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Black Lung Special Report
October 15, 2015

Five Year Snap-Shot: The Terrible Numbers of Black Lung Disease

The numbers are in. Over the last five years 701 miners in nine states have reported some degree of black lung disease according to information filed with MSHA by mine operators under 30 CFR 50.20 reporting regulations, and listed on the agency's data retrieval system.

Some of the cases were reported because a miner filed a state workers' compensation claim for black lung, according to summaries provided by the operator to MSHA. Others cases were reported with the federal black lung benefits program, which triggered MSHA's mandatory reporting requirement since the operator was the last employer. Some operator summaries say that the miners have been "diagnosed with pneumoconiosis," or "alleged black lung," as shown in the records that make up the "snap shot" of pneumoconiosis cases reported to MSHA.

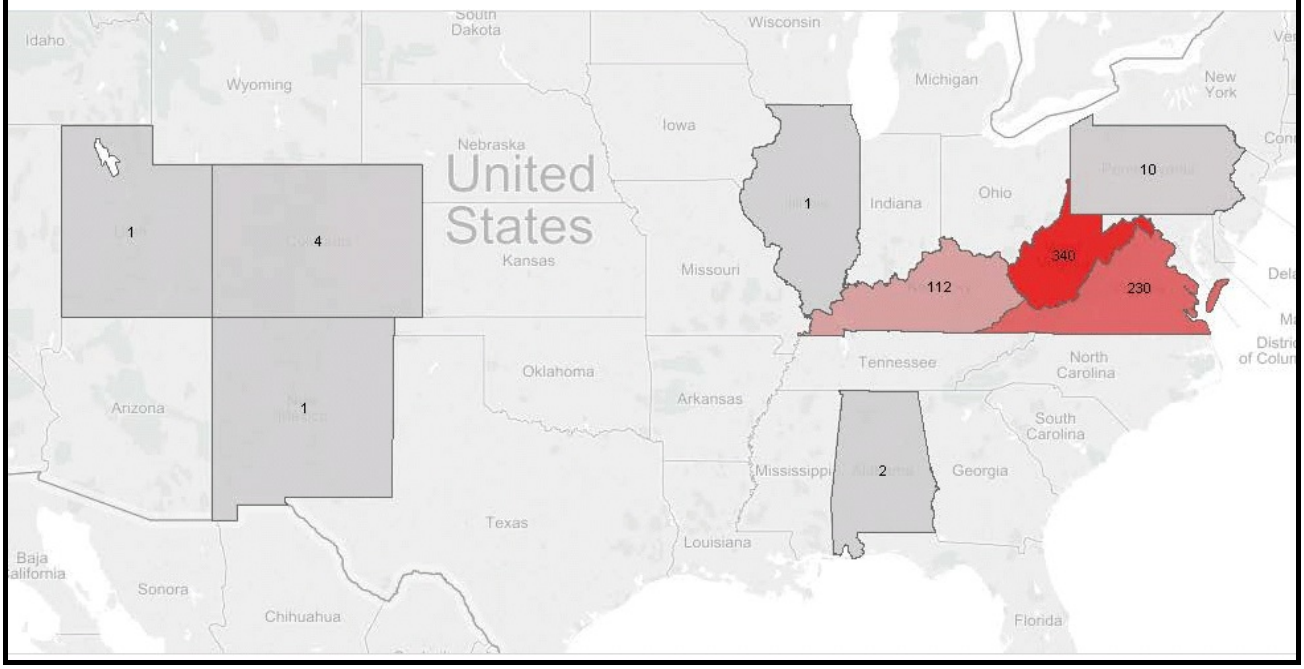
While it's a hodge-podge of triggering events that compelled the operators to report these cases, it nonetheless represents a potential death sentence for each miner positively diagnosed. But it's not all of the cases.

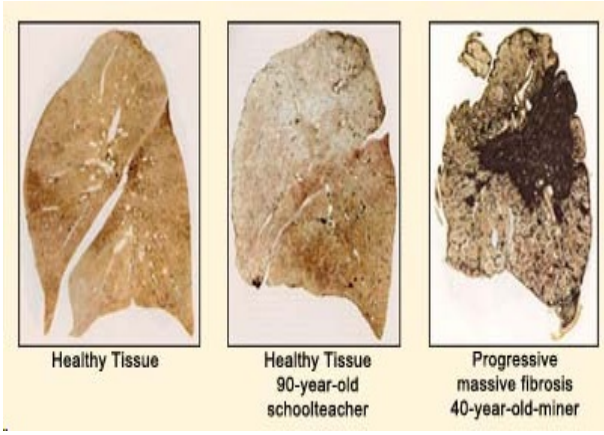
NIOSH reports that only about 32% of the miners eligible to participate in the black lung screening program do so – leaving 68% of eligible miners not having the screenings.

Cases of black lung by state for the five year period: October 1, 2010 - Sept. 28, 2015

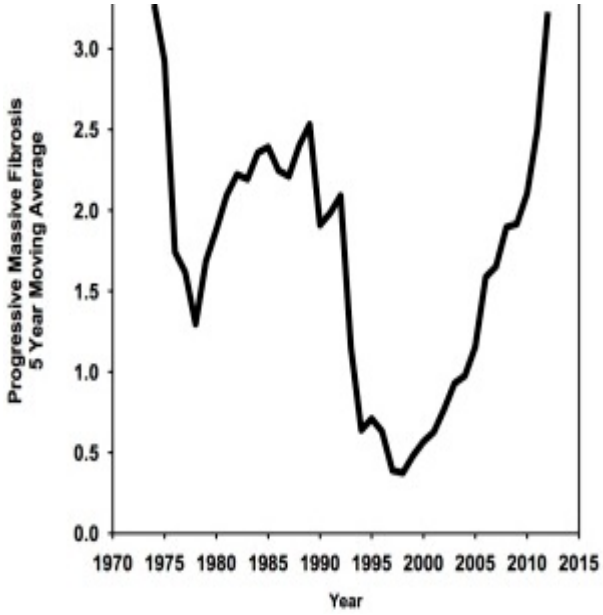
Chart made for MSHN by Dave Mistich, West Virginia Public Broadcasting

Numbers for each state were obtained from the MSHA DRS.





Samples of healthy lung tissue compared to a miner with PMF. Image from NIOSH.



NIOSH chart showing the rise in PMF in underground coal miners from 2000 - 2015

It's impossible to cross-check NIOSH and MSHA data sets. The NIOSH information is based on a miner's voluntary participation in its screening program. The information on the DRS involves an operator's mandatory reporting under §50.20 once an occupational illness is reported.

We could not determine why NIOSH had reported more cases in Indiana, Pennsylvania and Colorado than what MSHA had on the DRS, except that the ***MSHN*** "snapshot" was for the five year period beginning Oct. 1, 2010, whereas the NIOSH data set ran from Jan. 1, 2010.

NIOSH information from voluntary reporting shows that from Jan. 1, 2010, to Dec. 31, 2014, the latest data available, there were 49,016 miners eligible for black lung screening.

Of those miners, 15,668 miners took part in the voluntary black lung surveillance program – or about 32% of the eligible workforce. Of those participating miners, 402, were identified with chest X-ray changes consistent with black lung, and 81 of those miners had progressive massive fibrosis (PMF), the worst kind of black lung disease, and an absolute painful death sentence.

Recently, the *American Journal of Respiratory and Critical Care Medicine* published a letter from NIOSH scientists noting the increases in PMF.

In the year 2000, the most severe form of black lung, PMF, "was virtually eradicated." In 2000, miners screened for the disease showed a PMF black lung prevalence rate of 0.33% among active underground miners with at least 25 years of mining experience.

But since 2000, the national prevalence of PMF black lung in underground miners increased to 3.23% in the states of West Virginia, Virginia and

Black Lung Disease By State
2010 - 2015 (MSHA)
2010 - 2014 (NIOSH)
(PMF = cases of progressive massive fibrosis found by NIOSH)

ST	Cases On MSHA DRS	Cases Found By NIOSH	No. of PMF
WV	340	126	34
VA	**230**	**61**	**16**
KY	112	75	18
PA	**10**	**34**	**0**
CO	4	12	0
AL	**2**	**0**	**0**
IL	1	26	0
IN	**0**	**13**	**0**
NM	1	0	0
UT	**1**	**0**	**0**
*	0	55	13
Totals	**701**	**402**	**81**

* NIOSH's data base has a section of reported cases, but no state listed.
** We could not determine the reasons why NIOSH had more cases reported in Indiana, Pennsylvania and Colorado than what appeared on the MSHA DRS.

Black Lung Cases Reported on DRS
Oct. 1, 2010 - Sept. 28, 2015

Oct 1, 2010 - Sept. 30, 2011:	41
Oct. 1, 2011 - Sept. 30, 2012:	69
Oct. 1, 2012 - Sept. 30, 2013:	169
Oct. 1, 2013 - Sept. 30, 2014:	222
Oct. 1, 2014 - Sept. 28, 2015:	200

Kentucky – "the highest level since the early 1970s," according to NIOSH and the chart (pg. 2) published in the national medical journal.

In addition, the PMF cases are almost as high in 2015 as they were in 1970 right after the 1969 Coal Mine Act was passed.

NIOSH offers various theories to the increase in PMF cases.

A 2009 NIOSH study found that black lung was more prevalent in workers at smaller mines than among those from larger mines.

"Small mine size brings with it the potential for limited knowledge of, and resources for, dust reduction and disease elimination. Although larger mines can employ trained industrial hygienists and purchase state-of-the-art dust suppression measures, small mines may not have such opportunities," the study notes.

NIOSH's 2009 study also found that miners with CWP in smaller mines are younger than those in larger mines, and noted that West Virginia workers comp data "found PMF in miners as young as 40 years."

NIOSH also found cases are higher where the coal seams are thinner – less than 43 inches – with 96% of these thin seam mines located in Kentucky, Virginia, and West Virginia. NIOSH also points to "other factors, such as increased production (implying an increase in general coal mine dust exposures) and increasing hours worked, may have contributed to the observed increases in disease.

Black Lung: Not An 'Old Man's Disease'

Black lung is no longer a disease of older miners as it was 15 to 25 years ago.

Of the 701 cases reported on the DRS for this snapshot, 12.7% of the miners – 69 of them – have less than 15 years mining experience. MSHA reports that the most disabling and potentially fatal form of CWP is being observed in miners in their thirties.

NIOSH said the geographic clustering of rapidly progressing CWP in younger miners may point to excessive exposures to crystalline silica found in the waste rock mined with coal. Therefore, adequate ventilation, and dust controls are key to preserving the miners' health.

UBB miner Jason Atkins had black lung disease. He was only 25 years old.

An example of this can be seen in the aftermath of the Upper Big Branch disaster where 17 of the 24 miners where autopsies could be performed had black lung disease. The youngest was Jason Atkins, a 25 year old roof bolter in the UBB mine who had only five years of mining experience. The UBB cases would not be part of this snapshot since the deaths occurred before Oct. 1, 2010, and their deaths were not listed as black lung cases. Five of the UBB miners identified with black lung had less than 10 years of mining experience.

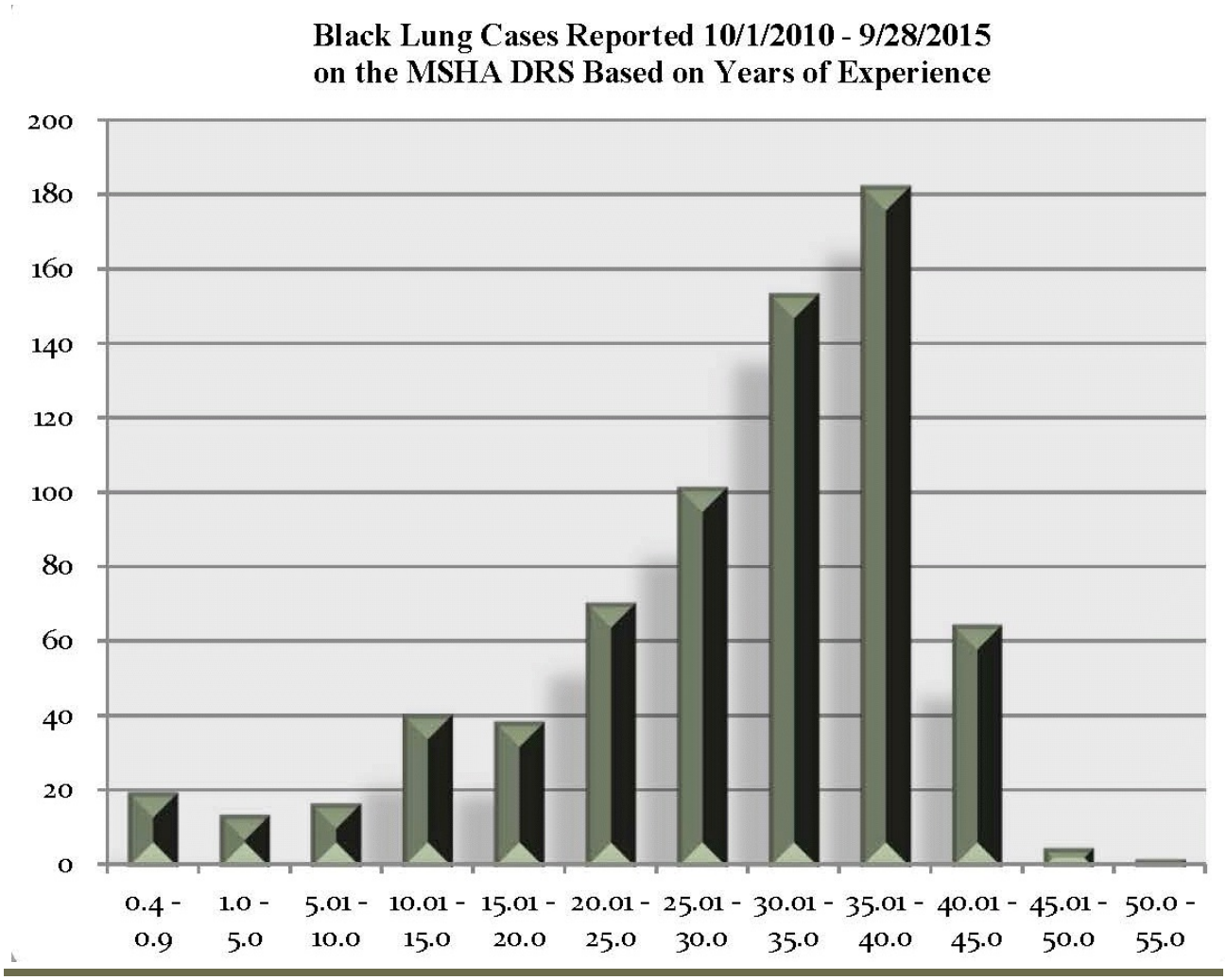
Of the seven UBB miners not identified as having black lung, they did have identified on their autopsy report "anthracosis," which is a black pigment deposit without the fibrosis needed to make a firm diagnosis of black lung.

In the findings based on the DRS, for the younger 69 miners with less than 15 years experience, it will be much more difficult for them miners to pursue a black lung claim without the 15-year "presumption."

In the DRS findings, there are 19 cases where experience was not listed.

Experience Of Miners Reporting Black Lung Disease: Oct. 2010 - Sept. 2015

Yrs. Exp	No. of Miners	%
1 - 5 years	13 miners	1.9%
5.01 - 10	16 miners	2.3%
10.01 - 15	40 miners	5.7%
15.01 - 20	38 miners	5.4%
20.01 - 25	70 miners	10%
25.01 - 30	101 miners	14%
30.01 - 35	153 miners	22%
35.01 - 40	182 miners	26%
40.01 - 45	64 miners	9%
45.01 - 50	4 miners	0.6%
50+	1 miner	0.1%
"blanks"	19 miners	2.7%



In addition, it's not just underground miners getting black lung, but rising in surface miners as well.

NIOSH also reported that a one year study on surface coal miners, from 2010 through 2011, found that 46 of 2,257 miners working at surface coal mines during 2010–2011 had black lung based on chest X-rays. Of the 46 with black lung, 37 had never worked underground and 12 had had PMF, including nine who had never worked underground.

NIOSH said that a high proportion of the radiographs suggested silicosis may be the reason for the prevalence of black lung and PMF, which are the highest in Central Appalachian miners, even after adjusting for mining tenure.

Company Numbers May Not Tell Entire Story

It would seem logical to think that the companies with the highest black lung rates have the most significant problems.

However, reporting experience tells us that miners have worked for different companies over their careers. In addition, many miners have retired, and their diagnosis is linked to their last employer.

The UMWA, the Appalachian Citizens Law Center, and NIOSH confirm that there are certain companies who encourage their miners to seek X-ray surveillance, and the miners are confident that they can be transferred to less dusty positions in the mine should the have a diagnosis of black lung disease, and keep their jobs.

On the other hand, ARDF's Steve Sanders explained that miners may not report their cases to their current employers because they may have trouble securing future employment. They also worried about getting fired.

Phil Smith from the UMWA said some miners may not want to know.

"Regarding why miners may not want to get a diagnosis of CWP, some miners, especially non-

union miners, are fearful that if the operators find out they have been diagnosed with CWP, they will either find a reason to fire them or take them off of their higher-paying job. Others simply may not want to know until they are ready to retire for fear of knowing the truth. It's a death sentence, and not all of us are ready to hear that at age 35."

So while the DRS shows the companies and controlling entities reporting black lung cases, the figures may not tell the entire story.

Top Controlling Entities Reporting Black Lung Cases
Oct. 1, 2010 - Sept. 28, 2015

Controller	No. of cases	Percentage of all cases
*Alpha Natural Resources Inc.	505	72%
Patriot Coal Corp.	68	9.7%
CONSOL Energy	22	3.1%
TECO Energy Inc.	19	2.7%
**Robert E Murray	17	2.4%
James River Coal Co.	13	1.9%
Arch Coal Inc.	6	0.9%
SunCoke Energy	6	0.9%
Long Branch Energy	5	0.7%

*140 or 20% of the Alpha cases are former Massey Energy mines – not including the 17 UBB miners.
**All of the Robert E. Murray cases listed are former Consol mines.

Operators and Mines with 10 or More Reported Black Lung Cases
Oct. 1, 2010 - Sept. 28, 2015
By Operator, Controller, Mine Name, State

Paramont Coal Co. Virginia LLC
Total: 122 Cases
(Controller: Alpha Natural Resources)

Deep Mine #26:	**33**	**VA**
Deep Mine 41:	31	VA
Deep Mine #25:	**29**	**VA**
Deep Mine 37:	8	VA
88 Strip:	**7**	**VA**
Toms Creek Complex:	4	VA
Deep Mine #35:	**3**	**VA**
South Fork Strip Mine:	2	VA
Butcher Knife Surface Mine:	**1**	**VA**
Cabin Ridge Surface Mine:	1	VA
Deep Mine 44:	**1**	**VA**
Red Onion Surface Mine:	1	VA
Smith Gap Surface Mine:	**1**	**VA**

*Brooks Run South Mining and Brooks Run Mining LLC: Total 45 Cases
(Controller: Alpha Natural Resources)

Mines with an asterisk were operated by Brooks Run Mining, and then Brooks Run Mining South in 2014. Since many of the same miners worked at the mines, we combined the cases from the two entities).

Mountaineer Alma A Mine:	**11**	**WV**
*Still Run No 3:	8	WV
***Cucumber Mine:**	**5**	**WV**
*Horse Creek No 1:	5	WV
***Wyoming No 2:**	**5**	**WV**
*Lower War Eagle Mine:	2	WV
Beckley Mine:	**3**	**WV**
Jackson Bridge 1	4	WV
Brooks Run Processing Plant 1	**2**	**WV**

Marfork Coal Co. : Total 44 Cases
(Controller: Alpha Natural Resources Former Massey Energy)

Brushy Eagle:	**12**	**WV**
Horse Creek Eagle:	9	WV
Slip Ridge Cedar Grove Mine:	**9**	**WV**
Marsh Fork Mine:	6	WV
Allen Powellton Mine:	**3**	**WV**
Coon Cedar Grove Mine:	3	WV
Marfork Processing:	**1**	**WV**
Parker Peerless Mine:	1	WV

Mill Branch Coal Corp.: Total 43 Cases
(Controller: Alpha Natural Resources)

D-10 Dorchester:	**20**	**VA**
D-7 Osaka:	7	VA
D-6 North Fork:	**6**	**VA**
Bluff Spur Mine:	4	VA
Looney Creek Taggart Mine:	**3**	**VA**
Guest Mtn. No. 5:	2	VA
Derby Wilson Mine:	**1**	**VA**

Dickenson-Russell Coal Co. LLC: Total 40
(Controller: Alpha Natural Resources)

Cherokee Mine:	**23**	**VA**
Laurel Mountain:	10	VA
Moss #3 Plant:	**3**	**VA**
Roaring Fork No 4:	3	VA
McClure River Plant:	**1**	**VA**

Kingston Mining Inc.: Total 29
(Controller: Alpha Natural Resources)

Kingston No 1:	**22**	**WV**
Kingston No. 2:	6	WV
Kingston Processing:	**1**	**WV**

North Fork Coal Corp.: Total 20
(Controller: Alpha Natural Resources)

Mine No 4:	**6**	**KY**
D-11 Panther:	4	KY
Mine No 5:	**4**	**KY**
Cloverlick # 1A:	2	KY
D-8 Cloverlick:	**2**	**KY**
D-12 Kellioka:	1	KY
D-14 Stillhouse:	**1**	**KY**

Consolidation Coal Co.: Total 20
(Murray Energy – former Consol Mines)

Loveridge #22:	**9**	**WV**
Robinson Run No 95:	8	WV
Shoemaker Mine:	**2**	**WV**
Blacksville No 2:	1	WV

Sidney Coal Co. Inc.: Total 18 Cases
(Controller: Alpha Natural Resources former Massey Energy)

#1 Prep Plant:	**1**	**KY**
M3 Energy:	1	KY
Process Energy:	**11**	**KY**
Taylor Fork Energy:	5	KY

Enterprise Mining Co. LLC: Total 17
(Controller: Alpha Natural Resources)

Mine #9A:	**7**	**KY**
Yellow Creek #21:	6	KY
Mine #8:	**2**	**KY**
Pioneer Preparation Plant:	1	KY
Roxana Prep Plant:	**1**	**KY**

Perry County Coal LLC: Total 17
(TECO Energy)

E3-1:	**7**	**KY**
E4-1:	5	KY
E4-2:	**5**	**KY**

Elk Run Coal Co. Inc.: Total 16
(Controller: Alpha Natural Resources former Massey company)

Castle Mine:	**5**	**WV**
Black King I North Portal:	4	WV
Seng Creek Powellton:	**4**	**WV**
Chess Processing:	2	WV
Black Knight II:	**1**	**WV**

Eastern Associated Coal LLC: Total 15
(Controller: Patriot Coal Corp.)

Black Oak Mine:	**5**	**WV**
Federal No 2:	5	WV
Rocklick Preparation Plant:	**3**	**WV**
Wells Preparation Plant:	2	WV

Emerald Processing LLC: Total 12
(Controller: Patriot Coal Corp.)

Peerless Rachel Mine:	**5**	**WV**
Eagle Mine:	4	WV
Coalburg No 1 Mine:	**2**	**WV**
South Hollow Plant-Emerald Processing:	1	WV

Aracoma Coal Co.: Total 11
(Controller: Alpha Natural Resources former Massey company)

Aracoma Alma Mine #1:	**9**	**WV**
Cedar Grove #2 Mine:	1	WV
Hernshaw Mine:	**1**	**WV**

Spartan Mining Co.: Total 11
(Alpha Natural Resources former Massey company)

Road Fork #51 Mine:	**2**	**WV**
Ruby Energy:	9	WV

Brody Mining LLC: 10
(Controller: Patriot Coal Corp.)

Brody Mine No 1:	**10**	**WV**

About this Report:

The information obtained for this report was from the Mine Safety and Health Administration's Data Retrieval System, known as the MSHA DRS. We relied on the reports submitted by mine operators to MSHA from the time period of Oct. 1, 2010 - Sept. 28, 2015, to create a "snap-shot" of reported cases within the most recent 5 year time period.

MSHA and NIOSH do not have the same data sets. NIOSH's data sets are from miners who voluntarily participate in the free screening. In addition, NIOSH's data runs from Jan. 1, 2010 through Dec. 31, 2014.

We need to stress an important fact about the number of black lung cases associated with each operator. Miners may have worked with a number of companies over the years. The accompanying Excel spreadsheet with this report outlines a miner's total work experience in the mines, the miner's experience at the mine reporting the case under §50.20, and the miner's experience at their last job, such as roof bolt operator or continuous miner operator. It is the operator's responsibility to report the case under §50.20, if that operator was the last employer where the miner was employed.

The UMWA, Appalachian Research and Defense Fund, and NIOSH researchers all acknowledge that for a variety of reasons, miners may be unwilling to get the free X-ray examination from NIOSH, or may be unwilling to report the results to the mine operators. It is known that only 32% of all miners eligible participate in the black lung screening program. Therefore, the snap-shot is not a complete reporting of the black lung cases.

NIOSH findings from published reports are also included in this snapshot.

About the Reporter:

Ellen Smith is the owner and managing editor of ***Mine Safety and Health News***, an independent and credentialed news service that covers MSHA and the Federal Mine Safety and Health Review Commission. She has been covering the mining industry since 1987, and has won 37 journalism awards in her 28 years of reporting, including three Sigma Delta Chi Awards from the Society of Professional Journalists, National Press Club Awards, and recognition from the Investigative Reporters and Editors Assn.