 3.5%. Fixed night shift was associated with the highest risk of both insufficient sleep (OR=3.20, 95% CI 2.41–4.18, $p<0.0001$) and poor sleep quality (OR=3.51, 95% CI 2.07–5.62, $p<0.0001$). The estimated PARs of insufficient sleep and poor sleep quality related to rotating night shift were 9.0% and 8.9%, respectively.

Conclusions Night shiftwork was significantly associated with increased risk of insufficient sleep and poor sleep quality among Taiwanese workers.

Oral Presentation

Chemicals

0109

HEALTH EFFECTS OF EXPOSURE TO ARSENIC: A 39 YEARS COHORT STUDY IN MANFREDONIA, ITALY

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Background On September 26th 1976 an accident occurred in a chemical plant located in Manfredonia (Apulia region, Italy) where Caprolactam (plastic) and Urea (fertilisers) were produced. More than 12 tons of arsenic compounds, used in the production of Urea, were released in the atmosphere, contaminating the plant and surrounding areas. Our study investigates late effects of arsenic exposure among workers present on the day of the accident and during the site clearance.

Methods We performed a historical cohort study including 1467 workers (39 females). Follow-up was performed by contacting municipalities of residence in Italy. Death certificates were collected. End of follow-up was either date of death, lost to follow-up or 15th March 2016. Cause specific mortality rates for the period 1976–2015 and 5 year age group were obtained for Apulia region and Foggia Province. Standardised Mortality Ratios will be calculated. Additionally, we will analyse data with Cox regression models by assigning workers to job category (white-collars, blue-collars and contract workers) and work area (fertiliser/plastic).

Results In the analysis restricted to men, we observed a total number of 51 102 person-years, 32 609 for 923 workers directly employed in the plant and 18 415 for 544 contract workers. We observed 307 deaths; 161 among contract workers. Highest mortality rate (8.7 deaths per 1000 person-year) was observed among contract workers. Higher values were observed among workers of the fertiliser work area.

Conclusions The results suggest an increased mortality for all causes among contract workers and employees in the fertiliser area. Cause-specific analysis will be presented.

Poster Presentation

Psychosocial

0110 THE ASSOCIATION BETWEEN PSYCHOSOCIAL FACTORS AND NEEDLESTICK INJURIES AMONG NURSES WORKING IN DIFFERENT HEALTHCARE SETTINGS

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Objective To understand the psychosocial effects of needlestick injuries (NSIs) among nurses working in different healthcare settings.

Method A total of 5535 fulltime registered nurses (RN) working among secondary referral hospitals (SRH) or primary clinics (PC) were recruited between 2009 and 2010. A structured self-administered questionnaire was used to assess nurses' psychosocial working conditions and their experiences of NSIs. The psychosocial working conditions were assessed by the Chinese Job Content Questionnaire and a workplace justice scale. The NSIs were assessed by asking nurses' experiences of NSIs in the past 12 months. Multivariable logistic regression was used to analyse the associations between psychosocial factors and NSIs.

Results A total of 1032 and 1020 eligible questionnaires for SRH and PC nurses were included for final analysis. The incidence rate of NSIs was 15.2% for SRH nurses and 19.9% for PC nurses. Shift work (AOR: 1.8, 95% CI: 1.2, 3.0) and high psychological demands (AOR: 1.5, 95% CI: 1.0, 2.1) were identified as risk factors of the annual incidence of NSIs among SRH nurses, whilst the risk factors of the annual NSIs included low job control (AOR: 1.4, 95% CI: 1.0, 2.0) and low workplace justice (AOR: 1.6, 95% CI: 1.1, 2.4) among PC nurses.

Conclusion This study identified that the psychosocial factors of nurses' NSIs varied across different healthcare settings. Specific strategies for different healthcare settings to prevent nurses' NSIs are warranted.

Oral Presentation

Shift Work

0111 THE ASSOCIATION BETWEEN WORK SCHEDULE CONTROL AND NURSES' BURNOUT IN TAIWAN

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Background Shiftwork and long work hours have been reported as significant risk factors for nurses' burnout. In addition, whether nurses have ability to *control* their own *schedule*, such as having options and decision over swapping shifts or taking unpaid leave, remain lacking.

Objective To examine the associations between nurses' work schedule control (WSC) and their effect on burnout.

Method A total of 3431 fulltime registered nurses working in the hospital were systematically sampled in 2013. A structured self-administered questionnaire was performed to assess nurses' WSC, work schedule demands (WSDs) and their effect on burnout. The WSC was assessed by asking nurses' experiences of requesting leave. Personal and client burnout status were measured using the Chinese version of the Copenhagen Burnout Inventory. Multivariable logistic regression was used to analyse the associations between nurses' WSC and their effect on burnout. The WSDs, including shiftwork patterns and average weekly working hours, were controlled.

Results A total of 2631 questionnaires were eligible for final analysis. Only 5% of participants experienced unrestricted leave. After adjusting for demographic data, both average weekly working hours and unrestricted leave were significantly associated with nurses' personal and client burnout. Nurses exposed to rotating shift work were more likely to experience client burnout.

Conclusion This study identified that work schedule control (WSC) was related to personal and client burnout among hospital nurses. Hospitals wishing to proactively *reduce nurses' burnout* may permit more unrestricted leaves when requested by the staff nurse.