

Exploring Health and Exposures of Cleaning and Building Service Workers in NHANES

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Cleaners and building service (C&BS) workers have the potential for exposure to a number of potential xenobiotic agents, such as microbes, dusts, chemicals, and other substances. There is, however, a lack of data on the internal dose of various xenobiotics among this group. National Health and Nutrition Examination Survey (NHANES) databases contain a broad repository of exposure biomarker data, and so present a rare opportunity to examine exposures in a nationally representative sample of US workers. In the upcoming pilot analysis, existing but non-publicly available CDC data from NHANES will be explored for this biomarker repository's potential to fill information gaps with regard to potential exposure risks among C&BS workers. Initially, descriptive statistics (e.g., n's, means, medians, SDs) will be presented for each biomarker of exposure and also for health biomarkers. Next, ANOVAs and cluster analyses will be conducted to compare and contrast exposure biomarkers by work group (C&BS overall and subgroups vs non-C&BS). After selected exposure biomarkers have been identified (narrowed) based on examination of the above ANOVA and cluster analysis results, a literature review of potential health effects of the exposures those selected exposure biomarkers measure will be conducted. If indicated by the strength of evidence, one or two key health outcomes (characterized by one or more health related biomarkers) will be selected for further investigation using regression analysis(es) with adjustment for principle components (of exposure biomarker variables) and other potential key covariates and confounders. Because the risk of bias is greatly reduced in NHANES, and the panel of biomarkers is relevant, this pilot analysis has the potential to generate new hypotheses and suggest insights to inform interventions.

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