04E.3 UTILITY OF ROUTINELY RECORDED DATA ON WORKING HOURS FOR AN EPIDEMIOLOGICAL COHORT STUDY OF 60,000 SWEDISH HEALTH CARE EMPLOYEES

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Night and shift work is common in industry and service that must be functional 24 hour. Night work disrupts the circadian rhythm, and is potentially linked to an excess of cancer (especially breast cancer), cardiovascular disease, pregnancy complications, as well as to psychical effects. Large studies with detailed and objectively collected data on working hours are needed to confirm causal associations and develop practical advice on how shift schedules should be planned in order to minimize negative health effects.

Stockholm County Council employs a high number of health care workers of which many are working in shifts. We have formed a cohort of those employed from 2008 to 2016, 45 000 women and 15 000 men. The computerized employment register holds individual records on working hours day by day in retrospect since 2008, and information on night work since year 2000. Information on cancer incidence, hospital discharge diagnoses of cardiovascular disease, pregnancy outcome, and causes of sick-leave have been obtained from national central registers.

There were typically three work shifts: morning shifts (07–15), afternoon shifts (14–21), and night shifts (21–07). Non shift-workers typically worked (08–17). So far, we have investigated work shift patterns for those with a high percentage of night work: nurses, assistant nurses and midwives. Among these, 22% worked at least one night per month, and 15% worked at least 5 nights per month in 2009, which increased slightly to 23% and 16% respectively in 2016. It was common to work several nights in a row: in 2009 13.8% worked at least 3 consecutive nights or more per month, which increased to 15.5% in 2016. Only 0.6% worked 5 consecutive nights or more per month.

Analyses of cancer, pregnancy outcome, cardiovascular disease and psychical outcomes are planned for 2019.

04E.4 APPLICATION OF PROBABILISTIC BIAS ANALYSIS TO ADJUST FOR EXPOSURE MISCLASSIFICATION IN A COHORT OF TRICHLOROPHENOL WORKERS

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This method was developed to demonstrate the application of probabilistic bias analysis to quantify and adjust for exposure misclassification in a historical cohort mortality study of New Zealand trichlorophenol workers where exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) was measured as a multi-level variable. Published exposure information available for this cohort of workers was used to specify the initial bias parameter distributions, which were then varied under 18 different scenarios to assess the potential impact of

differing amounts of misclassification as well as both non-differential and differential exposure misclassification. For each scenario, each bias parameter distribution was sampled 50 000 times using Monte Carlo simulation techniques to generate adjusted counts of cases and non-cases of ischemic heart disease (IHD) by exposure group. These counts were then used to calculate odds ratios adjusted for exposure misclassification and the associated exposure misclassification error terms. Given the specified assumptions, the geometric mean (GM) adjusted odds ratio had a range of 2.89 to 5.05, and the GM error term ranged from 0.60 to 1.05. In all non-differential scenarios and scenarios in which non-cases had greater proportions of misclassification, the observed odds ratio of 3.05 was closer to the null (i.e., 1) than the GM adjusted odds ratio. For the differential simulations where cases had higher proportions of misclassification, the direction of the error was dependent on the level of misclassification error, with smaller proportions of misclassification resulting in the observed odds ratio being farther away from the null than the GM adjusted odds ratio. These findings demonstrate that probabilistic bias analysis of historical cohort mortality studies can be an effective tool for understanding trends in study error stemming from exposure misclassification and confirm the importance of quantifying potential sources of systematic error.

04E.5 ABSTRACT WITHDRAWN

Musculoskeletal Disorders-2

05A.1 DEFINITION OF CASE MANAGEMENT FOR RETURN-TO-WORK IN THE APPROACH OF WORKERS WITH MUSCULOSKELETAL DISORDERS: AN UPDATE USING A SCOPING REVIEW

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Purpose We aim to identify the elements and functions that define the case management in the individual approach of workers with musculoskeletal disorders for return to work and to propose an updated definition.

Methods Relevant articles were identified through a computerized search up to 1 December 2017 in the bibliographic databases PubMed, Web of Science, Scopus, Cochrane Library, IBECs, EMBASE, and LILACS. Language filter (English and Spanish) was included in the search. The inclusion criteria were working age population with musculoskeletal disorders, studies that described or evaluated case management interventions, and return to work interventions. Military personnel, and rheumatic and surgical pathologies were excluded.