

Epidemiologic Notes and Reports

Silicosis Among Pottery Workers – New Jersey

In March 1985, two cases of silicosis in former employees of a sanitary-ware pottery (i.e., a manufacturer of china plumbing fixtures) were identified from death certificates by the New Jersey State Department of Health (NJSDH). A site visit to the pottery in January 1987 revealed potential overexposure of employees to crystalline silica throughout the plant. This report summarizes the investigation of employee exposure to silica.

During June 1988, CDC's National Institute for Occupational Safety and Health (NIOSH) and the NJSDH conducted a joint study at this facility to assess both crystalline silica exposures and the adequacy of control measures (1). Forty-seven percent of personal breathing-zone samples exceeded the Occupational Safety and Health Administration's (OSHA) permissible exposure limit (PEL) of 100 $\mu\text{g}/\text{m}^3$ for crystalline silica; 53% exceeded the NIOSH recommended exposure limit (REL) of 50 $\mu\text{g}/\text{m}^3$. Based on these findings, specific engineering controls and work practices were recommended to reduce exposures and prevent additional cases of silicosis.

During October 1988, NJSDH conducted an on-site medical screening of all 120 pottery employees and obtained employee medical and work histories, chest radiographs, and spirometry. The radiographs were evaluated by three NIOSH-certified "B" readers* (2). Radiographs of five (4%) current employees who were not previously known to have pneumoconiosis had readings of 1/0 or greater, generally regarded as positive for pneumoconiosis (3). Based on these findings, the company agreed to institute a surveillance program to continue medical monitoring of all plant employees.

During October 1988, a follow-up environmental survey by NJSDH to assess the extent of compliance with the recommended controls and work practices determined that, although the company had implemented many of these recommendations, some problems persisted. For example, respirator use remained sporadic despite documentation of substantial exposures to crystalline silica dust throughout the plant. NJSDH recommended that a comprehensive respirator program be vigorously enforced until these exposure levels are reduced below the NIOSH REL through appropriate engineering controls and work practices.

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Editorial Note: Since 1984, the NJSDH has conducted surveillance of silicosis under several NIOSH Capacity Building Programs (4). This surveillance system uses both morbidity (i.e., hospital discharge) and mortality (i.e., death certificate) data to identify cases of silicosis. In addition, NJSDH participates in the Sentinel Event Notification System for Occupational Risks (SENSOR) program for surveillance of occupational asthma and silicosis, which includes physician reporting of cases of silicosis and combines surveillance with retrospective investigation (5). In conjunction with the
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*A physician certified by NIOSH to interpret chest radiographs to detect pneumoconiosis using the 1980 International Labour Office guidelines.

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SENSOR program, NIOSH has published surveillance guidelines for state health departments to use in promoting physicians' recognition and reporting of silicosis (6).

The sanitary-ware pottery industry is classified under standard industrial classification (SIC) 3261—vitreous china plumbing fixtures and china and earthenware fittings and bathroom accessories. In the United States, 34 manufacturing facilities have a primary SIC of 3261 (7); located in 14 states, half are concentrated in three states—California, Ohio, and Texas.[†] Of an estimated 6400 persons employed in this industry, approximately 4300 have occupational exposure to crystalline silica (NIOSH, unpublished data, 1991). In New Jersey, the predominant industries in which persons with silicosis have worked include sand and gravel mines, foundries, and ceramics (both china and sanitary ware).

Persons with silicosis are at substantially increased risk for other pulmonary diseases, particularly tuberculosis, bronchitis, and emphysema (8). In the United States, each year approximately 250 workers are reported with (9) and 135 die from silicosis (10).

The investigation described in this report underscores the potential health hazards associated with the use of crystalline silica in manufacturing sanitary ware. Assessments of similar facilities have detected the same problems and conditions (i.e., use of raw materials high in crystalline silica content, poor or inadequate ventilation to control dust sources, poor housekeeping practices, and lack of effective respiratory-protection programs for workers). Full implementation of recommended control measures should reduce the risk for silicosis among workers in this industry.

References

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[†]This listing appears to be incomplete because it does not include the pottery in this report.

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Current Trends**Trends in Prostate Cancer — United States, 1980–1988**

Among men, carcinoma of the prostate is the second most common cancer and the second most common cause of death from cancer in the United States (1). During 1992, an estimated 132,000 men will be diagnosed with and 34,000 will die from prostate cancer (2). This report describes trends in prostate cancer incidence and mortality by patients' age, race, and state of residence from 1980 through 1988.

Incident cases* by age and race for 1980–1988 were determined using data from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program. The age, race, and state of residence of persons who died during 1980–1988 were determined using the underlying cause of death† from the multiple cause-of-death data files compiled by CDC's National Center for Health Statistics. The denominators for both rates were derived from intercensal population estimates. Rates were standardized to the 1970 age distribution of the U.S. male population. To obtain statistically stable rates, age- and race-specific incidence and death rates were computed for a 5-year period by using annual data aggregated during the most recent 5-year period (1984–1988). Race-specific rates are not reported for races other than white and black because sufficient denominators were not available.

From 1980 through 1988, age-adjusted prostate cancer incidence rates increased steadily for both black and white men (8% and 30%, respectively) (Figure 1). During this period, although the incidence rate was higher for black men than for white men, the rate ratio decreased from 1.6 in 1980 to 1.3 in 1988. For men of both races, incidence rates varied directly with age (Figure 2); the highest age-specific incidence rates occurred for white men aged ≥ 85 years and black men aged 80–84 years. The difference in annual age-specific incidence rates by race was greatest for the youngest age group (i.e., 50–54 years); for black men, the rate was 2.1 times greater than for white men (63.9 per 100,000 population versus 30.2 per 100,000).

**International Classification of Diseases for Oncology*, code 185.9.

†*International Classification of Diseases, Ninth Revision*, code 185.