soluble MWFs, synthetic MWFs and polycyclic aromatic hydrocarbons (PAHs) not included in MWFs. Three quantitative time-varying metrics were used in the models: the duration, the frequency-weighted duration and the cumulative exposure index. Cox models were fitted with the standard partial likelihood approach using only the 3 countermatched controls for each case as well as by maximizing the pseudolikelihood which uses all the controls sampled for each case with calibrated weights.
Results Compared to the standard method, in the pseudolikelihood approach there is a reduction in the variance of the estimates for straight MWFs, synthetic MWFs and smoking but an increase for soluble MWFs and PAH. The hazard ratios that were > 1 with the standard method were attenuated when considering the pseudolikelihood approach. The hazard ratios for the straight MWFs in the pseudolikelihood approach were 1.10 (95% CI: 1.01 – 1.19) per year of exposure and 1.33 (95% CI: 1.05 – 1.7) per full-time equivalent year of exposure.
Conclusion Nested case-control study under countermatching design would benefit from pseudolikelihood approach. Results from the current study suggest that occupational exposure to straight MWFs increases the risk of bladder cancer.

O-300 CORRECTING THE REFERENCE LIFE TABLE IN MORTALITY ANALYSIS: APPLICATION IN A COHORT OF SEWER WORKERS

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Objectives To apply correction in life tables in mortality analyses to address selection effect with respect to the reference population in a cohort of sewer workers.
Methods We used excess hazard model to assess the excess mortality from all-cause and from all-cancer in an historical cohort of 1898 sewer workers between 1960 and 2011. National and regional life tables were available to assess the all-cause and the all-cancer background mortality. The corrections of these life tables were modeled by spline functions in the logit of survival scale. The excess hazard was modeled using splines functions with the time since hiring as the time scale. The parameters of the model were estimated by maximizing the likelihood. The expected excess number of cases were estimated using both regional and national model-based corrected tables and compared to those obtained without correcting the life tables. In a simulation study estimates were obtained using the corrected life table with a known model of correction (i), using the uncorrected life table but applying the model of correction (ii), and without model of correction (iii).
Results The simulation study showed that applying the model of correction reduces the estimation bias in the excess rate model. In the cohort study, for all-cause mortality, the difference between the excess numbers of cases estimated reduced from 28.0 using the original life tables to 1.5 when a model of correction was applied. For all-cancer mortality, the difference reduced from 24.3 to 11.8. However, the standard error was doubled.
Conclusions The differences between estimates obtained using two reference life tables decreased when the model of correction was applied at a cost of larger confidence intervals. Correction in life tables can be applied in mortality analyses when the life tables available are not fully suitable to the cohort studied.

O-304 CONCORDANCE BETWEEN THE CANADIAN JOB-EXPOSURE MATRIX (CANJEM) AND EXPERT ASSESSMENT IN OCCUPATIONAL EXPOSURE ASSESSMENT AMONG JOBS HELD BY WOMEN

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Introduction The Canadian job-exposure matrix (CANJEM) is a general population JEM built from expert assessment data of 31,673 jobs held by 8,760 participants from four Montreal case-control studies.
Objective To examine the validity of CANJEM for jobs held by women, by comparing exposure assessments using CANJEM and our expert assessment method to a selected list of 69 agents.
Methods We compared the exposure estimates for 69 agents within a population-based case-control study of lung cancer assigned by expert assessment to those derived from CANJEM. We linked the job histories of 998 women (3403 jobs) to CANJEM and thereby, derived probability of exposure to each of the 69 selected agents in each job. To create binary exposure variables (exposed/unexposed), we dichotomised probability of exposure using two cutpoints: 25% and 50% (referred to as CANJEM-25% and CANJEM-50%). Using the 3403 jobs as units of observation, we estimated the prevalence of exposure to each selected agent using CANJEM-25% and CANJEM-50%, and using expert assessment. Further, using expert assessment as the gold standard, for each agent, we estimated sensitivity, specificity and Kappa.
Results CANJEM-based prevalence estimates correlated well with the prevalences assessed by the experts. Sensitivity, specificity and Kappa varied greatly among agents, and between CANJEM-25% and CANJEM-50% probability of exposure. For some agents such as fabric dust and cooking fumes, the concordance between CANJEM-based and expert-based assessments was high and inspired confidence that CANJEM-based assessments will be adequate; however for many other agents, the concordance was low. We present concordance estimates for 69 agents.
Conclusion Exposure concordance measures between CANJEM and expert assessment differed greatly by agents. The results of this study could guide users of CANJEM as to which agents are most likely to provide results that mimic those that would be obtained with expert assessment.

O-467 EVALUATING THE IMPACT OF SEX AND GENDER ON THE PERFORMANCE OF MACHINE LEARNING FOR AUTO ENCODING OF JOB TITLES

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Introduction Ongoing studies into the use of algorithms for the automated coding of job titles to the Canadian National