an expert assessment. P2 was a multiple exposure assessment (15 scenarios) anchored by a recent measurement series (1375 personal measurements of inhalable SAS dust concentration) and used expert assessments.

**Results** Cumulative exposure estimates for P1 averaged 56.9 mg/m$^3$-years (range: 0.1 to 419); for a selected P2 scenario the mean was 31.8 mg/m$^3$-years (range: 0.4 to 480), ($p < 0.0001$). Averages varied between the 15 P2-scenarios from 12.6 to 109.6 mg/m$^3$-years. Different time trends for SAS concentrations were observed.

**Conclusions** Both approaches suffer from considerable uncertainties that need to be considered in the epidemiological morbidity study.

## 0026 PSYCHOSOCIAL STRESS OF NURSES IN ONCOLOGY: *EFFORT-REWARD IMBALANCE* SCALE

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**Objectives**

- To identify sociodemographic variables associated with psychosocial stress in oncology nurses;
- Assess the associations between ocupational variables and stress in the work environment of nurses in oncology;
- Discuss the impact of psychosocial stress in nursing work in oncology.

**Method** This is a cross-sectional epidemiological study, which will be used part of the Database of research - Nurses' Health Study, the 18 largest hospitals in the city of Rio de Janeiro / Brazil held in 2011. Permission to use the database of the National Cancer Institute was provided by the research coordinator. From a total of 234 nurses, 94% (211) have joined the research. A questionnaire was used Effort-Reward Imbalance and variable exposures (demographic, occupational and health) for the verification of statistical association. Were included in the logistic regression analyses and the variables in the bivariate analysis were associated with a lower level of significance ($p < 0.20$). Was defined as the reference category that with the lowest expected risk for the High Effort-Reward Imbalance. Presented outside the adjusted odds ratios and their respective 95% confidence in the multiple model.

**Results** Variables that showed statistical association after logistic regression analysis were age and intent into aabandonar nursing. The younger nurses is approximately three times higher chance of having the High Effort-Reward Imbalance when compared to older, and who had the intention to leave nursing had increased odds for the High Effort-Reward Imbalance.

**Conclusions** Stressors at work are health risks, so many individual and organisational efforts should be considered to deal with such a situation in oncology.

## 0027 LIFE EVENTS AND PSYCHOLOGICAL DISTRESS AMONG POLICE OFFICERS SIX YEARS POST HURRICANE KATRINA

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**Objectives** To investigate if organisational support modifies associations between life events and psychological symptomatology among police officers post Hurricane Katrina.

**Method** Complete data on depression [Centre for Epidemiological Studies Depression scale (CES-D)], PTSD [Posttraumatic Stress Disorder Checklist - Civilian version (PCL-C)] and life change events [Recent Life Changes Questionnaire] were available for 98 police officers assessed 6 years after Katrina. The Survey of Perceived Organisational Support scale was used to assess organisational and supervisory support. Linear regression and ANOVA/ANCOVA were used to compare mean levels of depression and PTSD across quartiles of total life change events score.

**Results** Mean age was 42.5 years; 27% were female. Mean levels of CES-D and PCL-C did not differ significantly between male and female officers. Total life events score was positively and significantly associated with depression and PTSD in both unadjusted and multivariable adjusted models ($p < 0.001$). Among officers who scored low on organisational support, mean levels of CES-D and PCL-C increased significantly with the increasing quartiles of total life event score ($p = 0.005$ and $p = 0.001$, respectively) in fully adjusted models. Associations were not significant among officers who scored high on organisational support.

**Conclusions** Our findings suggest that a higher number of life change events is significantly associated with increasing symptoms of depression and PTSD among officers, and these associations are modified by organisational support. Previous studies suggest that stressful life events are associated with chronic depression. Future studies are warranted to investigate independent contributions of individual life events in associations involving depression, PTSD and support.

## 0029 A STUDY OF BLOOD MULTI-ELEMENT CONCENTRATIONS IN LEAD-EXPOSED AND NON-EXPOSED WORKERS

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**Objectives** Both lead recycling and lead-containing paint are the main source of lead exposure. During the lead industrial processes, the workers exposed to many elements including non-essential elements and essential elements. The aim of this study was to compare lead (Pb) with cadmium (Cd), arsenic (As), selenium (Se), cobalt (Co), copper (Cu), zinc (Zn) in blood between lead-exposed and non-exposed workers.

**Method** There were 109 lead workers and 329 non-exposed workers enrolled. The whole blood concentration of Pb was determined by graphite atomic absorption spectrometer (AAS), while the others (Cd, As, Se, Co, Cu and Zn) were determined by inductively coupled plasma mass spectrometer (ICPMS). We analysed the associations between the seven elements and the worker health examination data. Finally, multiple linear regressions were used to analyse elements interactions.

**Results** The mean age of all workers was 40.13 years and mean BMI was 24.81. Mean concentrations (ug/L) of blood elements in Pb-exposed workers were Pb 143.5 ug/L, Cd 1.28, As 9.45, Se 251.46, Co 0.57, Cu 1044.4, and Zn 9706.92. While concentrations in non-exposed workers were Pb, 26.18 ug/L, Cd, 0.98, As, 5.28, Se, 255.40, Co, 0.42, Cu, 880.07, and Zn, 6891.52. To find the relationship of Pb and the other elements, using the interaction variables, showed that there were interactions between Cd and As, As and Co, As and Cu.



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