Results and Conclusion Analyses included 28048 subjects (12329 cases, 15719 controls). Lung cancer odds ratios ranged from 1.12 (95% CI 1.03-1.22) to 1.32 (95% CI 1.18-1.48) for groups with the lowest and highest cumulative exposure, respectively. An increasing trend was observed with duration of exposure (P<0.001), while lung cancer risk decreased with increasing time since last exposure (P=0.02). These effects were seen for all lung cancer subtypes, in current, former and never smokers, and for both sexes, and were not unduly influenced by any particular occupational group or study. Based on our study in the general population, we found strong, consistent, and robust evidence linking occupational benzene exposure with lung cancer. By rigorously adjusting for smoking and other occupational exposures, our findings provide strong support for the association between benzene exposure and lung cancer. Such a link has a large implication for occupational and environmental risk assessment and reinforces the need to further reduce benzene exposure globally.

Methodology

O-60   **FAIR DATA MANAGEMENT IN EXPOSOME RESEARCH – A CASE STUDY FROM THE EU-FUNDED EXIMIOUS PROJECT**

[1]Manosij Ghosh, [1]Katrijn Broothaerts, [1]Steven Ronsmans, [2]Ingrid Barcena Roig, [2]Jef Scheepers, [2]Mustafa Dikmen, [3]Emily Rose Ciscato, [4]Carolina Blanch, [1]Michelle Plusquin, [5]Unni C Nygaard, [6]Camilla Sandal Sejbæk, [7]Karin S Hougaard, [1]Peter HM Hoet. [1]Centre for Environment and Health, KU Leuven, Leuven, Belgium; [2]Support for Research Data Management (RDM), KU Leuven, Leuven, Belgium; [3]Accelopment AG, Zurich, Switzerland; [4]IMEC (Interuniversitair Microelectronica Centrum), Leuven, Belgium; [5]Department of Environmental Health, Norwegian Institute of Public Health, Oslo, Norway; [6]Region Hovedstaden, Copenhagen, Denmark; [7]National Research Centre for the Working Environment, Copenhagen, Denmark AND Department of Public Health, University of Copenhagen, Copenhagen, Denmark

10.1136/OEM-2023-EPICOH.203

EXIMIOUS is one of the nine H2020 exposome projects which is part of the European Human Exposome Network. As part of the EXIMIOUS project (Mapping Exposure-Induced Immune Effects: Connecting the Exposome and the Immunome) mostly constituted of researchers, we navigated the complex landscape of data protection and security, ethics and making data FAIR through our data management plan. While all projects (H2020, Horizon Europe and beyond) are obligated to conform to many of these regulations, researchers often lack the right tools and/or accurate understanding of the ethical/legal framework to independently address such challenges. More than 2 years into the project, we have successfully addressed many of these challenges. Through this elaborate exercise, we have acquired tools which allow us to make our research data FAIR, while at the same time ensuring data privacy and security (GDPR compliant). Herein we share our experience of creating and managing the data workflow through an open research communication, with the aim of helping other researchers build their data management framework in their own projects. Additionally we provide a checklist 'DMPCHECK' which the researchers can use to make their project data FAIR.

Healthcare workers

O-61   **ASSESSMENT OF VOLATILE ORGANIC COMPOUND EXPOSURES FROM CLEANING AND DISINFECTION PRODUCTS USE IN HEALTHCARE SETTINGS**

[1,2]Caroline P Groth, [2]Xiaoming Liang, [2]Feng-Chiao Su, [2]Ryan F LeBouf, [2]Paul K Henneberger, [2]M Abbas Virji. [1]Department of Epidemiology and Biostatistics, West Virginia University School of Public Health, Morgantown WV, USA; [2]NIOSH Respiratory Health Division, Morgantown WV, USA

10.1136/OEM-2023-EPICOH.204

Introduction Healthcare workers are exposed to a complex mixture of chemicals from using cleaning and disinfection products. Cleaning tasks and products are associated with elevated prevalence of asthma and respiratory symptoms, however quantitative exposure estimates are lacking which hinders prevention.

The objectives of this study were to create a quantitative task exposure matrix (TEM) for cleaning and disinfection product-use for a set of 14 volatile organic compounds (VOCs) and compare exposure estimates by job, unit, and products used.

Material and Methods Quantitative VOC exposure estimates were obtained using data collected at four U.S. hospitals. Personal time-integrated VOC samples were collected and analyzed for 14 specific VOCs. All measurements included detailed information on tasks, products used, job, unit, and other workplace characteristics.

Bayesian multiple linear regression models accounting for measurements below the limit of detection (LOD) were used to assess exposures by job, unit, product, and the interaction of product with job and unit. Geometric mean (GM) exposure estimates in parts per billion generated from the multiple regression models were used to create a TEM and compared to identify differences between jobs, units, and products. Notable differences were identified using non-overlapping 95% credible intervals.

Results Total 14-VOC exposures (TVOC14) were highest among dental occupations (GM=1680) and lowest among laboratory technicians (GM=399). Nurses (GM=1541) had higher exposures than laboratory technicians. Similarly, laboratory settings (GM= 389) had lower TVOC14 exposures than operating rooms (GM=1440). Of products studied, exposures were highest for high-level disinfectants (GM= 2000) and lowest for enzyme products (GM=322).

Conclusion A TEM was successfully created using the GM for product-job, product-unit and product, and assigned to participants in an epidemiologic study. The quantitative estimates for the 14 VOCs will be used in multi-pollutant models to explore respiratory health outcomes associated with mixed VOC exposures.