lying around the house; assisting a client with using a sharp; and disposing of sharps. Poisson regression modelling was used to identify important predictors of handling or encountering used sharps. By linking these results to national data on HC visits and clients, we estimated the frequency with which these hazardous conditions occur to HC aides nationwide.
Results Although not authorised to do so, 7% of aides assisted clients to use a sharp. Aides were much more likely to encounter sharps if they were employed directly by clients/families than if employed through an agency. Other important determinants of sharps exposure included client medical conditions like diabetes, and aide characteristics including professional certification.
Conclusions The results are being investigated further through focus groups of HC aides and used to develop preventive interventions.

0305 THE NIEHS GULF STUDY: QUESTIONNAIRE RESULTS AND USE OF JOB EXPOSURE MATRICES TO LINK INHALATION AND DERMAL EXPOSURE ESTIMATES TO STUDY SUBJECTS

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Objectives To describe the activities of the GuLF STUDY participants responding to the Deepwater Horizon oil release in the Gulf of Mexico in 2010 and the process of developing job exposure matrices (JEMs) of exposure group/location/time period combinations to link inhalation and dermal exposures to the participants.
Method Information on activities performed by the participants in the NIEHS epidemiologic study were collected via questionnaire with details on almost 100 clean-up activities (e.g., skimming); dates; amount of time spent performing these activities; and the geographic location where these activities were performed. The questionnaire also collected information on frequency of exposure to various oil components onto various parts of the body and the use of protective equipment. JEMs of inhalation and dermal exposure estimates have been developed for total hydrocarbons for unique exposure group/vessel/time period combinations.
Results Preliminary data indicate over 6000 study subjects reported patrolling the beaches, reported removing tar balls, and reported removing oil or oily sand. Over 5000 collected oily plants, a similar number bagged oiled material and over 4000 decontaminated vessels or equipment of oil. Approximately one-third of the study subjects worked on the water; about 5% worked near the wellhead.
Conclusions Study subjects performed a variety of activities at multiple locations that resulted in different levels of inhalation and dermal estimates. These estimates will be used in the evaluation of exposure-response relationships in the epidemiologic study.

0309 BURDEN OF CANCER ATTRIBUTABLE TO OCCUPATIONAL DIESEL ENGINE EXHAUST EXPOSURE IN CANADA

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Objectives To estimate the number of new lung cancers cases in Canada attributable to occupational diesel engine exhaust (DEE), which IARC classified as a definite human carcinogen in 2012. This is part of a larger effort to estimate the current burden of occupational cancers in Canada.
Method Relative risks were selected from two recent studies of miners and truckers with quantitative exposure-response. CAREX Canada estimates of exposure prevalence and level by detailed industry and occupation were supplemented by a literature search for DEE measurement data. For each exposure group, RRs were assigned based upon the estimated mean exposure. Employment trends of industries and occupations were based upon census data from multiple years. Annual Labour Force Survey data were used to attribute age- and tenure-distribution, as well as short-term turnover characteristics. Survival was adjusted to age at entry into the exposed cohort during the risk exposure period 1961–2001. The attributable fraction (AF) for DEE-related lung cancers will be calculated by province, sex, industry and occupation.
Results Approximately 1.4 million workers were exposed to DEE during the risk exposure period. The initial estimated AFs for DEE-related lung cancers are: 4.92% for males, 0.29% for females, and 2.70% overall.
Conclusions These burden estimates are somewhat higher than recent estimates from other groups (1.3–1.8%). They account for the most recent evidence for the risk of lung cancer from occupational DEE exposure, as well as detailed historical exposure assessment and labour force trends. Sensitivity analyses are underway to determine the influential assumptions.

0311 DEVELOPMENT OF A PREDICTIVE MODEL FOR ESTIMATING GAMMA RADIATION EXPOSURES AMONG ONTARIO URANIUM MINERS

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Objectives The objective of this study is to develop and validate a predictive model for estimating gamma radiation exposure for miners working in uranium mines between 1981 and 1985.
Method The dose prediction model was developed and validated using multiple linear regression. To aid in model development, 70% random sample of workers were used in the model development (i.e., Training Sample) while the remainder 30% (i.e., Test Sample) was used to determine model performance. A stepwise approach was used to select variables into the model. Criteria for retaining the variables in the model was based on a p-value of <=0.15. Model fit was assessed using adjusted R-square. Co-linearity was determined by the magnitude of the variance inflation factor (VIF). Variables with VIF greater than 3.0 were removed from the model. In addition, SAS procedure ROBUSTREG was used to minimise the effects of outliers and