**Fine Particulate Matter Air Pollution and Mortality:**

**Cohort Studies National, Representative, Public Use Data**

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**Abstract**

Substantial and growing evidence from cohort studies indicates that long-term exposure to fine particulate matter air pollution (PM2.5) contributes to cardiopulmonary mortality. There is ongoing debate regarding the size and shape of the PM2.5-mortality exposure-response relationship. There are also growing appeals for estimates of pollution-mortality relationships that are based on large, representative cohorts that are constructed from public-use data. This presentation reports recent evaluations of PM2.5-moraltiy in large, representative, U.S. cohorts that are constructed using two primary sources of public-use data: 1. Representative national cohorts constructed using data from National Health Interview Surveys (NHIS). 2. National cohorts of cancer patients and survivors constructed using Surveillance, Epidemiology, and End Results Program (SEER) cancer registry data. In both studies, long-term exposure to PM2.5 air pollution was associated with elevated mortality risk. Elevated PM2.5-mortality risks were especially high for cardiovascular and respiratory disease mortality. Adverse PM2.5-cardiopulmonary mortality associations were also relatively large for cancer patients, especially those who were known to have received and chemotherapy or radiation treatments. Findings from these large, nationwide, public-use representative cohorts contribute further evidence that long-term PM2.5 exposure contributes to cardiovascular and respiratory disease and death. The ubiquitous and involuntary nature of exposures and the broadly observed effects across sub-populations underscore the public-health importance of breathing clean air.