FILE NAME: New York State & NY Times (NY)

DATE: 1970 Dec 16

DOC#: NY027

DOCUMENT DESCRIPTION: NYT Article - New International Code Aids X-Ray Study in Black Lung Disease

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New York Times (1857-Current file); Dec 16, 1970; ProQuest Historical Newspapers The New York Times (1851 - 2002)
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New International Code Aids X-Ray Study in Black Lung Disease

By LAWRENCE K. ALTMAN
Special to The New York Times

DENVER, Dec. 14—A group of 118 practicing physicians have just completed a two-day course here that taught them how to use a new international code to classify the abnormal white spots that appear on chest X-rays of coal workers with black lung disease.

Doctors said that the course and the code were designed to carry out provisions of a Federal law concerning the health of the 100,000 coal workers in 4,500 mines in 23 states. The Public Health Service, the American College of Radiology and the American College of Chest Physicians sponsored the sessions.

What the doctors learned was how to classify the extent of damage that coal workers can get from inhaling coal dust so ill victims can qualify for Federal compensation. Under the Federal Coal Mine Health and Safety Act that President Nixon signed a year ago, each coal worker can have a chest X-ray taken every two or three years at the expense of the mine operator.

If radiologists find evidence of sufficient black lung damage in the coal worker's chest X-ray, the patient has the option of transferring — at no loss in salary — to a new job in a less dusty area of the mine. if the X-ray changes are more advanced, the coal worker can apply for Social Security disability.

"The aim of the law," Dr. William S. Lainhart of the Public Health Service said in an interview, "is to arrest further progression of the black lung disease." Dr. Lainhart is an epidemiologist with the Bureau of Occupational Safety and Health in Cincinnati.

Depending on the severity of the disease, coal workers can suffer from chest pain, cough, shortness of breath and easy fatigue on exercise. Their skin can turn blue or cyanotic. Ultimately, such lung damage can kill from a type of heart failure called cor pulmonale.

Doctors have long known that inhalation of various dusts such as coal, quartz, asbestos, talc and gaphite can lead to a group of lung diseases that are categorized as pneumoconioses.

When black coal dust is inhaled by miners or men working on barges, for example, it can produce lung damage that appears opaque, or white, on chest X-rays. Lung damage, often mimicking pneumoconioses, can result from diseases produced, for example, by toxic metals such as cadmium and berylium.

By noting which area of the lung is damaged, radiologists can often distinguish between the various pheumoconioses. Because these diseases can produce similar changes as seen on X-rays, radiologists can have difficulty in making a more precise diagnosis than pneumoconioses.

Problem of Diagnosis

Sometimes, for example, the lung covering called the pleura becomes abnormally thickened from many of these diseases. In such cases, information about the patient's occupation and exposure to dust and other environmental agents is helpful in establishing the specific diagnosis.

Because of these technical difficulties, the service studied ways to standardize such chest X-ray abnormalities, Dr. Lainhart said, and decided on a classification that was made by the International Union Against Cancer (pneumoconiosis is not a cancer). The code was published last July in a medical journal called Chest.

The classification is a shorthand system for recording and standardizing the various X-ray changes resulting from dust inhalation.

To teach the system, the service and the two medical organizations began last June to give the course in six cities to physicians caring for coal workers. The physicians here are among the 900 doctors who are expected to have volunteered for the course by the time the last session is given next month in Pittsburgh.

Earlier, physicians took the course in Washington, Charleston, Knoxville and St. Louis.

Participating doctors sit at a table facing a box illuminating the chest X-rays of patients with black lung or other diseases that mimic it. Course directors use a new technique, which was developed by Eastman Kodak Company of Rochester, to make 100 high quality copies of the teaching films, thus facilitating the course instruction.

The coded data that physicians submit on coal workers and the X-rays will be sent to the Appalachian Laboratories for Occupation Respiratory Disease Center at Morgantown, W. Va. Epidemiologists there expect to use the data to understand, diagnose and control black lung and other dust inhalation diseases.