

cancer (AF=2.0%–5.2%, 460–1180 cases), followed by solar radiation, with 415 skin cancers (AF=1.3%). Workplace exposure to environmental tobacco smoke (ETS) was associated with 5.8% (~60 cases) of lung cancers among never-smoking women, and radon exposure in buildings resulted in almost 80 lung cancers (AF=0.7%). AFs were overall higher for men, but similar between men and women for radon and ETS among never smokers.

Conclusion In burden studies, assessing the impact of uncertainty in exposure and risk estimates is a challenge. The impact is, however, amplified among women because estimates are derived from studies primarily on male workers.

Oral Presentation

Dusts and Fibres

0380 MESOTHELIOMA MORTALITY IN GREAT BRITAIN: AN UPDATED ANALYSIS OF TRENDS BY GEOGRAPHICAL AREA AND OCCUPATION 1981–2014

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Background mesothelioma mortality rates in GB have increased tenfold over the last four decades and are currently the highest of any country worldwide. The mesothelioma register contains all deaths mentioning mesothelioma and includes area of residence and occupation of the deceased.

Aim to update descriptive analyses of mortality trends by geographical area and last occupation of the deceased to provide evidence about past sources of mesothelioma risk in the GB population.

Methods Standardised Mortality Ratios (SMRs) were calculated for local and unitary authority areas; Proportional Mortality Ratios (PMRs) were calculated for categories derived from Standard Occupation Classification coding of job titles from death certificates. Temporal trends in SMRs and PMRs over the period 1981–2014 were examined using Generalised Additive Models (GAMs).

Results the influence of geographically-specific sources of past asbestos exposure is still seen in recent mesothelioma mortality rates; areas with the highest SMRs in males tend to be those known to contain large industrial sites that used asbestos such as shipyards. However, the strong effect of asbestos exposures in jobs associated with construction work – which would have been geographically less heterogeneous – is seen in analyses by occupation, and temporal trends suggest that such exposures continued for longer than those associated with specific locations.

Conclusions these results reflect the legacy of widespread industrial asbestos use in GB and particularly emphasise the effect of exposures within the building industry which are likely to have continued after those in specific industries such as shipbuilding and manufacturing were substantially reduced.

Oral Presentation

Working Conditions

0381 THE POTENTIAL IMPACT OF THREE WORKPLACE ACTIONS ON RETURN TO WORK AFTER A WORK-RELATED MUSCULOSKELETAL OR PSYCHOLOGICAL INJURY

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The objective of this study was to examine the impact of three workplace actions on return to work (RTW) following a musculoskeletal (MSK) or psychological injury. The three workplace actions were: a positive supervisor or co-worker response at the time of injury; a low stress interaction with the workplace RTW coordinator; and an offer of modified duties. We used a longitudinal cohort of 869 Victorian workers' compensation claimants. Respondents were interviewed at baseline (approximately 4 months after injury), and again 6 and 12 months later. Our analytical sample was 703 respondents who had complete information on all workplace factors and potential covariates. Of our sample, 40% of respondents reported all three positive workplace actions and 12% reported none of the positive actions. Using a potential outcomes modelling approach, we estimated difference in RTW rates at baseline, 6 months and 12 months if all respondents received all positive actions, versus all respondents received no positive actions. Inverse probability weights were used to balance the sample in relation to covariates including respondent age, sex, injury time, time since injury, workplace size, pre-injury job autonomy and pre-injury physical demands at work. At baseline, if all respondents received all three workplace actions, 51% of respondents would have sustained RTW compared to 22% if all respondents received none of the actions. At 6 months the comparable rates were 73% versus 46%, and 67% versus 50% at 12 months. Our study demonstrates the importance of the workplace actions on RTW rates at multiple points following injury.

Oral Presentation

Injuries

0382 INCREASING MALE/FEMALE INEQUALITIES IN RATES OF WORKPLACE VIOLENCE IN ONTARIO BETWEEN 2002 AND 2014: A COMPARISON OF TWO DATA SOURCES

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Literature examining male/female differences in rates of workplace violence has produced mixed findings. This study examined trends in rates of workplace violence using two population level data sources. These were: workers' compensation claims for assaults that required time off work; and emergency department visits for assaults or accidental contact from another person, where the treating physician determined that the payer should be workers' compensation. For both data sources, denominator information of the population at risk was generated by sex, age groups and time period using the Labour Force Survey.

Over the period 2002 to 2014 rates of assault among men remained stable, from 31.5 per 100,000 FTEs to 32.5 per 100,000 FTEs. Conversely among women rates of lost-time claims due to workplace violence increased from 38.9 per 100,000 FTEs to 59.1 per 100,000 FTEs - an absolute increase of 20.2 assaults per 100,000 FTEs, and a relative increase of 52%. These divergent trends were mirrored in the emergency department records, with rates of ED presentations among men remaining stable between 2004 and 2014 (38.2 to 39.8 per 100,000 FTEs); while among women rates of presentation increased from 34.9 per 100,000 FTEs to 52.9 per 100,000 FTEs - a relative increase of over 50%. In both time periods rates of assaults were relatively stable for men and women up till about 2008/09, after which point rates diverged between men and women. Using two data sources this study demonstrates increasing male/female inequalities in workplace violence in Ontario.

Poster Presentation Specific Occupations

0383 CARING FOR CARE-GIVERS: TESTING THE IMPACT OF A MANAGEMENT-DRIVEN HEALTH INTERVENTIONS ON JOB SATISFACTION AND RETENTION OF ELDER-CARE EMPLOYEES

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In the United States, the dramatic growth in the ageing population is predicted to place increased demand on long-term care facilities in the coming decades. The work of employees providing direct care to the elderly in these facilities is characterised by long or variable work shifts, physical and emotional strain from caring for the aged, and low wages. An important challenge facing long-term care employers is focused on increasing retention among employees. Researchers at the University of Minnesota are collaborating with leadership at a non-profit elder care organisation with facilities in Minnesota and Iowa to implement and evaluate management-led interventions to 1) improve employees' health behaviours, and 2) increase workplace social and managerial support with the intended outcome of improved job satisfaction and retention.

Components of the intervention include provision of Fitbits to participating employees and initiation of management driven health activities. The study will evaluate effects of the intervention on health behaviours, perceptions of organisational support, and job satisfaction. Baseline survey results indicate that management differs from other direct care workers in the measures of organisational support and job satisfaction, but does not differ in health behaviours. Upon completion of the 9 month intervention, the influences of change in health behaviours and change in perceptions of organisational support will be evaluated in association with measurements of job satisfaction and compared to job retention information. Findings will be used to inform internally sustainable, management-driven interventions to maintain a healthy and happy workplace. Preliminary results will be presented.

Poster Presentation Respiratory

0384 ENDOTOXIN EXPOSURE AND LUNG DISEASE IN SAWMILL WORKERS: A COHORT STUDY

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Objectives Previous studies have linked endotoxin exposure with increased risk of COPD, but a decreased risk for lung cancer. We examined these associations in a cohort of British Columbia (BC) sawmill workers followed between 1950 and 1995.

Methods The cohort comprised all male production and maintenance workers (n=25,685) at 14 BC sawmills employed for at least one year between 1950 and 1995. Lung cancer cases were identified through the provincial cancer registry, and COPD cases through the provincial hospital discharge data. We assigned cumulative endotoxin exposure for each subject based using a job-exposure matrix built on measurement data obtained at 4 of the study mills. Subjects were assigned to exposure quintile groups for analysis (groups between <1.5 ng/m³ and >14.7 ng/m³), and adjusted risk estimates for each group were calculated using Poisson regression, controlling for potential confounders (smoking that was indirectly addressed).

Results Relative risk of lung cancer for highest exposed group was 0.73 (95% CI 0.55–0.98) compared to the reference group, with a slight trend of decreasing risk with increasing endotoxin exposure. Relative risk for COPD in the highest exposed group was 1.9 (95% CI of 0.95–3.70) compared to the reference group, with a slightly increasing trend with increasing endotoxin exposure. Results did not change when different lag times were examined.

Conclusion Our findings of a protective effect for endotoxin exposure and lung cancer, and a positive association between endotoxin and COPD are consistent with previous studies, but at lower exposure levels.