Medical Xpress

Study looks at ways to control dust coal miners breathe

June 28 2018, by Dylan Lovan

A new report examines the way coal dust inhaled by miners is regulated as health and safety officials grapple with an increase in cases of severe black lung disease in Appalachia.

The National Academy of Sciences report released Thursday explores dust sampling approaches and limiting miners' exposure to dust. Controlling dust exposure is critical to preventing black lung disease, or pneumoconiosis. The disease has killed about 77,000 coal miners since 1968.

The 148-page report suggests that monitoring standards that go beyond current federal regulations may be necessary to protect more coal miners from the disease. The U.S. Mine Safety and Health Administration reduced the allowable dust levels in mines in a 2014 rules change. Miners also wear personal dust monitors underground.

Amy Louviere, a spokeswoman for the mine safety agency, said officials are reviewing the study before publicly commenting on its findings.

Black lung deaths have declined since the 1970s, but since 2000 there has been an increase in the number of rapidly progressing cases in certain regions, including central Appalachia. In those cases, the signs of serious black lung disease appear rapidly in a period of five years or less. The cases were found in a "hot spot" of Kentucky, West Virginia and Virginia, and the miners in those instances were younger than typical patients and more likely to be employed by smaller mines, according to

the report.

The report suggests one of the culprits of the spike in black lung cases could be crystalline silica, which is found in rock dust. Miners are working with thinner coal seams, meaning they are cutting into more rock that contains the silica, which is more damaging to lungs than coal dust.

"Increased silica exposure appears to explain at least some of the observed cases of rapidly progressive" black lung disease, the report said. It recommended the development of a silica monitor that detects those levels in the air.

The report also said stronger machinery and faster coal-loading is kicking up more dust.

"Higher productivity certainly increases the total dust load generated," it said.

The report calls for a comprehensive study with industry, unions and the government to identify key challenges in implementing better dust monitoring techniques.

Congress directed the Academy of Sciences to conduct the study in 2016.

Citation: Study looks at ways to control dust coal miners breathe (2018, June 28) retrieved 27 April 2024 from https://medicalxpress.com/news/2018-06-ways-coal-miners.html

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