

ability among those with lower grade occupations in the manufacturing and trade sectors.

### 719 ESTIMATING DISEASE BURDENS AND HEALTH CARE COSTS OF WORK-RELATED MUSCULOSKELETAL DISORDERS IN TAIWAN

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**Introduction** Musculoskeletal disorders (MSDs), encompassing low back pain, inter-vertebral disc disorders, carpal tunnel syndromes, disorders of muscle ligament and fascia, sprains and strains of joints and adjacent muscles, are common among working people. While many occupational factors are known to increase the risks for MSDs, there is little information about the disease burden and healthcare costs of work-related MSDs.

**Methods** Healthcare utilisation data was extracted from the database of National Health Insurance (NHI), which is a compulsory healthcare insurance program covering up to 99% of residents of Taiwan. Numbers of outpatient visits and hospitalisation with a primary diagnosis of MSDs and their healthcare costs among the beneficiaries aged 20–65 years old were analysed. Prevalence of self-reported MSDs and exposure prevalence of major ergonomic risk factors by employment sectors were derived from a national representative survey of working people conducted in 2013.

**Results** The one-year prevalence of self-reported MSDs among working men and women were 58.9% and 65.9%, and exposure prevalence rates of any type of ergonomic risk factors among working men and women were 41.2% and 35.4%, respectively. Annual healthcare expenditures for MSDs were over 158 million USD. Preliminary analyses of disease burden estimated that up to 8500 men and 7000 women developed work-related MSDs that required outpatient treatments or hospitalisation in one year. In contrast, only 434 cases of MSDs were recognised and compensated by the workers' compensation insurance in the same year, suggesting a severe under-recognition of work-related MSDs.

**Discussion** Work-related MSDs constitutes a major occupational health concern with substantial disease burden and healthcare costs. While it is important to prevent work-related MSDs, it is equally important to readjust financing strategies to ensure that employers take responsibility for healthcare costs due to occupational factors.

### 735 RETURN TO WORK AND WORK RETENTION IN CANCER IN FINLAND – SEVEN MOST COMMON CANCERS

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**Introduction** Recent report by EU-OSHA reviews research on rehabilitation and return to work after cancer (Tikka, *et al.*, 2017). About half of the annual 3.2 million new cases of cancer occur in working-age individuals. Further, in Europe in

2012, over half of the overall cancer burden was due to breast, colorectal, prostate, and lung cancer.

**Methods** Our study was based on nation-wide register information on ill-health benefits as well as employment and unemployment periods for 2005–2009 in Finland. Eligible subjects had the first full-time sickness absence (fSA) due to cancer diagnosis (prostate/breast, lung, colon, bladder, non-melanoma skin, melanoma, non-Hodgkin lymphoma), were 18–57 years of age and employed on the last day of the index sickness absence spell. They were followed from the first day of fSA until the first return to work (RTW) or other event (partial work disability, rehabilitation, fSA, full work disability retirement [fWDR], unemployment, or exit from labour force).

**Result** Altogether 9162 eligible subjects (2839 men; 6323 women) were identified. For several common cancers, ≥80% of male and female patients were able to return to work. In lung cancer, with low survival rates, only around 25%–30% returned to work. After RTW, in prostate cancer and breast cancer, 70% were at work after 48 months. As to time spent in different statuses, 80%–85% of prostate cancer patients returned to work in 4–5 months, with fWDR and unemployment emerging eventually at 5%–7% level. Similarly, for breast cancer, 80% of the subjects returned to work in 10 months, with around 7% with fWDR from that onward.

**Discussion** Overall, for most common male and female cancers, around 80% of subjects were able to return to work within the first 4–12 months and 50%–60% were at work at the end of follow-up, with the exception of lung cancer, a fatal disease.

### 785 OCCUPATIONAL EXPOSURE TO MERCURY IN A SMALL SCALE GOLD MINING WORKERS AND FAMILIES IN HANDENI, TANZANIA

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**Introduction** Mercury is a highly dangerous neuro-toxicant. High exposures in artisanal gold mining have significant health and environmental impacts. We aimed to determine mercury exposure levels and to assess the health effects among the artisanal gold miners and their families

**Methods** A cross sectional descriptive study was conducted on 292 miners and their families. Interviews and medical examinations were conducted. A sample of 30 participants with history of mercury use had mercury analysis performed on their hair, urine and blood by Inductively Coupled Plasma Optical Emission Spectrometry. Data analysis was done using Epi-Info.

**Result** The mean mercury levels in urine and blood were 46.3 µg/L and 14.5 µg/L respectively, with a maximum of 74.7 µg/L for urine and 56.7 µg/L for blood. Out of 21 urine samples, 10 (47.6%) exceeded the maximum World Health Organisation (WHO) acceptable level of 50 µg/L. Out of 25 blood samples, 13 (52%) exceeded the WHO normal range of 5–10 µg/L. All hair samples were below the detection limit of 0.01 ppm. Miners engaged in amalgamation and burning of amalgam had higher mean mercury levels in urine (54 µg/L,  $p=0.03$ ) and blood (14.3 µg/L,  $p=0.9$ ) than others. Tremor of the eyelid (30%) was significantly higher ( $p<0.005$ ) in miners than non-miners. Miners recorded blue line in gums (34%),