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Digging Deeper for Health and Safety: Examining New Standards and Practices in Mining

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Chairman Hickenlooper, Ranking Member Braun, and members of the subcommittee, thank you for the opportunity to testify today. The opinions expressed in this testimony are solely my own and do not necessarily reflect those of the University of Virginia or Stone Mountain Health Services.

I am a pulmonologist and the medical director of the Black Lung Program at Stone Mountain, a Federally Qualified Health Center in Southwest Virginia. Stone Mountain is the largest black lung clinic in the nation – we see about 2,000 coal miners each year. Most of these miners are no longer working.

I'd like to start off by sharing the story of one of my patients. Paul is a charming 62-year-old family man who just this week welcomed to the world his 6th grandkid. Paul worked for 8 years underground as a roof bolter in eastern Kentucky before a mine caved in and crushed him. No longer able to work underground, Paul now pastors a church. For years, he has struggled to keep up with his grandkids, and sometimes has difficulty finishing his sermons due to his trouble breathing. Despite his severe lung disease with lung biopsies indisputably showing silica and coal dust, he was denied benefits 3 times before I met him.

Paul's story is similar to countless other miners and illustrates 3 main points I want to get across today:

1) **The rates of severe black lung are at near-historical highs in Central Appalachia.**

2) **We should start using additional, existing tools to improve early detection of disease.**

3) **The black lung benefits process is frustrating for nearly all coal miners. The 2023 Black Lung Benefits Improvement Act would be a big step in the right direction.**

First: Paul is not alone, and is in fact part of a larger problem. Earlier this year, my colleagues and I published a report in JAMA, the Journal of the American Medical Association describing over 1,000 miners who, in the last 5 years, were newly diagnosed with the most severe form of black lung: progressive massive fibrosis (PMF). Like Paul, many of these miners are young and worked short tenures in mining.[1] A previous large study of former US miners applying for Federal Black Lung Program benefits shows that the proportion of miners with PMF has significantly increased since the 1990's with the highest rates of disease seen in Central Appalachia.[2] The figure below from this study (Almberg et al.) shows the percentage of claimants with PMF in Virginia has rapidly increased in the last 2 decades to a rate greater than 10%. This bears repeating: in Virginia more than 1 out of 10 miners applying for federal black lung benefits have the most advanced stage of black lung. Even in actively working miners, rates of black lung including PMF are still unacceptably high. In a study of miners participating in the Coal Worker's Health Surveillance Program from 2014-2022, 331 (8.5%) of miners from Central Appalachia had evidence of black lung – with 52 (1.3%) showing evidence of progressive massive fibrosis.[3]

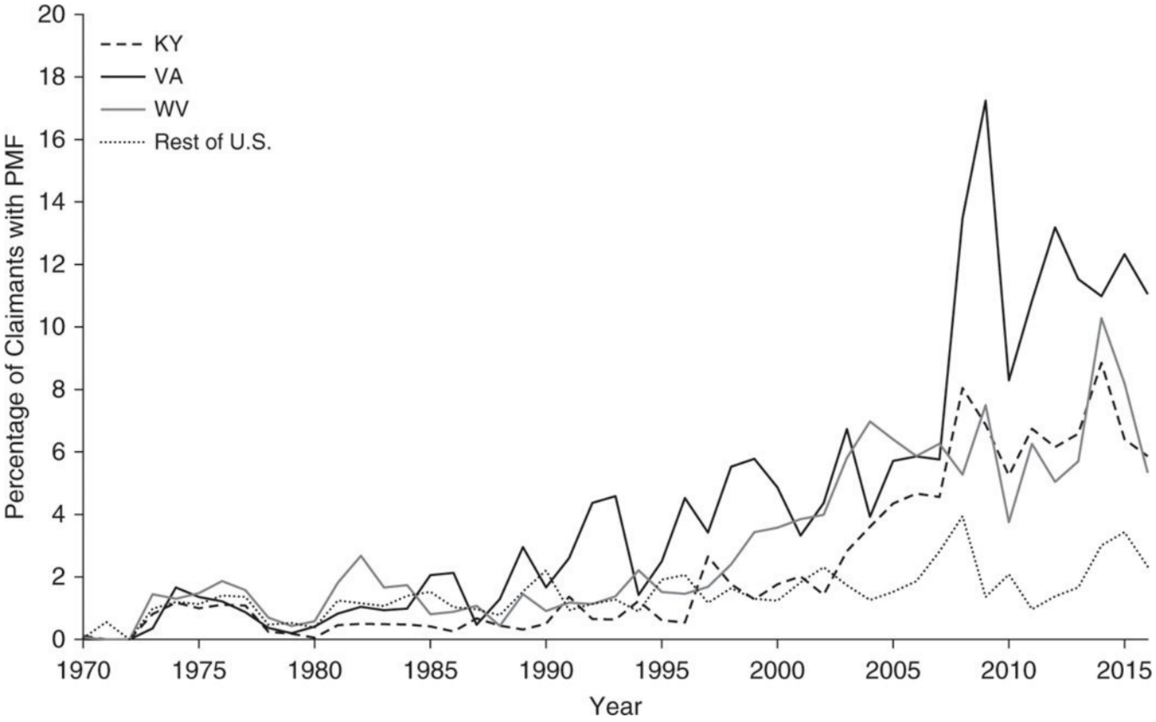


Figure 3.
Percentage of claimants for Federal Black Lung Program benefits who received a determination of progressive massive fibrosis (PMF) during their claim process in the central Appalachian states of Kentucky, Virginia, and West Virginia compared with the rest of the United States, 1970–2016. Data restricted to those miners with between 5 and 60 years of coal mine employment. Data source: U.S. Department of Labor, Office of Workers' Compensation Programs, Division of Coal Mine Workers' Compensation.

My second point: Better early detection of black lung is possible and is key to preventing severe disease. Voluntary participation in respiratory health screening for coal miners, as part of the NIOSH Coal Worker's Health Surveillance Program (CWHSP), is not working as it is intended.[3] Only about 1 in 3 working miners participate in this voluntary program. But even more concerning, the participation rates are lowest in Central Appalachia – where the black disease rates and severity are the highest. Hall et al noted that while Central Appalachia accounted for 40%–45% of US coal mining employment annually from 2014 to 2021, only 21.9% of CWHSP participants worked in Central Appalachia.[3]

This lack of participation in the CWHSP has significant health consequences. 39% of miners with disabling pneumoconiosis did not participate in the CWHSP during their working careers.[4] Earlier disease detection might have allowed many of these miners to reduce their subsequent dust exposures and prevent the development of severe disease.

There are many barriers to participation in the CWHSP including stigma, fear and financial disincentives (such job loss and inability to find additional employment). These barriers are challenging to address, especially as studies of miners have highlighted that for many miners, providing for their family is paramount, even at the cost of their own health.[5]

To stop this crisis of black lung that is ongoing in the US, we need to work to both improve participation in the CWHSP and to improve screening tools used in the CWHSP to better identify early disease in working miners. I have three suggestions in this regard:

1) Reduce the financial disincentive to participate in the CHWSP. Working miners can apply for federal black lung benefits even while they are working. If they are found to have severe enough disease to meet the disability criteria and are awarded benefits, they can immediately start receiving part of their benefit, even while continuing to work in the mines: a health insurance benefit. However, working miners cannot receive another critical component of this benefit: a monthly stipend associated with the black lung benefits program until *after they stop working*. This represents a departure from the original Congressional intent under the Black Lung Benefits Act, which long allowed miners with PMF to draw full medical and monetary benefits. If the Department of Labor would once again allow miners to draw the monetary benefit during their working years, it is likely that many miners would seek earlier health screening.

2) We should be screening all miners with a breathing test called "diffusion capacity." Diffusion capacity is cheap, widely available and measures how well the lungs perform. An impaired diffusing capacity can be an early warning signal for black lung.[6,7]

3) We should utilize CT scans for screening <u>especially high-risk miners</u>, like Paul. We know that the rates of rapidly progressive and severe disease are highest in certain geographic regions. One study of CWHSP-participating miners, in which 84% worked in Central Appalachia, highlights how rapidly severe black lung can develop in high-risk miners: 17% of miners progressed from a normal chest x-ray to PMF (the most severe type of black lung) in less than 10 years.[8] These miners are at increased risk for rapidly progressive disease largely because of where they work – central Appalachia, where exposure to toxic silica dust in thin seam mines is known to be the highest.

   We also know that specific job types in coal mines also leads to increased risk of PMF due to increased silica dust exposures. Miners working at the mine face, in jobs like roof bolting or operating a continuous miner, face an increased risk of severe disease.[9]

   We know who is at the highest risk for rapidly progressive and severe black lung disease. If we are truly committed to ending the countless preventable deaths that are devastating the coalfield communities in America, then we need to utilize the most sensitive tools to identify early disease in the highest risk miners.

   CT scans are more sensitive test than x-rays for early detection of disease in both silica[10] and coal mine dust[11] exposed workers. When coal miners are screened by x-rays, early diagnoses of occupational lung disease will be missed.

> There are challenges in utilizing CT scans at a population level for surveillance in occupational lung disease. In the US, there is a formal certification program (e.g. NIOSH B-reader[12]) and classification system (e.g. The International Labor Organization ILO classification of radiographs[13]) to categorize abnormalities on chest X-rays. Similar programs do not yet exist in the US for CT scans. But the key word here is: yet. Outside of the US, surveillance and screening programs in other countries are beginning to pivot towards utilizing CT scans in this context.[14] We should be leading the world in innovative solutions in occupational health disease prevention and early detection, not following in the footsteps of other countries while American coal miners are suffering.
>
> Perhaps Paul's disease would have been recognized earlier if he had been offered a CT scan or a diffusion test during his coal mining career. If so, he could have requested a job transfer to a less dusty position and may not be struggling to breathe today.

My last point: The black lung benefit system, as currently designed does not work for miners like Paul and a fix is needed now. Coal miners with severe black lung fight for more than their breath. They fight for their livelihood. The federal Black lung benefits program provides health insurance and a small monthly stipend to the minority of miners who can prove they are sick enough to meet a disability standard. This is almost always a long and difficult process.

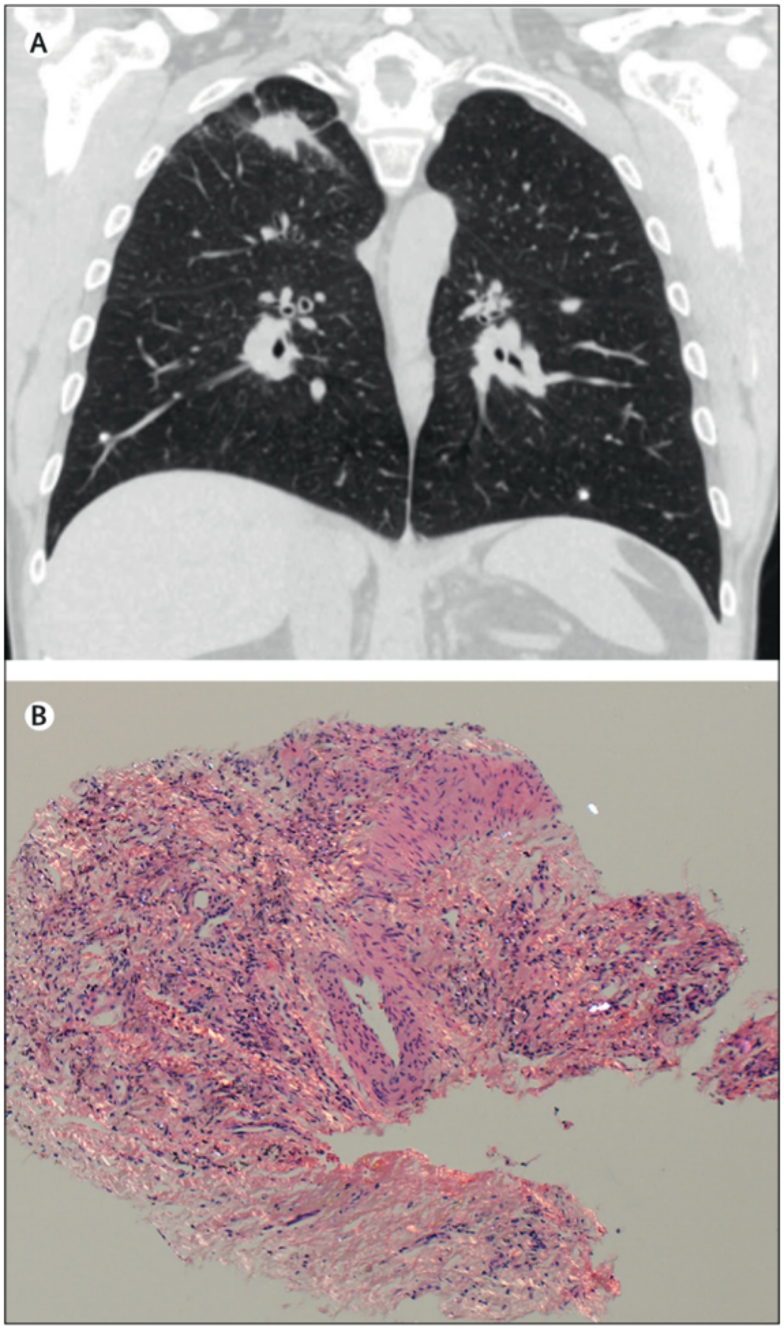
Paul didn't qualify for benefits until a he had a CT scan, a lung biopsy and his story published in a medical journal.[15] His published story, including images of his lung masses and lung biopsy (image below) showing lungs full of coal and rock dust, was submitted along with his 4th, finally successful application. It shouldn't take 6 years and a publication in the Lancet to get Paul, or many other miners like Paul, awarded benefits.

The 2023 Black Lung Benefits Improvement Act would improve this process in several ways. One key mechanism is by improved accuracy in diagnosing progressive massive fibrosis by strategically incorporating the better imaging obtained by CT scans in miners with specific abnormalities seen on their x-rays. CT scans are more accurate at identifying PMF than X-rays, and for miners with known black lung on X-rays, we should be utilizing the better test (CT scans) to confirm whether or not PMF is present.

However, as you know, a version of Black Lung Benefits Improvement Act has been proposed for nearly a decade. While we wait, my patients who do receive benefits are receiving a small stipend that is not indexed to inflation. And those who are sick-but-not-yet-qualified are often frustrated by conflicting x-ray results that leads to years-long disputes.

While it is too late for Paul to benefit from these proposed changes, many in his church congregation and his community could still be helped by these changes, and nationally there are thousands of miners that desperately need this help. Thank you for taking this black lung crisis seriously by having me here to speak with you today. I hope that you will consider ways to improve early detection of black lung and no longer delay the passing of the Black Lung Benefits Improvement Act.

Image of Paul’s Lung Masses and Biopsy showing coal and silica dust:



See Online for appendix

***Figure:* Coal workers’ pneumoconiosis**
(A) CT scan of the chest shows numerous bilateral pulmonary nodules and an irregular 5·2 cm mass in the right upper lobe with mediastinal lymphadenopathy.
(B) Histopathological examination of the mass shows focal collagenous fibrosis associated with anthracosis and polarised silicate particles—variably sized white crystals. Original magnification less than ×50.

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