

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

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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.

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See the abstract:

<http://bit.ly/2kNd54c>

Learn more about BTMed: <https://www.btmed.org/>

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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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RESEARCH ARTICLE

Mortality of older construction and craft workers employed at department of energy nuclear sites: Follow-up through 2016

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Abstract

Background: To determine if construction and trades workers employed at U.S. Department of Energy (DOE) nuclear sites facilities are at significant risk for diseases associated with occupational exposures, we compared the mortality experience of participants in the Building Trades National Medical Screening Program (BTMed) to that of the US population.

Methods: The cohort includes 24,086 BTMed participants enrolled between 1998 and 2016 and 5203 deaths. Cause-specific standardized mortality ratios were calculated based on US death rates.

Results: Mortality was elevated for all causes, all cancers, 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 opioid epidemic.

Conclusions: Apart from other injuries, mortality patterns were very similar to those reported in the past in this population. Construction workers employed at DOE sites have a significantly increased risk for occupational illnesses. 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.

KEYWORDS

construction, department of energy, mortality, occupational diseases, surveillance

1 | BACKGROUND

In 1993, the US Congress added Section 3162 to the Defense Authorization Act, calling for the Department of Energy (DOE) to determine whether workers within the nuclear weapons facilities were at significant risk for work-related illnesses and if so, to provide them with medical surveillance to permit earlier disease detection. In 1996 and 1997, the DOE supported the establishment of independent surveillance programs for construction workers at the Hanford

Nuclear Reservation in Richland, Washington, the Oak Ridge Reservation in Oak Ridge, Tennessee, and the Savannah River Site (SRS) in Aiken, South Carolina, and in 1999 the Amchitka nuclear test site in Alaska. The surveillance program has expanded to 35 DOE sites and consolidated to form the Building Trades National Medical Screening Program (BTMed).

BTMed is conducted by a consortium made up of The Center for Construction Research and Training (CPWR), Duke University and the University of Maryland School of Medicine, with Zenith American