

Poster Presentation

Methodology

0163 **COMPARISON OF RISK ESTIMATES FROM COX PROPORTIONAL HAZARDS AND POISSON MODELING FOR ASSOCIATION OF OCCUPATIONAL TITANIUM DIOXIDE EXPOSURE AND SELECTED CAUSES OF DEATH**

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Cox proportional hazards and stratified Poisson regression are commonly used models for time-dependent data in epidemiologic studies. However, whether these methods consistently produce comparable results for the estimate of risk for both rare and prevalent outcomes is unclear.

Data from a previous study that utilized stratified Poisson regression to investigate relationships between selected causes of death and annual cumulative exposures to titanium dioxide (TiO₂) were reanalysed using Cox proportional hazards modelling. The study cohort included 3,607 workers employed in three US manufacturing facilities, followed 1935–2006. Analyses were completed for cumulative doses in mg/m³-year with no lag and lagged 10 years, with all models specified similarly for covariates.

Overall, the Cox and Poisson models resulted in similar estimates in most dose categories for the selected causes of death, with no statistically significant indication of a positive association between TiO₂ exposure and death from all cancers, lung cancers, non-malignant respiratory disease, or all heart disease. The Cox model routinely produced narrower 95% confidence intervals (CI), although overlapping with those from Poisson. Borderline disagreement results were associated with risk estimates lagged 10 years for heart disease at dose >80: 1.51 (CI: 1.00, 2.25) from Poisson and 1.356 (CI: 0.922, 1.995) from Cox; and for all cancers at dose 15-35: 1.35 (CI: 0.89, 2.04) from Poisson and 1.485 (CI: 1.005, 2.193) from Cox.

Oral Presentation

Policy/Impact

0164 **EARLY REPORTING INCENTIVES TO REDUCE TIME BETWEEN INJURY AND CLAIM: A MULTIPLE BASELINE INTERRUPTED TIME SERIES ANALYSIS OF TWO AUSTRALIAN WORKERS' COMPENSATION JURISDICTIONS**

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Background Early access to healthcare and work rehabilitation services provided by workers' compensation is associated with faster return to work and reduced claim costs. Incentivising employers to report claims early following injury may reduce time to service access and improve injured worker outcomes. We investigated the impact of legislated early reporting

incentives on claim processing time in two Australian workers' compensation jurisdictions.

Methods A multiple baseline interrupted time series (ITS) design was used to evaluate incentive impact on claim processing time using Australian administrative workers' compensation data. We compared median days between injury and lodgement (lodgement time), lodgement and claim acceptance (decision time), and total processing time in South Australia (SA) and Tasmania (TAS).

Results Total time was not immediately affected by incentives, though there was a significant downward trend of one-third a day per month in both jurisdictions relative to the comparator. Lodgement time decreased significantly in both jurisdictions, though the magnitude of impacts differed. A concurrent increase in decision time was observed in TAS but not in SA.

Conclusions Our findings suggest that employer focused early reporting incentives may have long-term impacts on claim processing time. However, we also observed unanticipated effects such as increases to insurer decision making time, as well as differential impacts between jurisdictions despite identical policy intent. While co-occurring events such as other legislative changes limit causal inferences, ITS analyses provide a useful approach for investigating the impact of legislative change on policy relevant outcomes in workers' compensation systems.

Poster Presentation

Exposure Assessment

0165 **A JOB EXPOSURE MATRIX FROM SELF-REPORTED PHYSICAL EXPOSURES: A METHOD TO CONTROL BIAS FROM SYMPTOMS**

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Background Self-reported physical exposures are prone to bias from symptoms. Job Exposure Matrices (JEM) can give unbiased estimates but do not capture variation of exposures within the same job. This study created JEMs from self-reported exposures, both including and excluding responses from symptomatic workers, and compared these three exposure measures and their associations with hand/wrist pain.

Methods 35 000 employed French workers from the CONSTANCE cohort reported work-related physical exposures and current symptoms in the hand and other body areas. We grouped self-reported exposures at the level of the job title to create two JEMs - a full JEM including all workers, and an asymptomatic JEM excluding workers with pain symptoms. We examined differences in exposure estimates between the full and asymptomatic JEMs and the change of within-group and between-group variance. Log-binomial models tested strength of association between individual, full and asymptomatic JEMs to hand pain.

Results Most job-level exposure estimates were lower in the asymptomatic JEM. There was smaller within-group variance and larger between group variance in the asymptomatic JEM, demonstrating more homogenous exposure groups. Preliminary regression models showed similar estimates of association