

WORK RELATED LUNG DISEASE SURVEILLANCE REPORT



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
National Institute for Occupational Safety and Health

CDC
CENTERS FOR DISEASE CONTROL

WORK-RELATED LUNG DISEASE SURVEILLANCE REPORT

Division of Respiratory Disease Studies

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Preface

The Work-Related Lung Disease Surveillance Report was compiled by the Division of Respiratory Disease Studies, National Institute for Occupational Safety and Health. This report represents a summary of surveillance data for various occupational respiratory diseases. Some data originated from programs administered by the Division, e.g., information provided by the Coal Workers' X-ray Surveillance Program and the National Coal Workers' Autopsy Study. Other data were obtained from publications, reports, and data tapes provided by the National Center for Health Statistics, the Bureau of Labor Statistics, the Mine Safety and Health Administration, the Occupational Safety and Health Administration, the Health Care Financing Administration, and the Social Security Administration.

This report has two major sections: Figures and Tables. Section I contains 21 figures and Section II contains 59 tables. Figures display data from tables containing information best presented in graphical form. A corresponding table is provided for each graph to enable determination of actual numbers. A more detailed listing of the individual tables by disease category can be found at the first part of the Tables section. The Appendix briefly describes each of the major sources of data used in the report and, in some cases, directs the reader to additional documentation.

This first edition of the Work-Related Lung Disease Surveillance Report is a response to numerous requests for information about the extent of lung disease caused by exposures in the workplace. Surveillance information, including that contained in this report, derives from various sources which differ in completeness of reporting, case definitions, and populations of interest. Nevertheless, surveillance information can be of use in establishing priorities for investigation and intervention, as

well as in tracking progress toward the elimination of preventable disease.

Comments and suggestions from users of the report, as well as information about the uses to which it is being put, would be appreciated and will be used to increase the utility of future editions. Comments and suggestions may be sent to:

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Acknowledgements

This report was prepared by the Division of Respiratory Disease Studies, National Institute for Occupational Safety and Health, under the supervision of Gregory R. Wagner, Director. Additional supervision was provided by Robert M. Castellan, Chief, Epidemiological Investigations Branch, Division of Respiratory Disease Studies.

The detailed tables were prepared by Thomas B. Richards, Rochelle B. Althouse, Alwin L. Dieffenbach, and Kathleen B. Kinsley, with final editing by Barbara A. Bonnett and Karl Musgrave. Graphics were provided by Karl Musgrave. Text portions of the report were contributed by Rochelle B. Althouse, Karl Musgrave and Lori J. Houghton.

Thanks are also due to individuals from the Division of Surveillance, Hazard Evaluations, and Field Studies for assistance in the preparation of numerous tables. Final editing and review was provided by the Surveillance Interest Group, Division of Respiratory Disease Studies.

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Asbestosis

Asbestosis includes ICD-8 code 515.2 (asbestosis) and ICD-9 code 501 (asbestosis).

See Appendix for more information about multiple cause of death data.

See Table 6 for data.

Figure 1. Multiple cause of death listings with any mention of asbestosis in United States residents age 15 and over, from 1968 to 1987

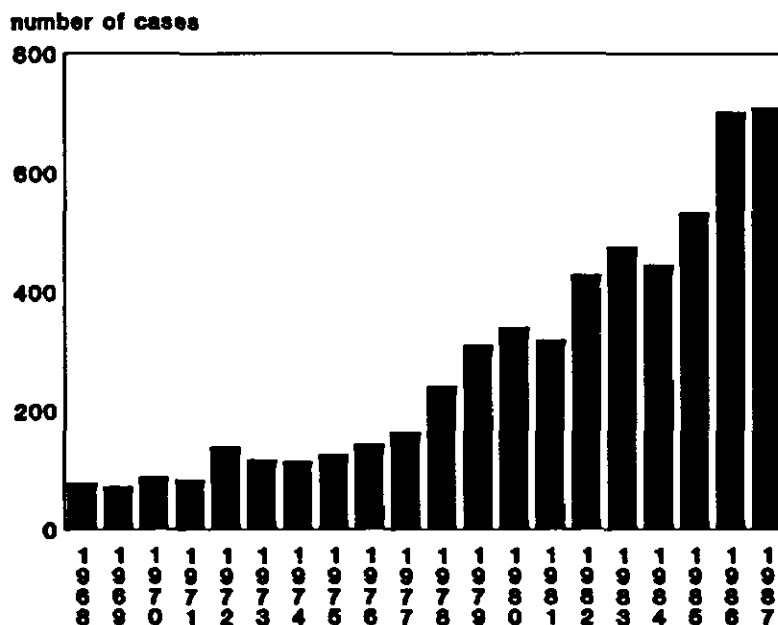


Figure 2. Multiple cause of death listings with any mention of malignant neoplasm of pleura in United States residents age 15 and over, from 1968 to 1987

Malignant neoplasm of pleura includes ICD-8 code 163.0 (malignant neoplasm of parietal pleura) and ICD-9 codes 163.0 (malignant neoplasm of parietal pleural), 163.1 (malignant neoplasm of visceral pleura), and 163.9 (malignant neoplasm of pleura, unspecified).

See Appendix for more information about multiple cause of death data.

See Table 7 for data.

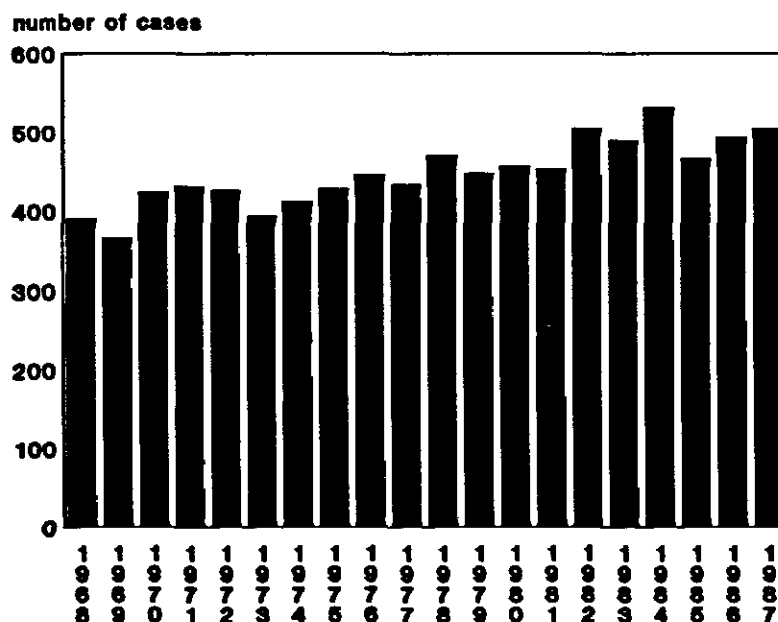
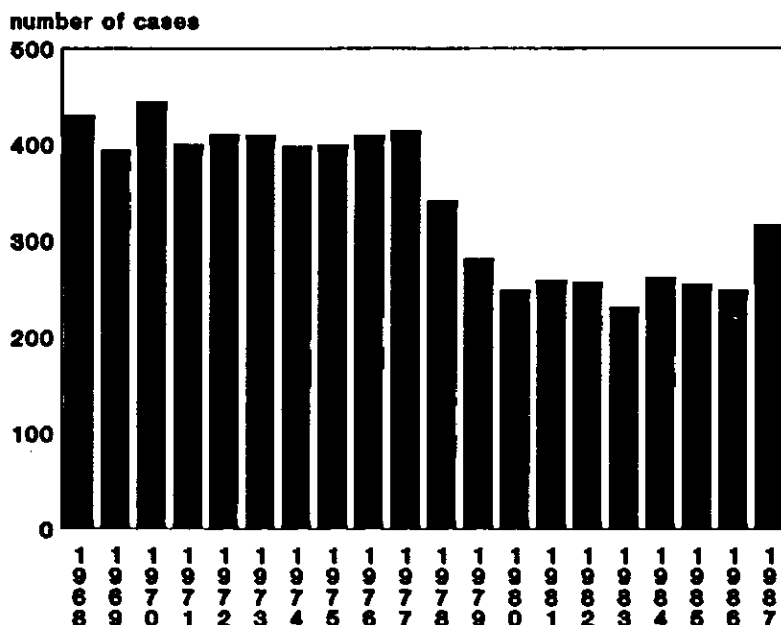


Figure 3. Multiple cause of death listings with any mention of malignant neoplasm of peritoneum in United States residents age 15 and over, from 1968 to 1987

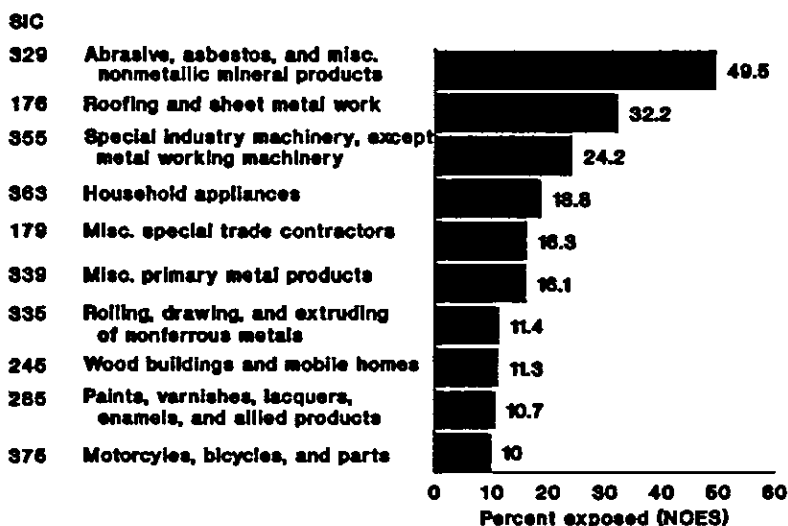


Malignant neoplasm of peritoneum includes ICD-8 code 158.9 (malignant neoplasm of peritoneum, excluding malignant neoplasm of retroperitoneal tissue) and ICD-9 codes 158.8 (malignant neoplasm, specified parts of peritoneum) and 158.9 (malignant neoplasm of peritoneum, unspecified).

See Appendix for more information about multiple cause of death data.

See Table 8 for data.

Figure 4. Non-mining industries with the highest proportions of workers potentially exposed to asbestos dust, 1986



Estimates of the proportions of workers potentially exposed to asbestos are based on data from the National Occupational Exposure Survey (NOES).

See Appendix for more information about NOES.

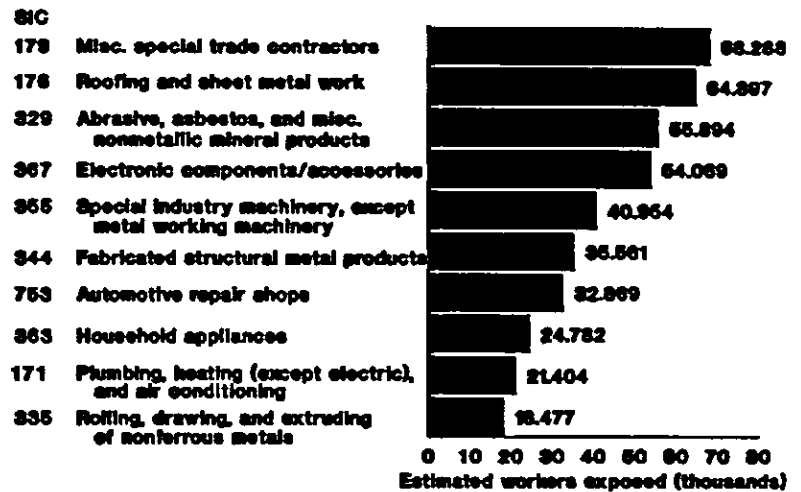
See Table 2 for data.

Estimates of the numbers of workers potentially exposed to asbestos are based on data from the 1986 County Business Patterns and the National Occupational Exposure Survey (NOES). SIC 13 (Oil and gas extraction) which was not calculated from NOES information, would have an estimated 40,824 workers exposed to asbestos based on an assumption that 10% of the oil and gas extraction work force is exposed to asbestosis.

See Appendix for more information about NOES and County Business Patterns.

See Table 3 for data.

Figure 5. Non-mining industries with the largest numbers of workers potentially exposed to asbestos dust, 1986



Coal Workers' Pneumoconiosis

Coal workers' pneumoconiosis includes ICD-8 code 515.1 (anthracosilicosis) and ICD-9 code 500 (coal workers' pneumoconiosis).

See Appendix for more information about multiple cause of death data.

See Table 19 for data.

Figure 6. Multiple cause of death listings with any mention of coal workers' pneumoconiosis in United States residents age 15 and over, from 1968 to 1987

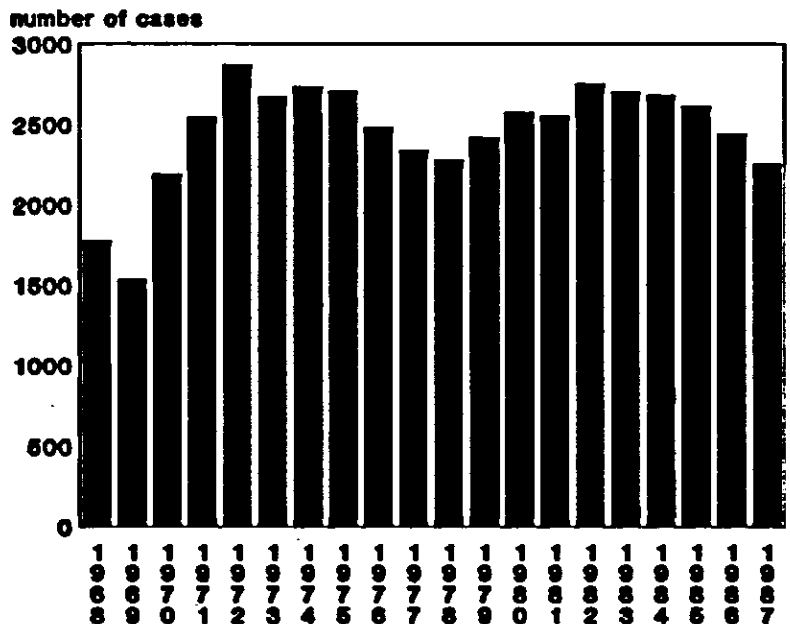
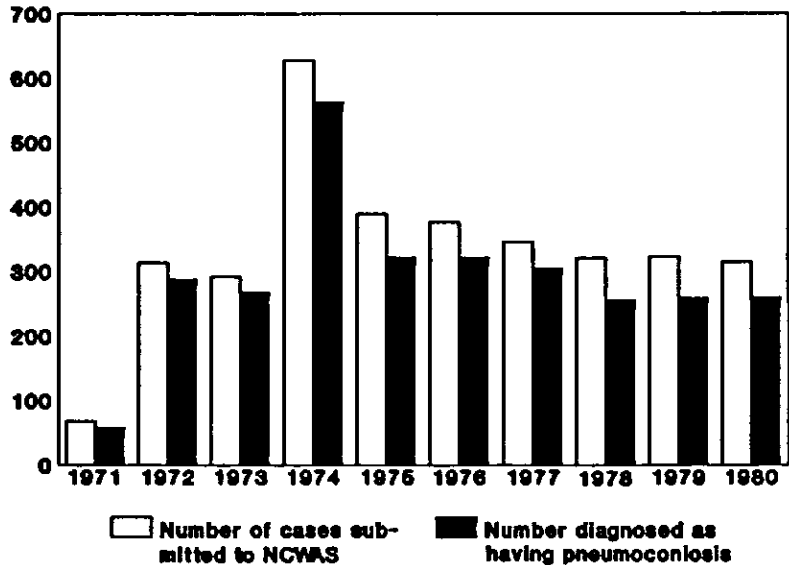


Figure 7. Number of cases submitted to the National Coal Workers' Autopsy Study (NCWAS), and the number diagnosed as having pneumoconiosis, from 1971 to 1980.

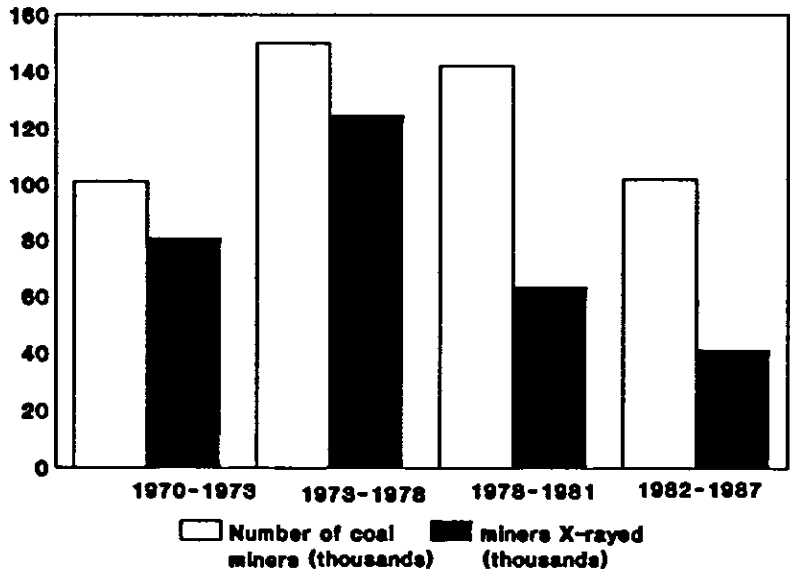


Pneumoconiosis includes ICD-8 code 515 (pneumoconiosis due to silica and silicates), which includes the following subcategories: silicosis (515.0); anthracosilicosis (515.1); asbestosis (515.2); and other, including pneumoconiosis, unspecified (515.9)

See Appendix for more information on the National Coal Workers' Autopsy Study.

See Table 18 for data.

Figure 8. Estimated number of underground coal miners and number of miners examined in the Coal Workers' X-ray Surveillance Program (CWXSP), from 1970 to 1987.



Estimates of the number of underground coal miners are based on MSHA informational reports.

See Appendix for more information about the Coal Workers' X-ray Surveillance Program and MSHA informational reports on coal mining.

See Table 21 for data.

Figure 9. Number of discharges with any mention of coal workers' pneumoconiosis from short-stay hospitals, from 1970 to 1987

Number of discharges includes multiple discharges for individual patients.

See Appendix for more information about the National Center for Health Statistics National Hospital Discharge Survey.

See Table 14 for data.

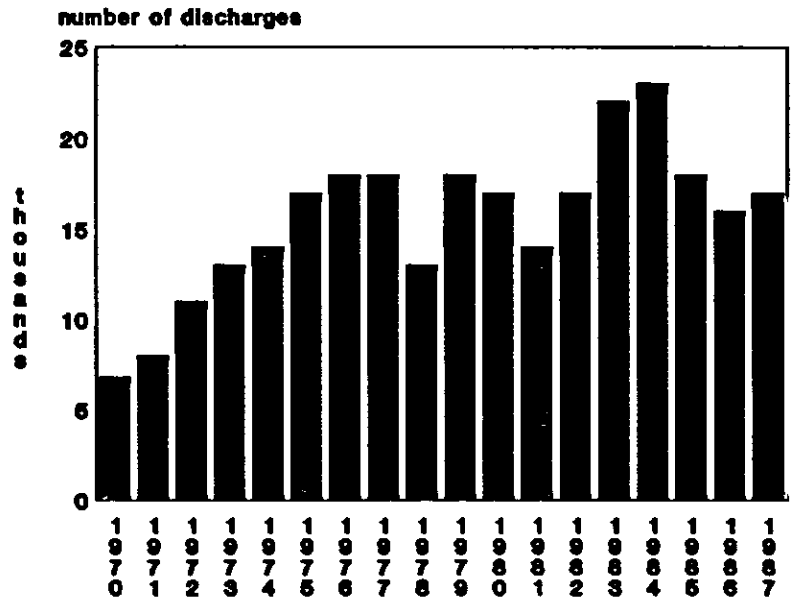
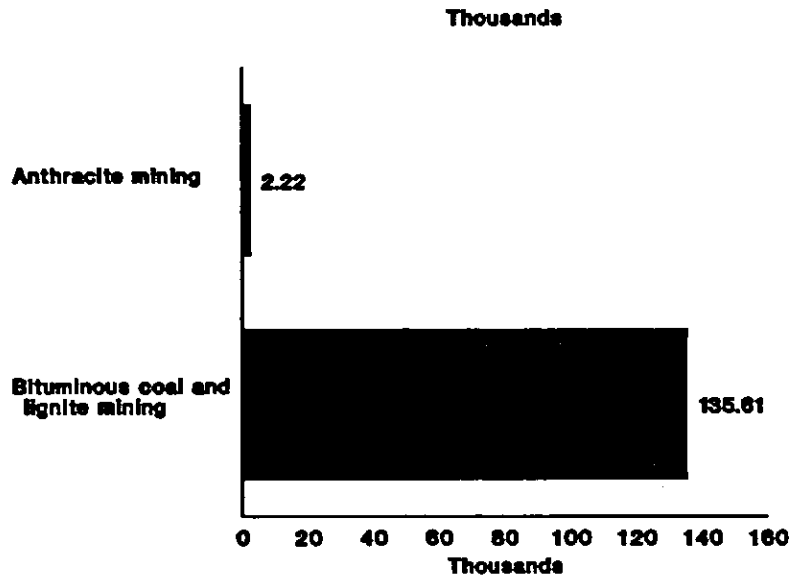


Figure 10. Estimated numbers of workers potentially exposed to coal mine dust in anthracite and bituminous coal mining, 1989.

Estimates are based on information for 1989 assuming that 100% of non-office workers in these industries have potential exposure to coal mine dust.

See Appendix for more information on the MSHA informational reports on coal mining.

See Table 12 for data.



Silicosis

Silicosis includes ICD-8 codes 515.0 (silicosis) and 010 (silicotuberculosis), and ICD-9 code 502 (pneumoconiosis due to other silica or silicates).

See Appendix for more information about multiple cause of death data.

See Table 27 for data.

Figure 11. Multiple cause of death listings with any mention of silicosis in United States residents age 15 and over, from 1968 to 1987

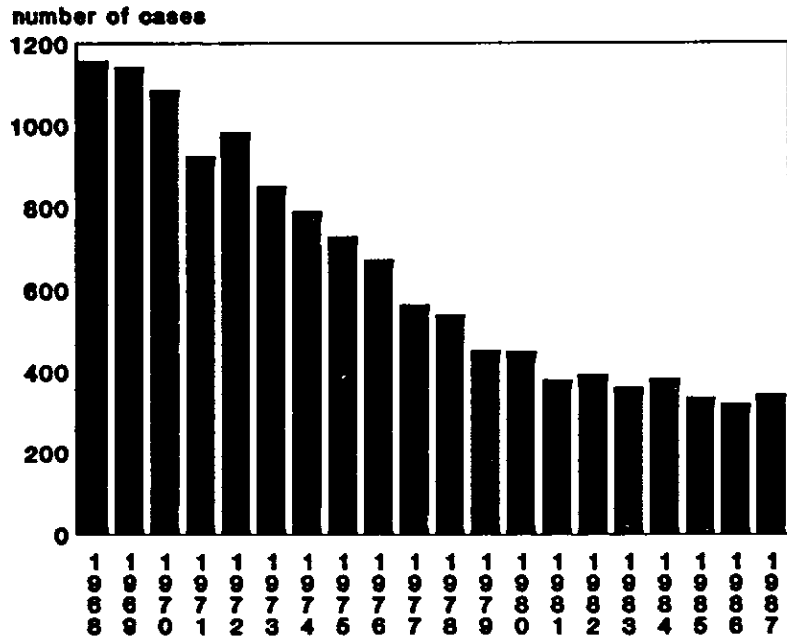


Figure 12. Non-mining industries with the highest proportions of workers potentially exposed to respirable crystalline silica dust, 1986

Estimates of the proportions of workers potentially exposed to the hazards of flint, quartz, sand, or silica powder are based on data from the National Occupational Exposure Survey (NOES).

See Appendix for more information about NOES.

See Table 22 for data.

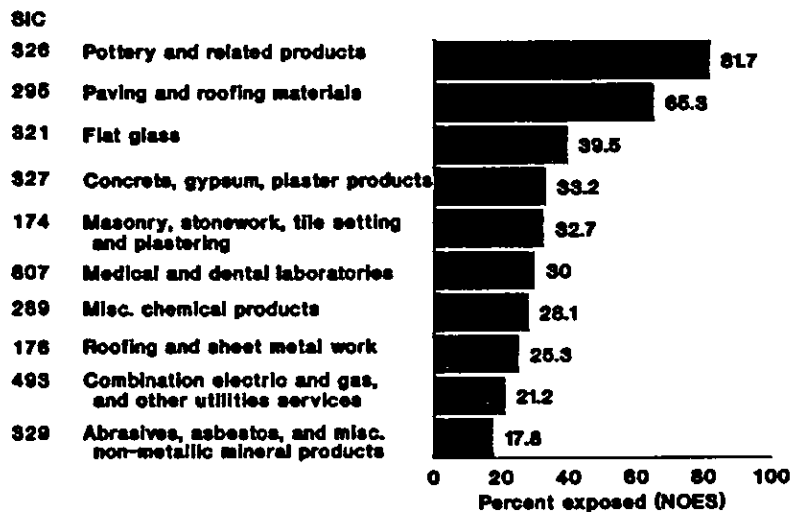
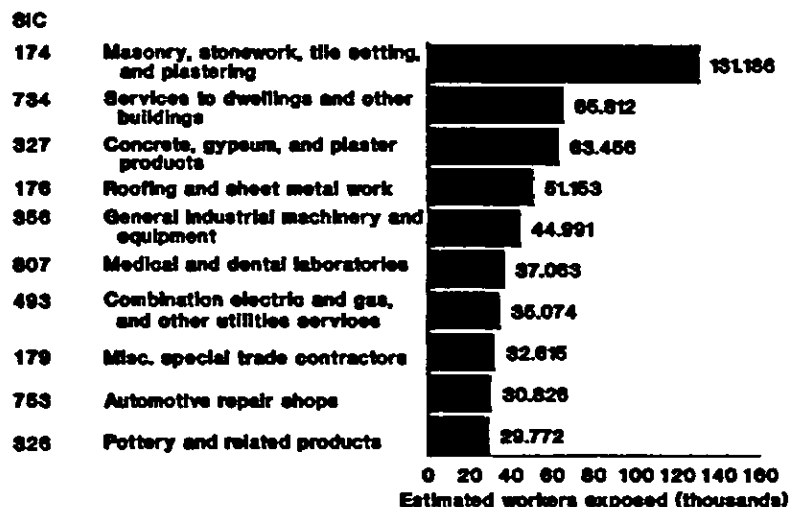


Figure 13. Non-mining industries with the largest numbers of workers potentially exposed to respirable crystalline silica dust, 1986

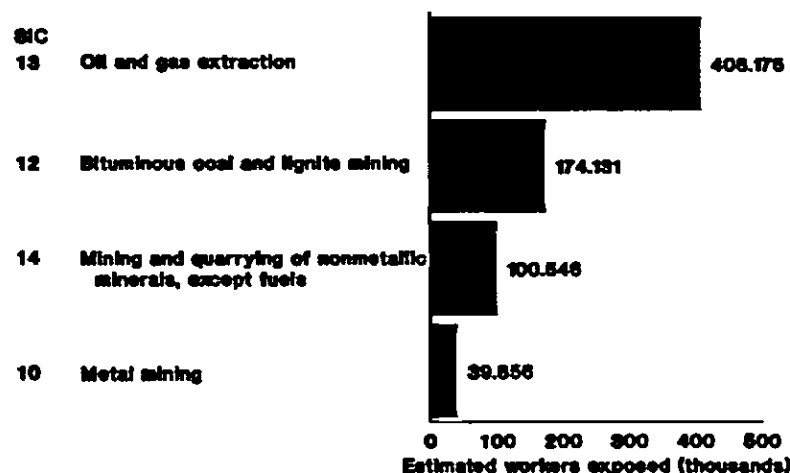


Estimates of the numbers of workers potentially exposed to the hazards of flint, quartz, sand, or silica powder are based on data from the 1986 County Business Patterns and the National Occupational Exposure Survey (NOES).

See Appendix for more information about NOES and County Business Patterns.

See Table 23 for data.

Figure 14. Mining industries with the largest numbers of workers potentially exposed to respirable crystalline silica dust, 1986



Estimates are based on data from the 1986 County Business Patterns assuming that 100% of workers in these industries have a potential exposure to respirable crystalline silica dust.

See Appendix for more information on the County Business Patterns.

See Table 23 Note for data.

Exposure to Cotton Dust

Estimates of the proportions of workers potentially exposed to cotton dust are based on data from the National Occupational Survey (NOES).

See Appendix for more information about NOES.

See Table 29 for data.

Figure 15. Industries with the highest proportions of workers potentially exposed to cotton dust, 1986

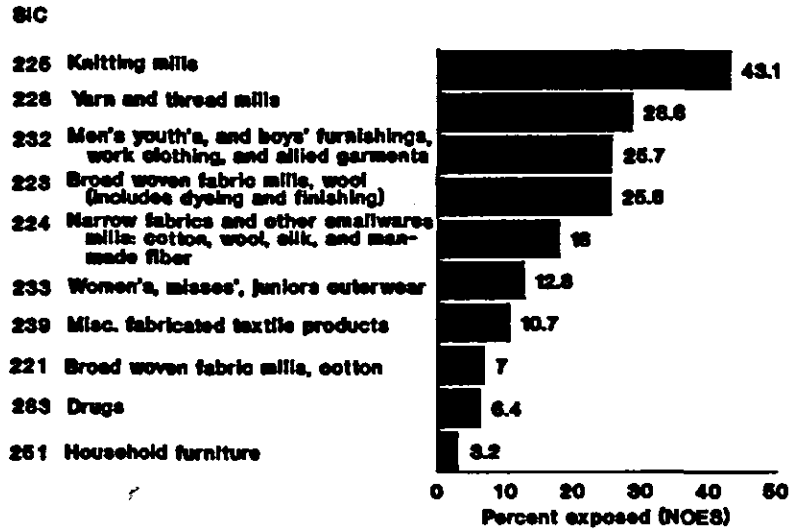
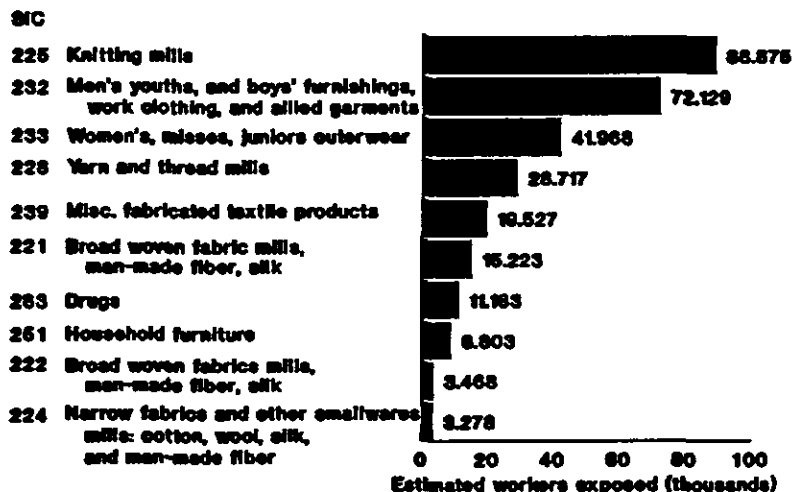


Figure 16. Industries with the largest numbers of workers potentially exposed to cotton dust, 1986



Estimates of the numbers of workers potentially exposed to cotton dust are based on data from the 1986 County Business Patterns and National Occupational Exposure Survey (NOES).

See Appendix for more information about NOES and County Business Patterns.

See Table 30 for data.

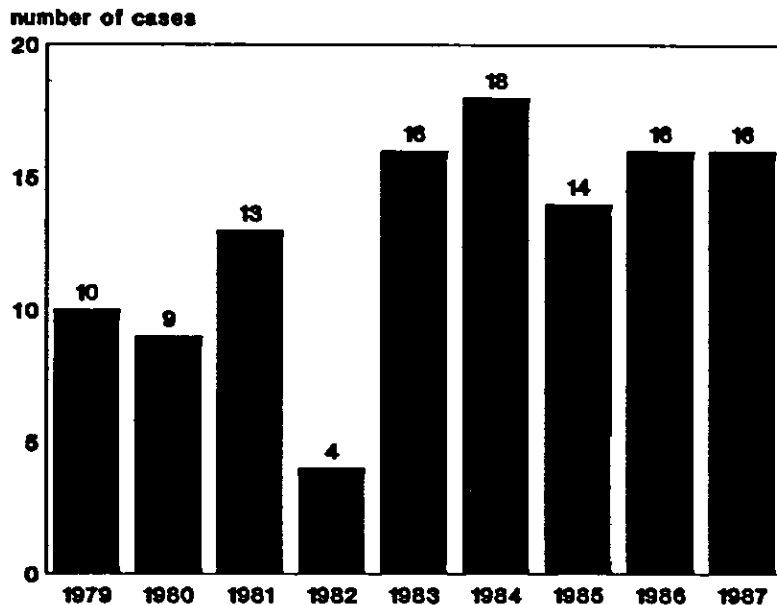
Pneumonopathy due to Inhalation of Other Dust

Pneumonopathy due to the inhalation of other dust includes ICD-9 code 504. Examples of conditions listed under this code include byssinosis and flax dressers' disease.

See Appendix for more information about multiple cause of death data.

See Table 33 for data.

Figure 17. Multiple cause of death listings with any mention of pneumonopathy due to inhalation of other dust (ICD-9 code 504) in United States residents age 15 and over, from 1979 to 1987



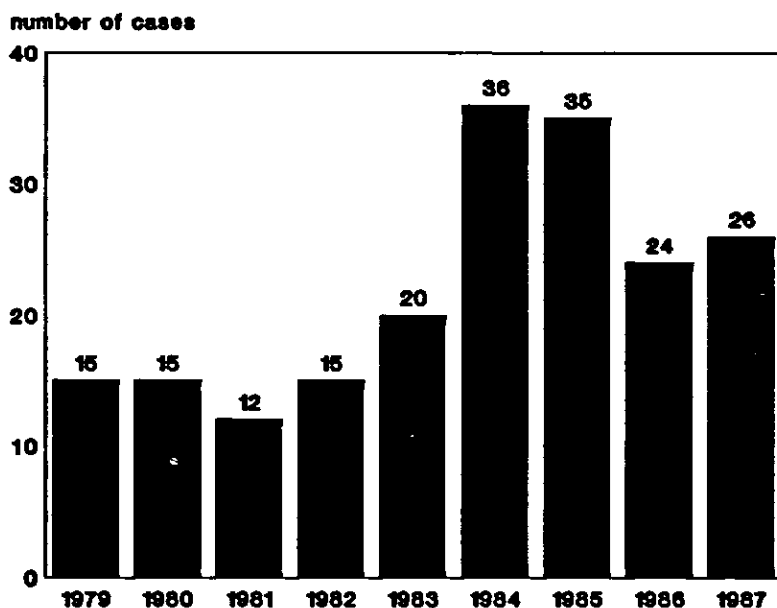
Hypersensitivity Pneumonitis

Hypersensitivity pneumonitis includes ICD-9 code 495 (extrinsic allergic alveolitis), which includes subcategories 495.0 through 495.9 (e.g., farmer's lung, bag-assosis, bird-fanciers' lung, suberosis, malt workers' lung, mushroom workers' lung, maple bark-strippers lung and "ventilation" pneumonitis).

See Appendix for more information about multiple cause of death data.

See Table 37 for data.

Figure 18. Multiple cause of death listings with any mention of hypersensitivity pneumonitis in United States residents age 15 and over, from 1979 to 1987



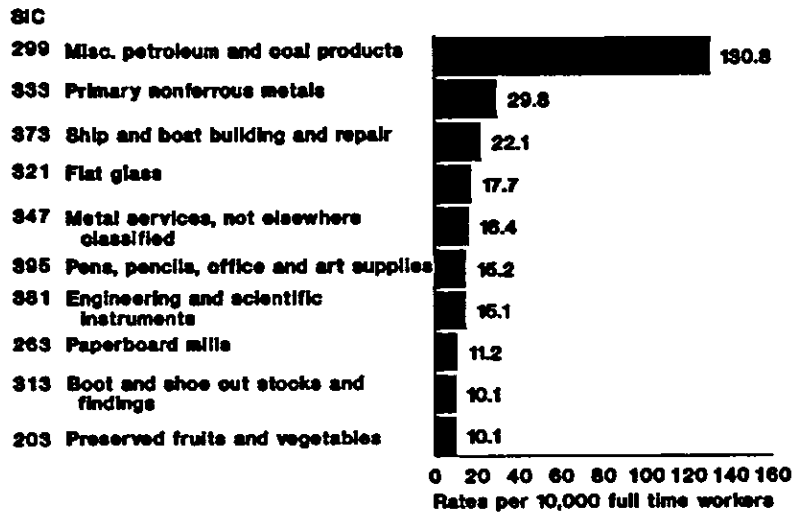
Toxic Agents

Industry tabulations are based on agriculture, mining, construction, and manufacturing industries.

See Appendix for more information on Bureau of Labor Statistics Annual Report of Occupational Injuries and Illnesses.

See Table 42 for data.

Figure 19. Industries with the highest incidence rates of reported occupational respiratory conditions due to toxic agents, private sector, 1988



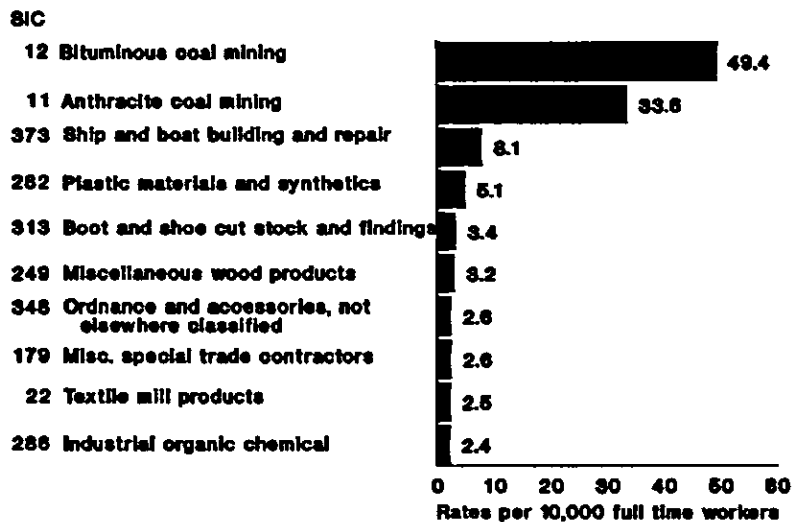
Dust Diseases of the Lungs

Industry tabulations are based on agriculture, mining, construction, and manufacturing industries.

See Appendix for more information about Bureau of Labor Statistics annual report of occupational injuries and illnesses.

See Table 52 for data.

Figure 20. Industries with the highest incidence rates of reported occupational dust diseases of the lungs, private sector, 1988



Compensation

The eight states providing indemnity compensation information were: Arkansas, Delaware, Iowa, New York, North Carolina, Oregon, Washington, and Wisconsin.

See Appendix for more information about Work Injuries and Illnesses Supplementary Data System.

See Table 58 for data.

Figure 21. Indemnity compensation for selected occupational respiratory conditions reported by eight state workers' compensation agencies, 1986

