Poster Presentation

Injuries

0421 INJURY SEVERITY, RETURN TO WORK, AND OUTCOMES IN COLLECTIVELY-BARGAINED ALTERNATIVE WORKERS' COMPENSATION ARRANGEMENTS

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Introduction The construction industry experiences severe injuries. When an employee is injured, the goal is to minimise long-term disability and efficiently return the employee to work. The Union Construction Workers Compensation Program (UCWCP) of Minnesota provides an alternative, collectively-bargained system administered by workers' compensation insurance providers. The program includes exclusive provider network for medical care and access to alternative dispute resolution process. The goal of this study is to determine injury outcome differences for UCWCP members.
Methods Workers' compensation claims were examined over a ten year period. UCWCP membership and date of enrollment were determined. Claims were stratified by medical or lost-time status. Multiple measures of severity and outcome were examined, including claim rate and duration, time to return-to-work, and permanent partial disability status. We calculated rates and comparative risk based on UCWCP. A logistic model will estimate rate ratios (RR) and 95% confidence intervals (CI) as a function of claim rate. Time-to-event models will assess differences in duration of disability based on UCWCP. Proportional hazards regression estimated hazard ratios (HR) and 95% CI.
Results UCWCP employers had a lower rate of lost-time claims. Compared to non-UCWCP employers, UCWCP-membership was associated with a 9% increased likelihood of claim closure for both medical and lost-time claims (HR=1.09, CI=1.05–1.13; HR=1.09, CI=1.02–1.17). Most differences occurred in the first 90 days. Return-to-work likelihood and reduced permanent disability appeared to be related to UCWCP.
Conclusions Alternative workers' compensation arrangements may include elements that collectively protect workers' interests, reduce injury severity, and are cost-effective for insurers.

Oral Presentation

Specific Occupations

0422 A TOTAL WORKPLACE SAFETY AND HEALTH PROJECT FOR SECURITY OFFICERS IN A SINGAPORE UNIVERSITY – FROM NEEDS ASSESSMENT TO INTERVENTIONS AND EVALUATION

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Objectives To implement and evaluate a Total Workplace Safety and Health Project (Total WSH) at a security office in a Singapore university.
Methods Total WSH is an integrated approach to the management of health and safety in the workplace. In the first phase of our project, we evaluated the gaps and challenges of the safety and health management system within the department, and gained understanding of the health status of the security officers, through assessment tools including a Basic Health Survey, workplace visits and semistructured interviews. Recommendations were subsequently discussed with the senior management for implementation in the intervention phase, with evaluation of process and outcome measures thereafter.
Results Strong communication among all staff in the security office was noted, and this is related to the openness of staff across different management levels. All staff took part in the Basic Health Survey, which found that 91% have a "Good" or "Excellent" Work Ability Index. There is a high proportion of employees with chronic diseases and obesity. In addition, 36% of employees consume sweet drinks daily, while only 16% and 37% consume two servings of fruits and vegetables a day respectively. Recommendations were made related to the safety and health management system, and health promotion such as improving access to healthy food, facilitating physical activity during work, and implementing a chronic disease management system. These recommendations would be implemented from January 2017 onwards.
Conclusion Total WSH is effective in enabling the holistic management of safety and health in the workplace.

Oral Presentation

Injuries

0423 GEOSPATIAL TRENDS IN OCCUPATIONAL INJURY AND WORKERS' COMPENSATION UTILISATION

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Introduction Workers' compensation data provide a source of information on occupational injuries and their burden on workers and the workplace. Injured workers utilise healthcare systems for treatment of their injuries and various factors may influence access to care and the ultimate outcome of the claim. Some factors may be dependent wholly, or in part, on geographical access to care and the communities in which employees live. We explored a new injury surveillance and analysis technique by coupling of geographical information systems (GIS) and workers' compensation data.
Methods Employee addresses were geocoded using Esri Street Map to determine spatial trends. Time/distance (accessibility) to health care providers were calculated. Geographic masking maintained individual-level confidentiality. We calculated rates and comparative risk of severity and disability duration of workers' compensation claims based on accessibility. Using a negative binomial model, we estimated rate ratios (RR) and 95% confidence intervals (CI) as a function of claim rate. Cox proportional hazards regression assessed differences in duration of disability benefit levels based on accessibility to

healthcare and estimated hazard ratios (HR) and 95% confidence intervals (CI).

Results Multiple atlases of occupational injuries was constructed to visualise trends in location, industry, injury characteristics, and severity. Accessibility to healthcare, specifically specialty health care, affected risk of increased severity, claim duration, and disability.

Conclusions This innovative way of combining and visualising data may identify risk factors for occupational injury, including those that may be spatially or community-based. It may provide new strategies for proactive injury prevention or severity reduction efforts

Oral Presentation

Other

0424 RISK OF MESOTHELIOMA AND RISK OF EXPOSURE TO ASBESTOS IN PEOPLE SUPPOSEDLY UNEXPOSED TO ASBESTOS

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Objectives Malignant mesothelioma (MM) is a rare and generally fatal cancer, usually caused by asbestos, although about 5%–10% of cases report no asbestos exposure. This study aimed to identify sources whereby people in Western Australia (WA) may be unknowingly exposed to asbestos or to other exposures which may cause MM.

Methods Cases with no known asbestos exposure were selected from the WA Mesothelioma Register. Matched controls were selected from hospital patients admitted for conditions unrelated to asbestos. Occupational histories were coded by an industrial hygienist. Data were analysed using conditional logistic regression.

Results Eligible cases were far fewer than anticipated. After 9 years there were 38 MM cases (from a total of more than 400 reported cases of MM over the same time period), 65 other cancer controls and 69 medical controls recruited. Odds ratios did not differ by type of control so both sets of controls were combined. Thirty-eight MM participants and 134 controls were recruited. Risk of MM was increased (OR=3.1, 95% CI 1.0–9.6) after no known, but likely, exposure to asbestos at work.

Conclusions Because of its widespread use, very few people in WA have never been exposed to asbestos and careful elucidation of occupational and environmental histories usually uncovers likely exposures sufficient to cause MM. This study suggests that most cases of MM in people with apparently no known exposure to asbestos occur, at a low rate, among the large numbers of people who have had small amounts of incidental asbestos exposure.

Oral Presentation

Risk Assessment

0425 AN OCCUPATIONAL EPIDEMIOLOGY MODEL FOR CLIMATE CHANGE IMPACT ASSESSMENT

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Thermal physiology science shows the health threats to workers caused by exposure to heat when doing heavy physical labour. Climate change increases environmental heat levels in most of the world and it is a key issue for climate change and health research. Our model links climate and workforce data (current and predicted) and estimates work capacity loss at individual and population level and related economic loss. The model incorporates climate conditions, population estimates, workforce distributions, heat exposure estimates, exposure-response relationships, and socio-economic impact functions. The basis of the model is occupational epidemiology.

Much of the data upon which heat stress health risk functions are based comes from thermal physiology laboratory research. While this research has provided valuable information about human function at different heat exposures, the individuals studied are generally not the same mix of ages and physical conditions of typical working populations. Very few published studies have included the quantitative occupational epidemiology analysis needed for climate change related health risk assessments. For example, different model settings produce annual moderate intensity work hours lost due to heat (in the shade) by the 2050s at 0.7%–1.6% for USA and 1.1%–3.0% for China. Many of these lost hours will reduce the annual GDP, estimated at 34 trillion USD in the USA and 58 trillion in China (2050). Even a small loss creates many billion USD of economic losses. Our model can identify evidence missing for reducing the uncertainties in impact estimates, which can guide decisions about climate change mitigation and adaptation.

Poster Presentation

Chemicals

0426 CHRONIC CADMIUM INTOXICATION WITH RENAL INJURY AMONG WORKERS IN A SMALL-SCALE SILVER SOLDERING COMPANY

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