Mortality of Construction Workers at DOE Nuclear Sites: A Follow-Up Study

Mortality of Older Construction and Craft Workers Employed at Department of Energy Nuclear Sites: Follow-up Through 2016

Knut Ringen, John Dement, Stella Hines, Patricia Quinn, Anna Chen, Scott Haas. American Journal of Industrial Medicine. 2019.

Overview

Construction workers employed at nuclear weapons facilities have potential exposure to multiple hazards during facility construction, maintenance, and cleanup, including radiation, asbestos, silica, solvents, metals, and welding/cutting gases and fumes. In 1993, Congress called for the Department of Energy to determine whether these workers were at significant risk for work-related illnesses and, if so, to provide them with medical surveillance to permit earlier disease detection. Since 1996 surveillance has been conducted through the Building Trades National Medical Screening Program (BTMed), a consortium comprised of CPWR, Duke University, and the UMD School of Medicine, with Zenith serving as the administrative coordinator. Previous studies of these workers have examined respiratory diseases, hearing loss, beryllium sensitivity, chronic obstructive pulmonary disease, longitudinal lung function decline, and mortality. This study included 5,203 deaths among 24,086 BTMed participants from 28 sites and a range of trades. Mortality patterns were compared to the U.S. population.

Key Findings

- Construction workers employed at DOE sites have a significantly increased risk for occupational illnesses.
- Mortality was elevated for all causes; all cancers, including cancers of the trachea, bronchus, and lung and lymphatic and hematopoietic system; mesothelioma; chronic obstructive pulmonary disease; asbestosis; transportation injuries; and other injuries, particularly those caused by accidental poisoning, suggesting a possible effect of the national opioid epidemic.
- Apart from the classification of accidental poisoning, mortality patterns were very similar to those reported in the past in this population.
- Risks are associated with employment during all time periods covered, including possibly after 1990.
- The cancer risks closely match the cancers identified for DOE compensation from radiation exposures. The high risk of lung cancer supports the value of early lung cancer detection.
- Continued medical surveillance is important.

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