

Flaws in MSHA's Support for Its Proposed Rule on Respirable Dust

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AB64-COMM-74-13

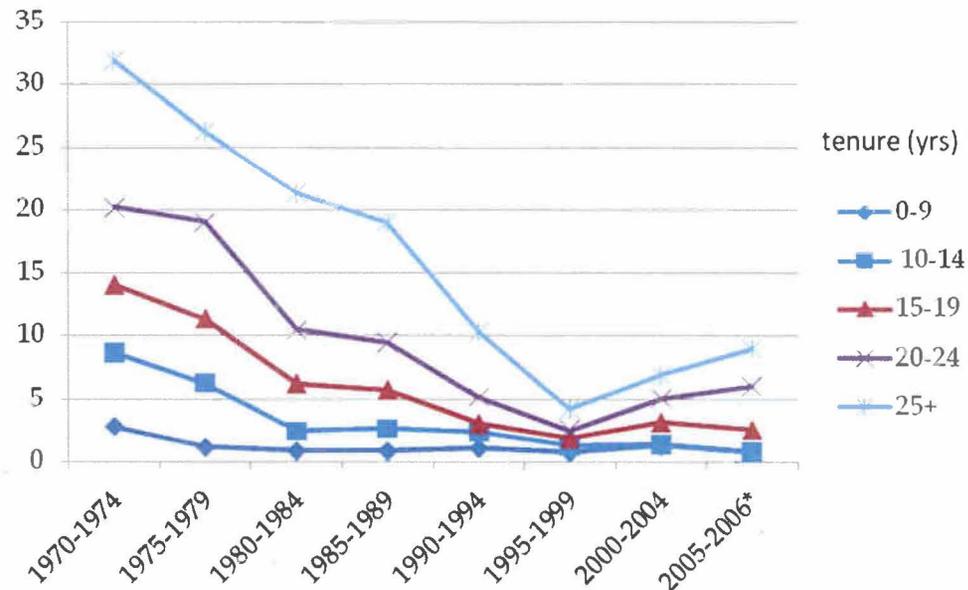
The Rule is Being Driven By a False Claim

“Based on recent data from the National Institute for Occupational Safety and Health (NIOSH), the prevalence rate of black lung is increasing.”

- Preamble explanation accompanying the Proposed Rule

MSHA's Alleged Support for Its Claim

Percentage of Examined Miners with CWP (category 1/0+) by Tenure in Mining, (1970-2006)



- Chart presented in NIOSH Work-Related Lung Disease (WoRLD) Surveillance Report, 2007.
- Presents increasing trend in CWP prevalence since 1995.
- Presents the Data in 5 year periods. MSHA and NIOSH failed to provide detailed annual data.
- 2005-2006 reported as a partial period.

The First Problem: A “Hot Spot” Focus in 2006

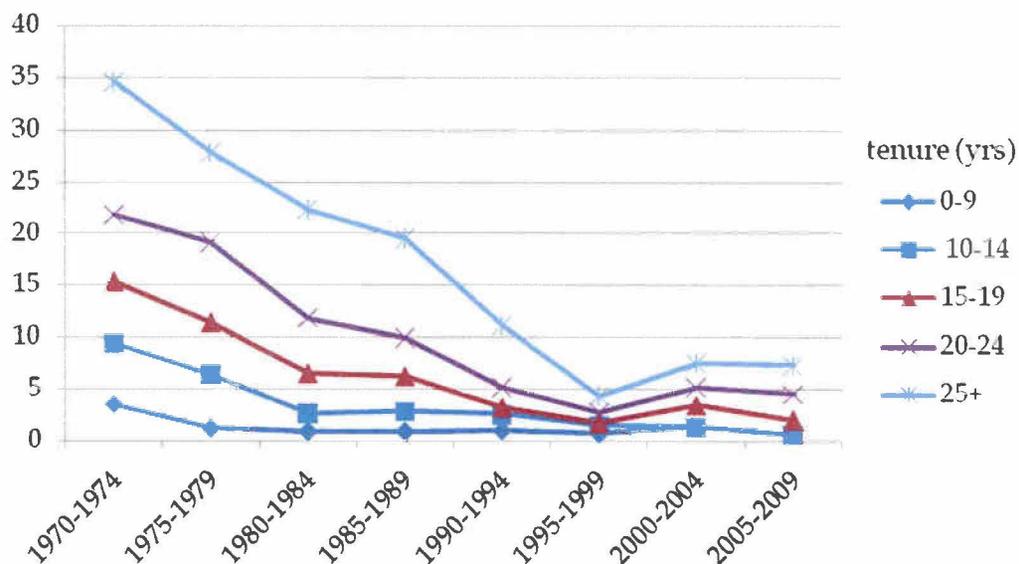
Enhanced Coal Workers’ Health Surveillance Program (ECWHSP)

MSHA district	year	# of x-rays	# of miners employed	disease prevalence (%)
D1	2008	58	92	10
D2	2009	687	4150	2
D3	2008	1055	4122	2
D4	2007	1077	7072	7
D5	2006	649	2456	8
D6	2006	379	3740	11
D7	2006	448	2592	8
D8	2007	707	1928	1
D9	2007	898	3833	1
D10	2009	142	1770	2
D11	2007	617	2598	2

- Early phases of program targeted Central Appalachian “hot-spot” areas where regional clusters of rapidly progressive cases of disease have been observed.
- District 5 (Southwest VA), District 6 (Eastern KY) and District 7 (Southeast KY) surveyed in 2006.
- 2005-2006 period influenced by ECWHSP focus on Central Appalachian region in 2006 and is not representative of the entire mining industry.

The Second Problem: Data from 2007-2009 was Excluded

Percentage of Examined Miners with CWP (category 1/0+) by Tenure in Mining, (1970-2009)

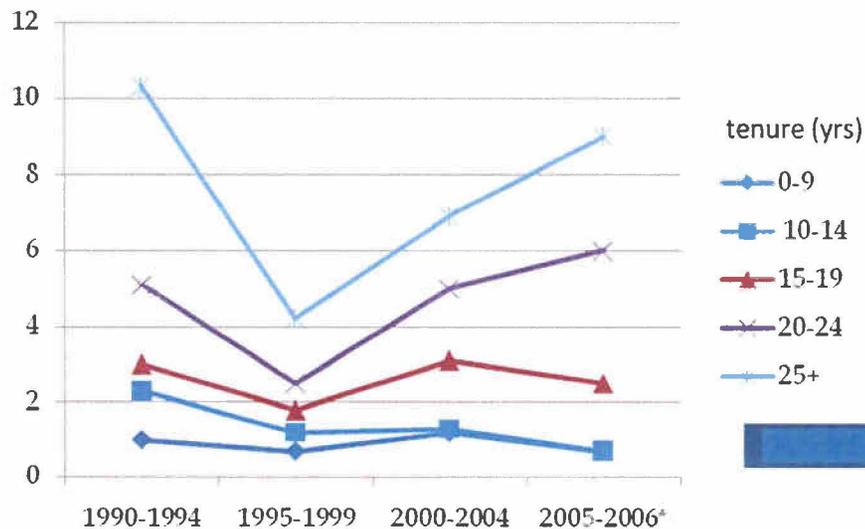


- Chart created using NIOSH Coal Workers' Health Surveillance Program (CWHSP) Data Query System. NIOSH released summary data on February 22, 2011, but continues to refuse to release the complete data-set despite FOIA requests.

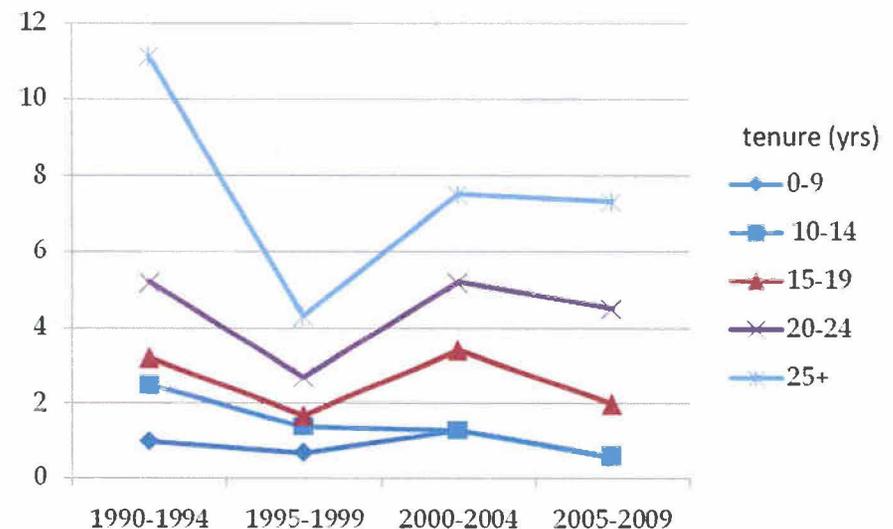
- 2005-2009 reported as a full period; reduces influence of Central Appalachian region from 2006 ECWHSP.

- Presents decreasing trend in CWP prevalence since 2000.

Current CWP Trends - Updated with Latest Data



Source: NIOSH WoRLD Report, 2007

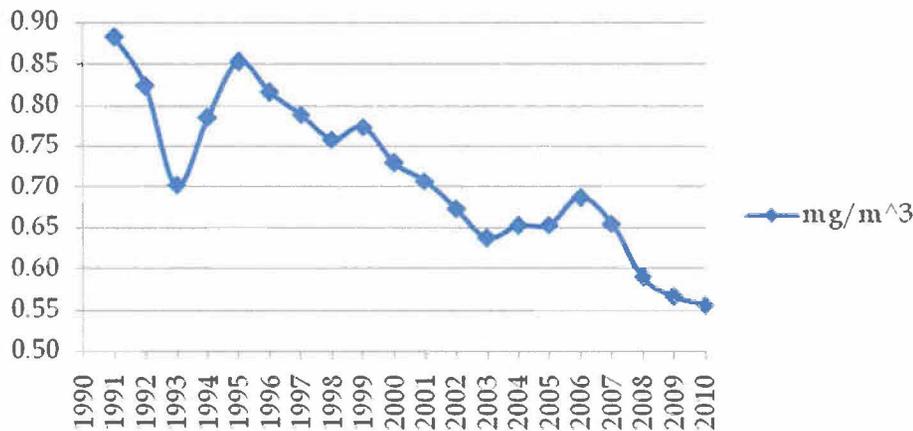


Source: NIOSH CWHSP Data Query System, 2011

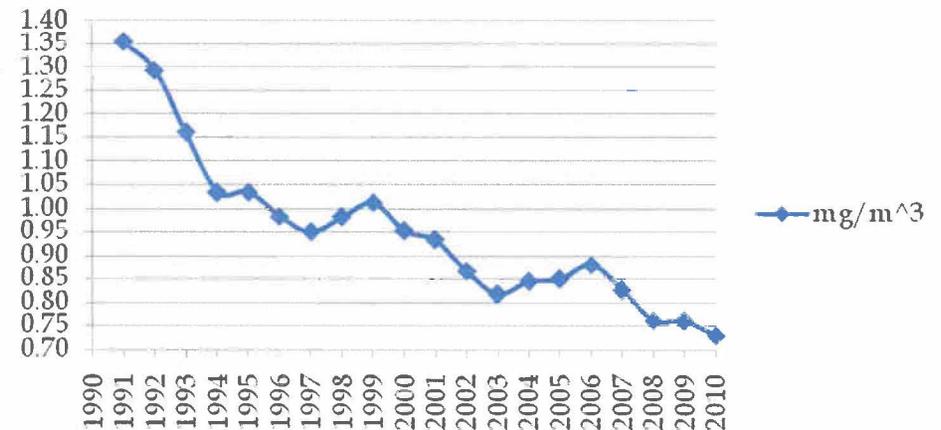
- Based on more recent data, trends in CWP prevalence reverse; all tenure groups now trending downward.
- In 2006, 1476 miners were examined in Central Appalachia under the ECWHSP. 131, or 8.9%, of those miners were found to have signs of CWP (category 1/0+). In the same year, 2669 miners were examined outside of the ECWHSP. 62, or 2.3%, of those miners were found to have signs of CWP (category 1/0+).

No Correlation Between Dust Exposure and Lung Disease Prevalence

Avg Dust Concentrations; All Occupation Codes



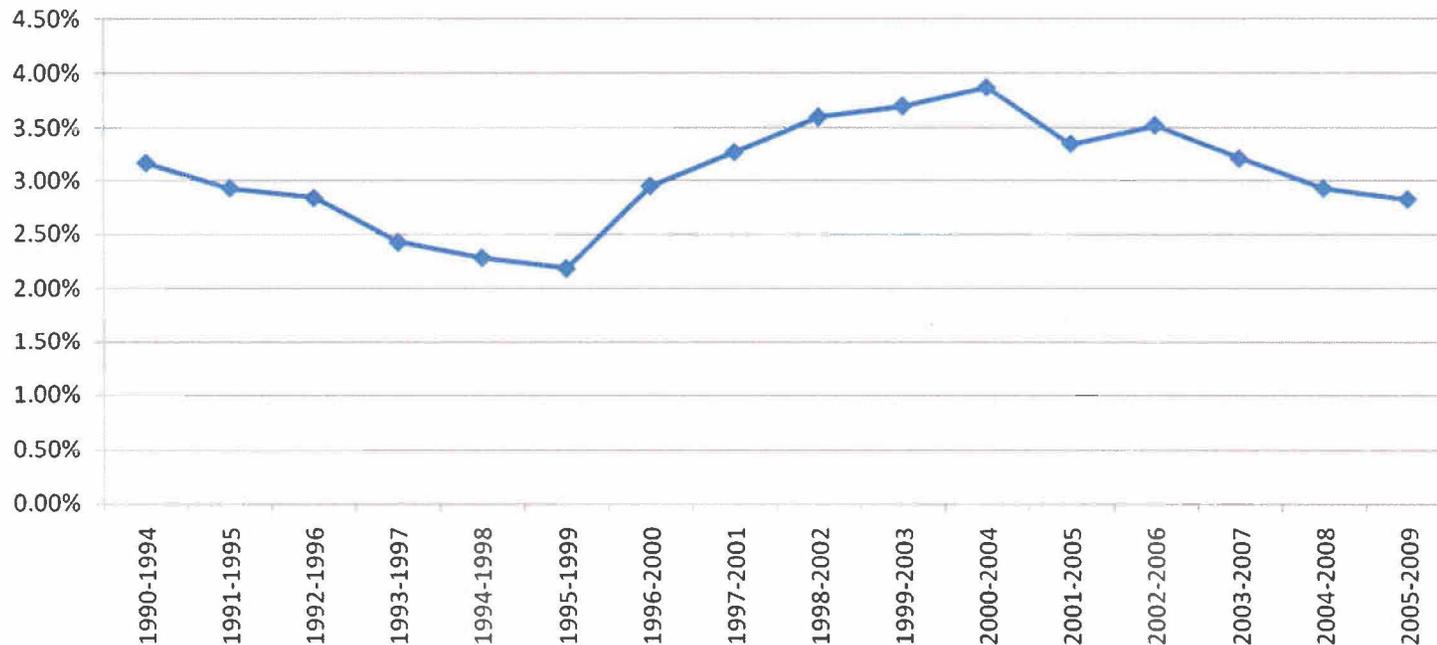
Avg Dust Concentrations; Occupation Code 36 - CM Operator



- Concentrations of respirable coal mine dust, as measured by MSHA and operators, have steadily declined since 1995.

The Third Problem: Methodology Change Starting in 2000

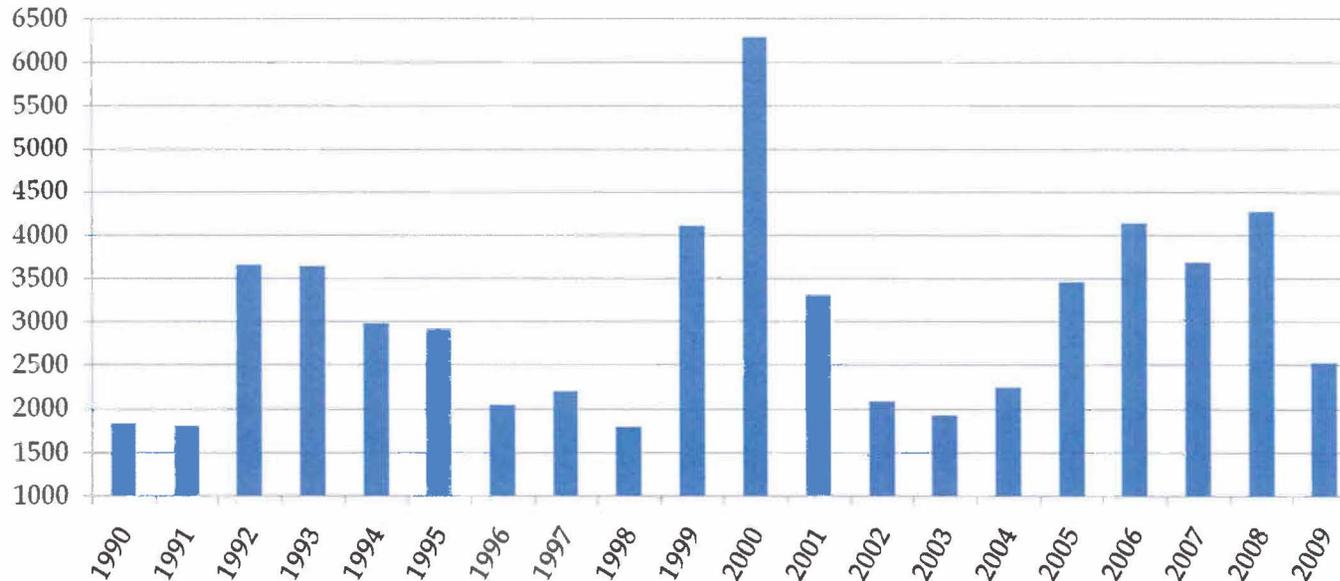
Percentage of Examined Miners with CWP (category 1/0+) by Five Year Period (1990-2009)



- Miners across the country are generally offered x-rays in five year cycles.
- Examination of 5 year periods reveals a significant year over year increase in 2000. The change in 2000 affects results over a 5 year period.

Methodology Change: Increased Screenings and Bias

Number of Miners Examined Annually (1990-2009)



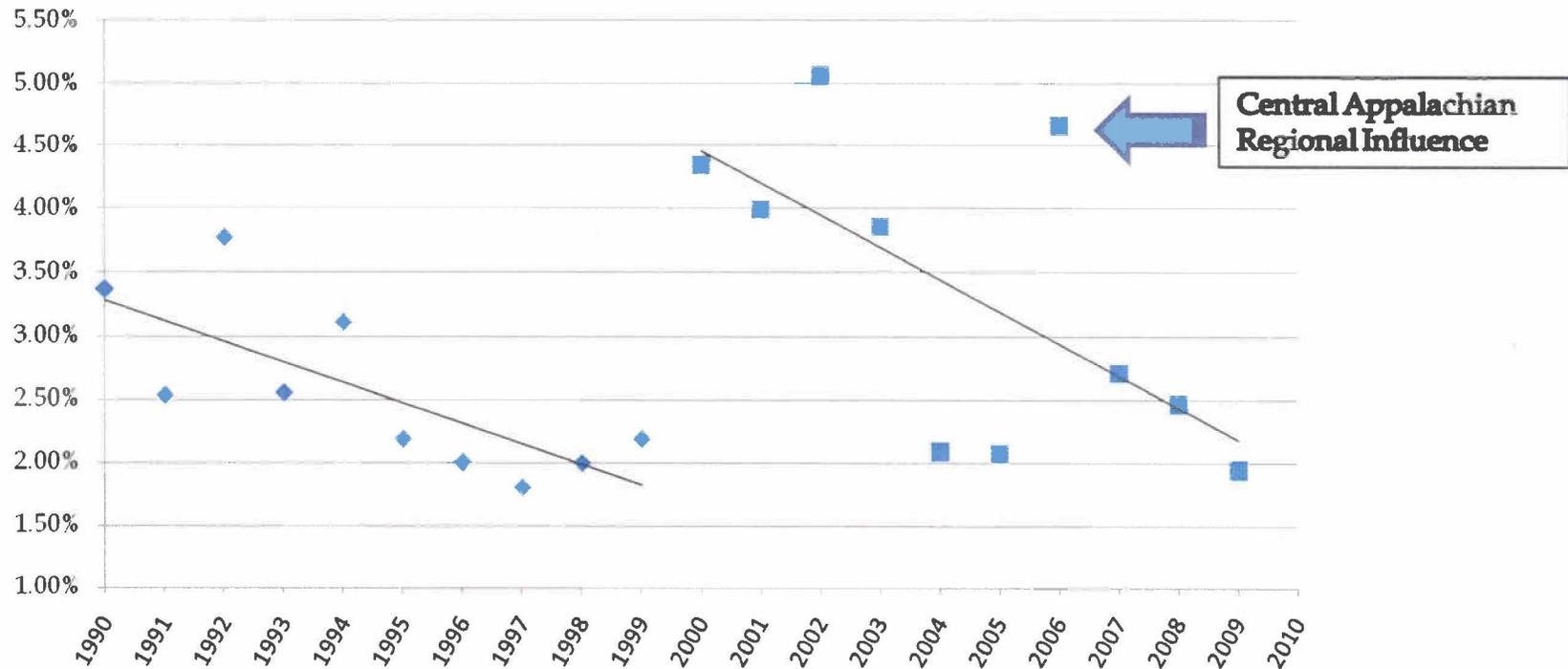
- 6291 miners examined in 2000.
- 47% more miners examined in 2000 than any other year since 1990.
- More miners examined in 2000 than in 1996, 1997 and 1998 combined.

Miners' Choice Program

- From October 1999 through September 2002, MSHA operated a special x-ray examination program called the Miners' Choice Program (MCP).
- This program was an adjunct to the routine CWHSP and involved enhanced publicity, incentives, and other activities focused on motivating miners to obtain a chest x-ray. Additionally, unlike the CWHSP, examinations under the MCP were paid for by MSHA.
- As a result of the MCP, an additional 10,400 x-rays were submitted to the CWHSP.
- The MCP created a self-selection bias in the CWHSP data set that affected the CWP prevalence results.
- Trends before and after the introduction of the MCP must be examined independently.

Results Taking Into Account the Altered Methodology Starting in 2000

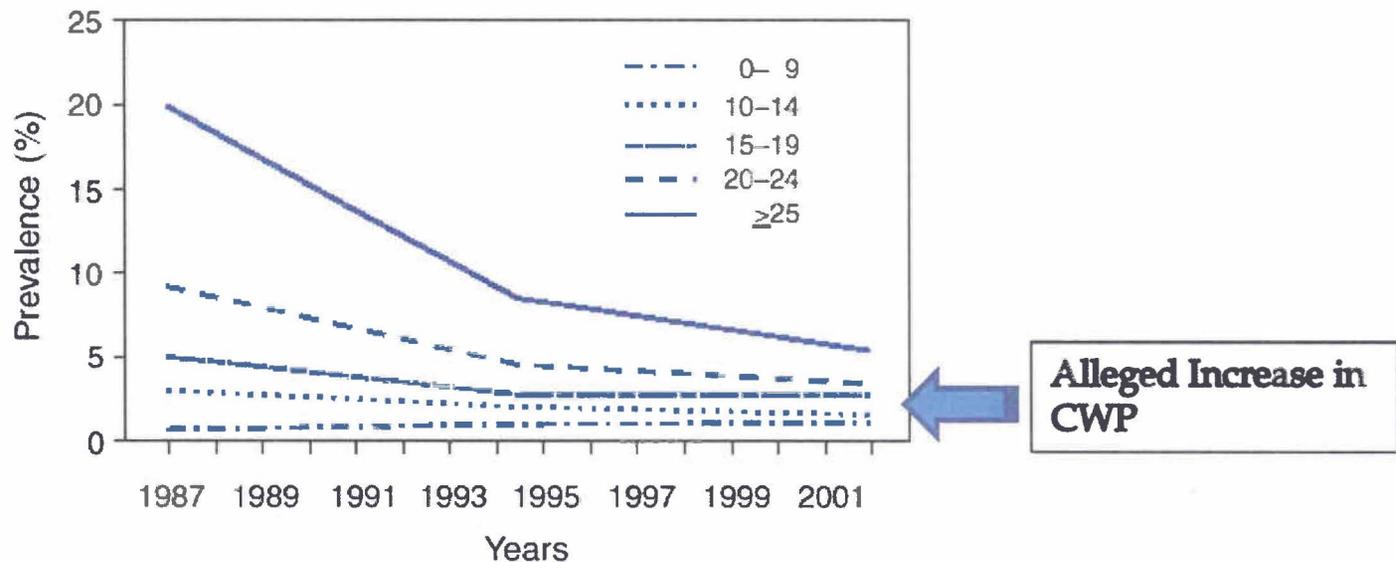
Percentage of Examined Miners with CWP (category 1/0+) Annually (1990-2009)



- Variability between years due to regional concentration of examinations.
- The MCP resulted in a bias of the prevalence data starting in October of 1999.
- Trend analysis must consider the impact of regional influences and procedural changes in data collection.

Use of Data Grouped in Multiple Years is Misleading

FIGURE 2. Trends in coal workers' pneumoconiosis prevalence by tenure among examinees employed at underground coal mines — U.S. National Coal Workers' X-Ray Surveillance Program, 1987–2002



- Reference: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5215a3.htm>
- Appears to represent annual results of CWHSP over a 15 year period, actually shows trend before and after midpoint of data set. Selective trending hides the influence of procedural changes in 2000 leading many to falsely conclude that CWP prevalence has been increasing over the last decade.
- MSHA should not be allowed to rely on selective presentation of data to support its proposed rule.

Participation in the CWHSP Should Be Mandatory

- MSHA District 8, which covers the southern Indiana and Illinois coal producing region, has seen the highest participation in the CWHSP in the country.
- “For the period of 2006 through 2010, there was an estimated employment of 2,073. Of those 2,073 employed, there were 2,720 examined for a participation rate of 131%. The number of miners examined exceeds the estimated number of miners employed. This may be due to the incomplete mine rosters or fluctuation in employment.”

Reference:

<http://www.cdc.gov/niosh/topics/surveillance/ORDS/rep/UnD00008.HTML>

- MSHA District 8 has the lowest observed prevalence of CWP in the nation. 0.7% of the miners examined in the ECWSP in District 8 were diagnosed with CWP (category 1/0+).
- Mandatory screenings can improve the quality of the CWHSP data set and provide researchers the information required to implement appropriate corrective actions in the correct locations in a timely manner.

Where Do We Stand?

Miners

- According to 2009 CWHSP data, the prevalence of lung disease in miners was below 2.0%.

General Population

- According to a study of various studies on “background prevalence,” the prevalence of opacities in general populations ranged from 0.21 to 11.7%.
- The overall pooled prevalence was 5.3%
- When European and North American studies were analyzed separately, the pooled prevalence for three European populations was 11.3%. The pooled prevalence for six North American populations was 1.6%.
- A comparison between smoking and nonsmoking workers exposed to acrylamide dust, as well as in those unexposed, parenchymal abnormalities were present in 20% of smokers compared with 2.2% of nonsmokers, suggesting that smoking plays a role in their development.

The Path Forward

- Require NIOSH to present the entire CWHSP data set, including annual results with participant work history by region.
- Require MSHA and NIOSH to consider changes in CWHSP procedures or methodology when analyzing results.
- Prohibit MSHA and NIOSH from selective presentation of data through purported trends without release of detailed annual data.
- Institute mandatory participation in the CWHSP screenings for all miners.
- When screening workers and analyzing data, require NIOSH to take into account confounding factors, such as smoking.
- Require NIOSH to compare data to prevalence of lung disease in the general population.