

## Poster Presentation

## Other

0279 OCCUPATIONAL EXPOSURE TO DUST COMPONENTS AND ALTERATIONS IN IMMUNE/INFLAMMATION MARKERS AMONG TACONITE WORKERS IN MINNESOTA

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**Background** Occupational exposure to airborne silica, dust containing silica (total dust), and dust without silica (mostly iron oxide) have been known to cause cardio-respiratory disease. However, with dust exposure in general, disease detection usually occurs in advanced stages of the disease process, in part due to the lack of sensitivity of current diagnostic tools that would allow for earlier detection of the disease.

**Methods** Using a multiplexed bead-based assay, we measured plasma levels of 11 immune/inflammation markers in a cross-sectional study of 134 current workers employed in various operations in mining and processing of taconite (a low grade iron ore). These are markers previously demonstrated to be related to silica exposure and/or restrictive/obstructive lung disease in other settings. We used linear regression models to examine the associations between quartiles of silica, total dust, and dust without silica with levels of markers adjusting for age, BMI, gender, and smoking.

**Results** In adjusted models, of the 11 markers selected, C-reactive protein (CRP) had the strongest association and showed a graded response across quartiles of silica. Total dust and dust without silica had little association with these markers.

**Conclusions** This study suggests that exposure to silica, total dust, and dust without silica may be associated with alterations in CRP. Total dust and dust containing iron oxide, in general, do not demonstrate associations with other markers in our study. Further research is needed to understand the potential utility of CRP as a marker linking occupational exposures and health outcomes in taconite workers.

## Poster Presentation

## Injuries

0280 FACTORS ASSOCIATED WITH THE SEVERITY OF WORK INJURIES IN THE FORMAL SECTOR IN PIRACICABA, SÃO PAULO STATE, BRAZIL

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**Introduction** Work injuries represent a relevant public health issue. Evaluation of associated factors is an important tool for occupational health surveillance. We aimed to identify factors

associated with the severity of work injuries in Piracicaba from 2004–2013.

**Methods** This is a cross-sectional study and is part of "Work Accident: from socio-technical analysis towards the social construction of changes" supported by the São Paulo Research Foundation. Work injuries data were retrieved from the Work Accident Surveillance System (SIVAT) for formal workers with at least 18 years old for the period 2004–2013. Using a multiple logistic regression model, odds ratios (OR) and their 95% confidence intervals (CI95%) were calculated considering the severity of the injury (severe or fatal versus moderate and light) and selected variables (injury type, sex, age group). All analyses were done using STATA 13.1.

**Results** In the period 2004–2013, 78 198 work injuries occurred with formal workers in Piracicaba, being 1522 (1.92%) severe or fatal accident. In severe or fatal accident, the frequency was higher among workers from manufacturing industry (750;49%), followed by services (389;26%). Increased risk for severe and fatal injuries was found for men (OR=1.16 CI95%:1.01–1.33), route accident (OR=2.0; CI95%:1.77–2.26), and an upward trend in risk with increasing age (trend test:p<0.001).

**Conclusion** Action plans to prevent workplace injuries and deaths should be designed considering that men at older ages working in manufacturing industry and in the service sectors are at increased risk. SIVAT represents an important tool to assess worker's health in the Piracicaba region and guide occupational health surveillance.

## Oral Presentation

## Disease Surveillance

0281 EVALUATING THE COMPLETENESS OF COMPULSORY WORK-RELATED DISEASES/INJURIES NOTIFICATIONS RECORDED BY THREE CITIES IN SOUTHEAST BRAZIL

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**Introduction** The Brazilian Notifiable Diseases Information System (SINAN) includes eleven work-related diseases and injuries (in nine forms), which communication is mandatory. As a way to evaluate the quality of this database, this study aimed to rate the completeness of information reported by three cities of the São Paulo State from 2007–2016.

**Methods** Descriptive study as part of 'Work Accident: from Socio-technical analysis towards the social construction of changes' supported by the Sao Paulo Research Foundation. Data from the work-related diseases and injuries forms were retrieved from SINAN for Araraquara, Campinas and Piracicaba for the period 2007-2016(16 094 files). Completeness was assessed by the percentage of filled variables by form and city, and it were categorised as: excellent (<5% unfilled), good (≥5,<10% unfilled), regular (≥10,<20% unfilled), poor (≥20,<50% unfilled), and very poor (≥50% unfilled). Analyses