

Coal Mining Injuries, Illnesses, and Fatalities in 2006

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In the coal mining industry, which has higher incidence rates for both fatalities and nonfatal injuries and illnesses than the private sector as a whole, the rate of nonfatal incidents declined from 2003 to 2006; the rate of fatalities in the industry declined from 2004 to 2005, but then increased in 2006. In addition, coal miners were more likely to suffer a nonfatal injury requiring days away from work in 2006 than were all private industry workers, and fatal incidents in coal mining were more likely to involve multiple fatalities than similar incidents in other industries.

Introduction

The past 2 years have witnessed several high profile coal mine incidents that led to injuries, illnesses, and fatalities. Names like Sago, Crandall Canyon, and Darby--where there were a combined 23 fatalities--entered the national consciousness when incidents at these mines received widespread coverage in the U.S. media.¹ Congress responded to the Sago and Darby mine accidents with the Mine Improvement and New Emergency Response (MINER) Act of 2006, which charged mines with developing and updating emergency response plans and established a competitive grant program for new mine safety technology.²

According to the [North American Industry Classification System \(NAICS\)](#), coal mining is part of the mining sector, along with other mining and extractive industries, such as oil and gas.³ Coal mining is further divided into bituminous coal underground mining, bituminous coal and lignite surface mining, and anthracite mining. In 2006, bituminous coal underground mining employed slightly more than half of all coal mining industry workers. Anthracite mining had less than 1 percent of total employment in coal mining.

The regulation of mines in the United States is handled by the [Mine Safety and Health Administration \(MSHA\)](#), while mine safety research is conducted by the [National Institute of Occupational Safety and Health \(NIOSH\)](#).⁴ NIOSH activities in this area of research began in 1997, when it took responsibility for the Health and Safety Research Programs, which had been part of the U.S. Bureau of Mines.⁵

Coal mining is a relatively dangerous industry. Employees in coal mining are more likely to be killed or to incur a nonfatal injury or illness, and their injuries are more likely to be severe, than workers in private industry as a whole. This article reports on 2006 data from two BLS programs: the [Survey of Occupational Injuries and Illnesses \(SOII\)](#) and the [Census of Fatal Occupational Injuries \(CFOI\)](#).

Nonfatal Injuries And Illnesses⁶

Data on mining are provided to the BLS by the [Mine Safety and Health Administration](#), which has different recordkeeping requirements than the [Occupational Safety and Health Administration \(OSHA\)](#).⁷ Although these differences mean there is some loss of comparability between the injuries and illnesses data for mining and those for other industries, comparing coal mining with other industries nevertheless yields some interesting results.

In 2006, the coal mining industry reported 4,600 injuries and illnesses--a rate of 4.8 per 100 full-time workers. This is slightly higher than the rate of 4.4 in private industry as a whole. Bituminous coal and lignite surface mining, on the other hand, has a lower rate than all private industry, at 2.3. Bituminous coal underground mining has a rate of 7.1 per 100 full-time workers, and anthracite mining has a rate of 5.0 per 100 full-time workers.

More serious injuries and illnesses generally require days away from work to give the worker time to recuperate. The incidence rate for cases involving days away from work in coal mining was 294.8 per 10,000 full-time workers in 2006, while

the rate for all private industry was 127.8. Bituminous coal and lignite surface mining had a similar rate to all private industry, at 131.4. The rate in bituminous coal underground mining was 444.7, and the rate in anthracite mining was 358.6 per 10,000 full-time workers. (See chart 1.)

The median number of days away from work due to injury or illness is a measure of the severity of such cases. In coal mining, the median number of days away from work was 29 in 2006, compared with 7 days for all private industry. The median number of days away from work in the bituminous coal and lignite surface mining industry was 24 days, while in the bituminous coal underground mining industry the median was 31 days. In nearly every case, the nature of the injury and the event or exposure is more severe when it occurs in underground mines as opposed to surface mines. (See table 1 and table 2.)

Fractures occurred in the coal mining industry at a rate of 50.4 per 10,000 full-time workers in 2006, compared with a rate of 10.2 for workers in all private industry. In bituminous underground mining, the rate was 79.9. The rate of injuries in the coal mining industry with machines as the source was 36.9, which is dramatically higher than the rate (8.4) for all private industry. The rate of injuries in cases in which the source was chemicals or chemical products was 39.3 per 10,000 full-time workers, while the comparable rate for all private industry was 2.1. (In the BLS safety and health statistics programs, coal is classified as a chemical.) Of the 350 cases in which coal was the source of the injury, the majority (230 cases) involved workers who were struck by falling coal.

Nearly all of the injuries or illnesses in this industry group affected workers whose occupations dealt directly with coal: construction and extractive occupations suffered 62 percent of the injuries and illnesses; transportation and material moving occupations had 21 percent; and installation, maintenance, and repair occupations had 13 percent. Three specific occupations accounted for nearly 50 percent of all coal mining injuries: mine roof bolters, other extraction workers, and industrial machinery mechanics. Three other material moving occupations made up nearly 15 percent of the injuries. These were conveyor operators and tenders, excavating and loading machine and dragline operators, and shuttle car operators.

Table 3 shows the number of injuries in the coal mining industry to workers in extractive occupations by nature of injury. The share of injuries that involves sprains or strains is roughly the same as in all private industry (around 40 percent), but fractures make up a much larger share of the injuries in mining (20 percent) than they do in all private industry (8 percent).

Over the past 4 years, coal mining and two of its three constituent industries--bituminous coal and lignite surface mining and bituminous coal underground mining--experienced declines in their rates of injuries and illnesses. The rate for anthracite mining declined from 2003 to 2005, but then rose from 2005 to 2006. Because it is a very small industry, anthracite mining is subject to larger swings in its injury and illness rate. (See chart 2.)

Fatal Injuries⁸

The fatality rate for the entire mining industry, including oil and gas extraction, was 28.1 per 100,000 workers in 2006. The number of fatalities in the industry increased by 21 percent over the year, from 159 fatalities in 2005 to 192 fatalities in 2006.⁹ In the private mining industry, excluding oil and gas extraction, there were 67 fatalities in 2006, 47 of which were in coal mining, which averaged 25 fatalities per year from 2003 to 2005. (See chart 3.) Incidents involving multiple fatalities (including the Sago incident) accounted for 21 of the 47 coal mining fatalities in 2006.

The fatality rate for coal mining in 2006 was 49.5 fatalities per 100,000 workers, up from a rate of 26.8 recorded in 2005. The fatality rate for total private industry workers in 2006 was 4.3. (See chart 4.)

Of the 47 coal mining fatalities recorded in 2006, 20 (43 percent) were due to fires and explosions, 16 (34 percent) resulted from contact with objects and equipment, and 9 (19 percent) were transportation incidents. (See chart 5.) There were no fatalities involving fires or explosions published in 2005.¹⁰ In 2005, 55 percent of the fatalities were from contact with objects and equipment and 36 percent were transportation incidents.

West Virginia had the most coal mining fatalities in 2006, accounting for nearly half (49 percent) of all fatal injuries in the industry. West Virginia was followed by Kentucky, which accounted for 30 percent of the coal mining fatalities in 2006. In

2005, Kentucky accounted for 36 percent of all coal mining fatalities, West Virginia accounted for 23 percent, and Pennsylvania accounted for 18 percent. These three States also had the highest proportions of total coal mining employment in 2005.¹¹

In 2006, 33 of the 47 fatalities in coal mining (70 percent) were in bituminous coal underground mining. (See chart 6.) Fires and explosions were the most frequent fatal event in this industry, with 17 fatalities, followed by 11 cases involving contact with objects and equipment and 5 transportation incidents. The number of fatalities (33) in bituminous coal underground mining in 2006 was almost 5 times the number of fatalities (7) reported in 2005. Contact with objects and equipment was the leading fatal event in this industry, accounting for 57 percent of all fatalities in 2006.

Of the 14 fatalities that occurred in the other coal mining industries in 2006, there were 5 recorded in bituminous coal and lignite surface mining in 2006. The remaining 9 coal mining fatalities were either in anthracite mining or coal mining that could not be specified further. Among these 14 fatalities, the two most frequent fatal events were contact with objects and equipment (5 fatalities) and transportation incidents (4 fatalities).

As shown in chart 7, nearly all of the fatal injuries suffered by workers in coal mining in 2006 were the result of multiple traumatic injuries (49 percent) or other traumatic injuries (45 percent). Among the other traumatic injuries, 71 percent were from poisonings or toxic effects--the Sago mine disaster alone accounted for 80 percent of such cases.

In 2005, the nature of fatal injuries was quite different. Fifty-five percent of the fatalities in 2005 were multiple traumatic injuries, and 41 percent were other traumatic injuries. However, of the other traumatic injuries, none came from poisonings or toxic effects, while 56 percent came from internal injuries, and 33 percent came from asphyxiations and suffocations.

The principal source of the fatal injuries in coal mining in 2006 was chemicals and chemical products. Chemicals and chemical products, which includes coal, accounted for 17 fatalities in 2006 (12 of which were from the Sago mine disaster), but none in 2005. In 2005, the top source of fatal injuries was vehicles, with 9 fatalities. The second most common source in 2005 and 2006 was structures and surfaces. These accounted for 11 of the fatalities in 2006 and 6 of the fatalities in 2005. Machinery was the source of 7 fatalities in 2006 and 4 fatalities in 2005. Chemicals and chemical products was the secondary source of 18 of the fatalities in 2006, but none in 2005.

Workers aged 45 to 54 years old accounted for 40 percent of all coal mining fatalities in 2006. As shown in table 4, the majority (72 percent) of the fatalities that occurred in the coal mining industry in 2006 came in four occupations; among these four occupations, mining roof bolters experienced the most fatalities (15), accounting for 32 percent of coal mining fatalities.

Conclusion

Over the past 4 years, there has been a decline in the incidence rate of injuries and illnesses in the coal mining industry. The same cannot be said for fatalities in the industry; after a decrease from 2004 to 2005, the fatality rate increased in 2006. Many of the coal mining fatalities in 2006 were multiple-fatality incidents. The coal mining industry has higher incidence rates for both fatalities and injuries and illnesses than the total private sector. Workers in the coal mining industry are much more likely to suffer an injury requiring days away from work, and these injuries require a median of 29 days away from work to recover, much higher than the 7 days needed in all private industry.

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Notes

¹ See "Historical Data on Mine Disasters in the United States," Mine Safety and Health Administration (MSHA), on the Internet at <http://www.msha.gov/MSHAINFO/FactSheets/MSHAFCT8.HTM> (visited January 21, 2008).

2 "Mine Improvement and New Emergency Response (MINER) Act of 2006," on the Internet at <http://www.msha.gov/MinerAct/MineActAmmendmentSummary.asp> (visited January 21, 2008).

3 See the [BLS NAICS page](http://www.bls.gov/bls/naics.htm) at <http://www.bls.gov/bls/naics.htm>.

4 For more information on MSHA, see the U.S. Department of Labor [Mine Safety and Health Administration](http://www.msha.gov) website at <http://www.msha.gov>; for more information on NIOSH, see the U.S. Department of Health and Human Services [National Institute for Occupational Safety and Health](http://www.cdc.gov/NIOSH/) website at <http://www.cdc.gov/NIOSH/>.

5 See "History of the Mining Program," National Institute of Occupational Safety and Health (NIOSH), on the Internet at <http://www.cdc.gov/niosh/mining/aboutus/history.htm> (visited January 21, 2008).

6 All of the figures in the nonfatal injuries and illness section are for private industry only--all government workers (Federal, State, and local) and self-employed workers are excluded.

7 MSHA's recordkeeping guidelines do not reflect the changes in recordkeeping the Occupational Safety and Health Administration (OSHA) made to its recordkeeping requirements in 2002. OSHA and MSHA guidelines differ on counting days away from work and recordability of recurrence of injuries. More details on OSHA recordkeeping can be found at <http://www.osha.gov/recordkeeping/index.html>. More details on MSHA recordkeeping can be found at <http://www.msha.gov/regsinf2.htm>.

8 Numbers of fatal injuries are for private industry unless otherwise noted. However, fatality rates are for all ownership types (private industry, government, and self-employment).

9 These figures are for all industry ownership types (private, government, and self-employed).

10 No data reported or data do not meet publication criteria.

11 In 2005, West Virginia employed 17,374 coal mining workers, Kentucky employed 15,409 coal mining workers, and Pennsylvania employed 7,415 coal mining workers. Employment figures are from the [BLS Quarterly Census of Employment and Wages \(QCEW\)](http://www.bls.gov/cew/). The QCEW page of the BLS website is located at <http://www.bls.gov/cew/home.htm>.

Table 1. Number, incidence rate(1), and median days away from work(2) of occupational injuries and illnesses involving days away from work(3) in all private industry, bituminous coal and ignite surface mining, and bituminous coal underground mining, by selected nature in private industry for All United States, 2006

| Nature of the injury or illness | Total, all private industry | | | 212111 Bituminous coal and lignite surface mining(4) | | | 212112 Bituminous coal underground mining(4) | | |
|---|-----------------------------|----------------|-------------|--|----------------|-------------|--|----------------|-------------|
| | Total Cases | Incidence Rate | Median Days | Total Cases | Incidence Rate | Median Days | Total Cases | Incidence Rate | Median Days |
| All Selected Natures | 1,183,500 | 127.8 | 7 | 590 | 131.4 | 24 | 2,160 | 444.7 | 31 |
| 0 Traumatic Injuries and Disorders | 1,103,270 | 119.2 | 7 | 530 | 118.7 | 23 | 2,020 | 414.8 | 30 |
| 01 Traumatic injuries to bones- nerves- spinal cord | 104,470 | 11.3 | 29 | 90 | 19.4 | 49 | 400 | 82.6 | 51 |
| 012 Fractures | 94,110 | 10.2 | 28 | 90 | 18.9 | 51 | 390 | 79.9 | 51 |
| 02 Traumatic injuries to muscles- tendons- ligaments- joints- etc. | 477,360 | 51.6 | 8 | 260 | 57.4 | 20 | 930 | 191.2 | 33 |
| 021 Sprains- strains- tears | 472,740 | 51.1 | 8 | 260 | 57.4 | 20 | 930 | 191.2 | 33 |
| 03 Open wounds | 130,800 | 14.1 | 4 | 50 | 10.9 | 10 | 200 | 41.6 | 12 |
| 031 Amputations | 7,990 | 0.9 | 22 | - | - | - | 20 | 4.1 | 62 |
| 034 Cuts- lacerations | 99,460 | 10.7 | 4 | 40 | 8.7 | 5 | 140 | 29.4 | 12 |
| 037 Punctures- except bites | 15,750 | 1.7 | 3 | - | - | - | 40 | 8.0 | 8 |
| 04 Surface wounds and bruises | 125,360 | 13.5 | 3 | 60 | 12.2 | 4 | 310 | 64.4 | 12 |
| 043 Bruises- contusions | 101,260 | 10.9 | 4 | 50 | 10.9 | 5 | 300 | 61.1 | 13 |
| 05 Burns | 26,050 | 2.8 | 4 | - | - | - | 30 | 5.1 | 6 |

Footnotes:

(1) Incidence rates represent the number of injuries and illnesses per 10,000 full-time workers and were calculated as: (N/EH) X 20,000,000 where,

N = number of injuries and illnesses,
 EH = total hours worked by all employees during the calendar year,
 20,000,000 = base for 10,000 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

(2) Median days away from work is the measure used to summarize the varying lengths of absences from work among the cases with days away from work. Half the cases involved more days and half involved less days than a specified median. Median days away from work are represented in actual values.

(3) Days away from work cases include those which result in days away from work with or without restricted work activity.

(4) Data for mining operators in this industry are provided to BLS by the Mine Safety and Health Administration, U.S. Department of Labor. Independent mining contractors are excluded. These data do not reflect the changes the Occupational Safety and Health Administration made to its recordkeeping requirements effective January 1, 2002; therefore estimates for these industries are not comparable to estimates in other industries.

NOTE: Dashes indicate data that do not meet publication guidelines or data for incidence rates less than .05 per 10,000 full-time workers. The scientifically selected probability sample used was one of many possible samples, each of which could have produced different estimates. A measure of sampling variability for each estimate is available upon request.

SOURCE: Bureau of Labor Statistics, U.S. Department of Labor

| Nature of the injury or illness | Total, all private industry | | | 212111 Bituminous coal and lignite surface mining(4) | | | 212112 Bituminous coal underground mining(4) | | |
|---|-----------------------------|----------------|-------------|--|----------------|-------------|--|----------------|-------------|
| | Total Cases | Incidence Rate | Median Days | Total Cases | Incidence Rate | Median Days | Total Cases | Incidence Rate | Median Days |
| 08 Multiple traumatic injuries and disorders | 45,890 | 5.0 | 10 | 20 | 4.0 | 43 | 40 | 8.6 | 21 |
| 080 Multiple traumatic injuries and disorders-unspecified | 2,830 | 0.3 | 24 | 20 | 3.8 | 43 | 40 | 8.6 | 21 |
| 09 Other traumatic injuries and disorders | 142,080 | 15.3 | 7 | 50 | 10.9 | 53 | 100 | 19.6 | 36 |
| 097 Nonspecified injuries and disorders | 131,180 | 14.2 | 7 | 40 | 9.4 | 78 | 90 | 17.9 | 35 |
| 0971 Crushing injuries | 15,410 | 1.7 | 10 | - | - | - | 40 | 7.4 | 22 |
| 0972 Back pain- hurt back | 35,330 | 3.8 | 7 | - | - | - | 20 | 4.1 | 95 |
| 0973 Soreness- pain-hurt- except the back | 69,720 | 7.5 | 7 | - | - | - | 30 | 5.4 | 37 |
| 1 Systemic Diseases and Disorders | 57,560 | 6.2 | 15 | 40 | 7.8 | 30 | 110 | 23.5 | 36 |
| 15 Digestive system diseases and disorders | 18,790 | 2.0 | 24 | - | - | - | 50 | 11.1 | 31 |
| 153 Hernia | 18,720 | 2.0 | 24 | - | - | - | 50 | 11.1 | 31 |
| 1530 Hernia-unspecified | 7,530 | 0.8 | 24 | - | - | - | 50 | 11.1 | 31 |
| 17 Musculoskeletal system and connective tissue diseases and disorders | 11,460 | 1.2 | 14 | - | - | - | 40 | 9.1 | 40 |

Footnotes:

(1) Incidence rates represent the number of injuries and illnesses per 10,000 full-time workers and were calculated as: $(N/EH) \times 20,000,000$ where,

N = number of injuries and illnesses,

EH = total hours worked by all employees during the calendar year,

20,000,000 = base for 10,000 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

(2) Median days away from work is the measure used to summarize the varying lengths of absences from work among the cases with days away from work. Half the cases involved more days and half involved less days than a specified median. Median days away from work are represented in actual values.

(3) Days away from work cases include those which result in days away from work with or without restricted work activity.

(4) Data for mining operators in this industry are provided to BLS by the Mine Safety and Health Administration, U.S. Department of Labor. Independent mining contractors are excluded. These data do not reflect the changes the Occupational Safety and Health Administration made to its recordkeeping requirements effective January 1, 2002; therefore estimates for these industries are not comparable to estimates in other industries.

NOTE: Dashes indicate data that do not meet publication guidelines or data for incidence rates less than .05 per 10,000 full-time workers. The scientifically selected probability sample used was one of many possible samples, each of which could have produced different estimates. A measure of sampling variability for each estimate is available upon request.

SOURCE: Bureau of Labor Statistics, U.S. Department of Labor

| Nature of the injury or illness | Total, all private industry | | | 212111 Bituminous coal and lignite surface mining(4) | | | 212112 Bituminous coal underground mining(4) | | |
|---|-----------------------------|----------------|-------------|--|----------------|-------------|--|----------------|-------------|
| | Total Cases | Incidence Rate | Median Days | Total Cases | Incidence Rate | Median Days | Total Cases | Incidence Rate | Median Days |
| 170 Musculoskeletal system and connective tissue diseases and disorders- unspecified | 160 | - | 30 | - | - | - | 40 | 9.1 | 40 |
| 9999 Nonclassifiable | 6,010 | 0.6 | 6 | 20 | 4.9 | 12 | 30 | 6.4 | 77 |

Footnotes:

(1) Incidence rates represent the number of injuries and illnesses per 10,000 full-time workers and were calculated as: $(N/EH) \times 20,000,000$ where,

N = number of injuries and illnesses,

EH = total hours worked by all employees during the calendar year,

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SOURCE: Bureau of Labor Statistics, U.S. Department of Labor

Table 2. Number, incidence rate(1), and median days away from work(2) of occupational injuries and illnesses involving days away from work(3) in all private industry, bituminous coal and lignite surface mining, and bituminous coal underground mining, by selected events in private industry for All United State, 2006

| Event or exposure of the injury or illness | Total, all private industry | | | 212111 Bituminous coal and lignite surface mining(4) | | | 212112 Bituminous coal underground mining(4) | | |
|---|-----------------------------|----------------|-------------|--|----------------|-------------|--|----------------|-------------|
| | Total Cases | Incidence Rate | Median Days | Total Cases | Incidence Rate | Median Days | Total Cases | Incidence Rate | Median Days |
| All Selected Events | 1,183,500 | 127.8 | 7 | 590 | 131.4 | 24 | 2,160 | 444.7 | 31 |
| 0 Contact with objects and equipment | 335,460 | 36.2 | 5 | 240 | 53.4 | 19 | 1,110 | 229.1 | 28 |
| 01 Struck against object | 85,710 | 9.3 | 5 | 130 | 29.6 | 20 | 240 | 50.2 | 25 |
| 012 Struck against stationary object | 49,000 | 5.3 | 5 | 30 | 7.3 | 7 | 140 | 29.0 | 23 |
| 013 Struck against moving object | 9,010 | 1.0 | 8 | 100 | 22.3 | 28 | 100 | 21.2 | 32 |
| 02 Struck by object | 164,670 | 17.8 | 4 | 70 | 16.0 | 12 | 640 | 130.9 | 26 |
| 020 Struck by object- unspecified | 6,050 | 0.7 | 5 | 30 | 5.8 | 10 | 200 | 41.6 | 14 |
| 021 Struck by falling object | 58,010 | 6.3 | 6 | 30 | 5.6 | 31 | 360 | 74.5 | 34 |
| 022 Struck by flying object | 19,320 | 2.1 | 3 | 20 | 4.2 | 8 | 50 | 9.7 | 12 |
| 0220 Struck by flying object- unspecified | 2,060 | 0.2 | 2 | 20 | 4.2 | 8 | 50 | 9.5 | 12 |
| 024 Struck by rolling-sliding objects on floor or ground level | 4,090 | 0.4 | 6 | - | - | - | 20 | 4.9 | 34 |

Footnotes:

(1) Incidence rates represent the number of injuries and illnesses per 10,000 full-time workers and were calculated as: $(N/EH) \times 20,000,000$ where,

N = number of injuries and illnesses,
 EH = total hours worked by all employees during the calendar year,
 20,000,000 = base for 10,000 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

(2) Median days away from work is the measure used to summarize the varying lengths of absences from work among the cases with days away from work. Half the cases involved more days and half involved less days than a specified median. Median days away from work are represented in actual values.

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SOURCE: Bureau of Labor Statistics, U.S. Department of Labor

| Event or exposure of the injury or illness | Total, all private industry | | | 212111 Bituminous coal and lignite surface mining(4) | | | 212112 Bituminous coal underground mining(4) | | |
|---|-----------------------------|----------------|-------------|--|----------------|-------------|--|----------------|-------------|
| | Total Cases | Incidence Rate | Median Days | Total Cases | Incidence Rate | Median Days | Total Cases | Incidence Rate | Median Days |
| 03 Caught in or compressed by equipment or objects | 58,760 | 6.3 | 8 | 30 | 7.6 | 24 | 210 | 44.1 | 36 |
| 030 Caught in or compressed by equipment or objects- unspecified | 7,640 | 0.8 | 8 | 20 | 5.1 | 23 | 150 | 30.7 | 36 |
| 039 Caught in or compressed by equipment or objects- n.e.c. | 18,140 | 2.0 | 7 | - | - | - | 50 | 9.9 | 32 |
| 1 Falls | 234,450 | 25.3 | 10 | 150 | 32.5 | 34 | 260 | 52.5 | 43 |
| 11 Fall to lower level | 74,280 | 8.0 | 14 | 90 | 19.1 | 43 | 50 | 9.7 | 36 |
| 118 Fall from nonmoving vehicle | 13,270 | 1.4 | 21 | 70 | 16.5 | 43 | 30 | 5.4 | 30 |
| 13 Fall on same level | 151,750 | 16.4 | 9 | 60 | 13.4 | 25 | 210 | 42.6 | 44 |
| 131 Fall to floor-walkway- or other surface | 129,480 | 14.0 | 10 | 30 | 7.1 | 22 | 130 | 27.2 | 67 |
| 132 Fall onto or against objects | 18,560 | 2.0 | 7 | 30 | 6.2 | 30 | 70 | 15.2 | 34 |
| 2 Bodily reaction and exertion | 461,530 | 49.8 | 9 | 160 | 36.3 | 26 | 690 | 142.7 | 32 |
| 22 Overexertion | 284,910 | 30.8 | 9 | 150 | 34.1 | 26 | 680 | 139.2 | 32 |
| 221 Overexertion in lifting | 150,990 | 16.3 | 8 | 30 | 6.0 | 21 | 190 | 39.3 | 22 |

Footnotes:

(1) Incidence rates represent the number of injuries and illnesses per 10,000 full-time workers and were calculated as: (N/EH) X 20,000,000 where,

N = number of injuries and illnesses,
 EH = total hours worked by all employees during the calendar year,
 20,000,000 = base for 10,000 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

(2) Median days away from work is the measure used to summarize the varying lengths of absences from work among the cases with days away from work. Half the cases involved more days and half involved less days than a specified median. Median days away from work are represented in actual values.

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SOURCE: Bureau of Labor Statistics, U.S. Department of Labor

| Event or exposure of the injury or illness | Total, all private industry | | | 212111 Bituminous coal and lignite surface mining(4) | | | 212112 Bituminous coal underground mining(4) | | |
|---|-----------------------------|----------------|-------------|--|----------------|-------------|--|----------------|-------------|
| | Total Cases | Incidence Rate | Median Days | Total Cases | Incidence Rate | Median Days | Total Cases | Incidence Rate | Median Days |
| 222 Overexertion in pulling or pushing objects | 48,700 | 5.3 | 10 | - | - | - | 90 | 17.5 | 32 |
| 229 Overexertion-n.e.c. | 12,340 | 1.3 | 9 | 110 | 24.3 | 29 | 390 | 79.7 | 38 |
| 3 Exposure to harmful substances or environments | 56,510 | 6.1 | 3 | 30 | 5.6 | 4 | 40 | 8.2 | 8 |
| 34 Exposure to caustic-noxious- or allergenic substances | 28,940 | 3.1 | 3 | - | - | - | 20 | 3.1 | 5 |
| 4 Transportation accidents | 56,170 | 6.1 | 10 | - | - | - | 20 | 4.5 | 58 |
| 43 Pedestrian-nonpassenger struck by vehicle- mobile equipment | 8,400 | 0.9 | 18 | - | - | - | 20 | 4.3 | 64 |
| 9999 Nonclassifiable | 14,480 | 1.6 | 8 | - | - | - | 40 | 7.6 | 64 |

Footnotes:

(1) Incidence rates represent the number of injuries and illnesses per 10,000 full-time workers and were calculated as: (N/EH) X 20,000,000 where,

N = number of injuries and illnesses,
 EH = total hours worked by all employees during the calendar year,
 20,000,000 = base for 10,000 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

(2) Median days away from work is the measure used to summarize the varying lengths of absences from work among the cases with days away from work. Half the cases involved more days and half involved less days than a specified median. Median days away from work are represented in actual values.

(3) Days away from work cases include those which result in days away from work with or without restricted work activity.

(4) Data for mining operators in this industry are provided to BLS by the Mine Safety and Health Administration, U.S. Department of Labor. Independent mining contractors are excluded. These data do not reflect the changes the Occupational Safety and Health Administration made to its recordkeeping requirements effective January 1, 2002; therefore estimates for these industries are not comparable to estimates in other industries.

NOTE: Dashes indicate data that do not meet publication guidelines or data for incidence rates less than .05 per 10,000 full-time workers. The scientifically selected probability sample used was one of many possible samples, each of which could have produced different estimates. A measure of sampling variability for each estimate is available upon request.

SOURCE: Bureau of Labor Statistics, U.S. Department of Labor

Table 3. Number and median days away from work(1) of occupational injuries and illnesses involving days away from work(2) to Extraction Workers in Coal Mining(3) by selected natures in private industry for All United States, 2006

| Nature of the injury or illness | Total Cases | Median Days |
|---|-------------|-------------|
| All Selected Natures | 1,430 | 29 |
| 0 Traumatic Injuries and Disorders | 1,340 | 28 |
| 01 Traumatic injuries to bones- nerves- spinal cord | 290 | 48 |
| 012 Fractures | 280 | 48 |
| 02 Traumatic injuries to muscles- tendons- ligaments- joints- etc. | 570 | 30 |
| 021 Sprains- strains- tears | 570 | 30 |
| 03 Open wounds | 140 | 11 |
| 031 Amputations | 20 | 62 |
| 034 Cuts- lacerations | 100 | 9 |
| 037 Punctures- except bites | 30 | 10 |
| 04 Surface wounds and bruises | 200 | 9 |
| 043 Bruises- contusions | 190 | 11 |
| 05 Burns | 20 | 7 |
| 08 Multiple traumatic injuries and disorders | 40 | 65 |
| 080 Multiple traumatic injuries and disorders- unspecified | 40 | 65 |
| 09 Other traumatic injuries and disorders | 70 | 34 |
| 097 Nonspecified injuries and disorders | 60 | 34 |
| 0971 Crushing injuries | 30 | 37 |
| 0973 Soreness- pain- hurt- except the back | 20 | 30 |
| 1 Systemic Diseases and Disorders | 70 | 37 |
| 15 Digestive system diseases and disorders | 30 | 38 |
| 153 Hernia | 30 | 38 |
| 1530 Hernia- unspecified | 30 | 38 |
| 17 Musculoskeletal system and connective tissue diseases and disorders | 30 | 40 |
| 170 Musculoskeletal system and connective tissue diseases and disorders- unspecified | 30 | 40 |
| 9999 Nonclassifiable | 20 | 41 |

Footnotes:

- (1) Median days away from work is the measure used to summarize the varying lengths of absences from work among the cases with days away from work. Half the cases involved more days and half involved less days than a specified median. Median days away from work are represented in actual values.
- (2) Days away from work cases include those which result in days away from work with or without restricted work activity.
- (3) Data for mining operators in this industry are provided to BLS by the Mine Safety and Health Administration, U.S. Department of Labor. Independent mining contractors are excluded. These data do not reflect the changes the Occupational Safety and Health Administration made to its recordkeeping requirements effective January 1, 2002; therefore estimates for these industries are not comparable to estimates in other industries.

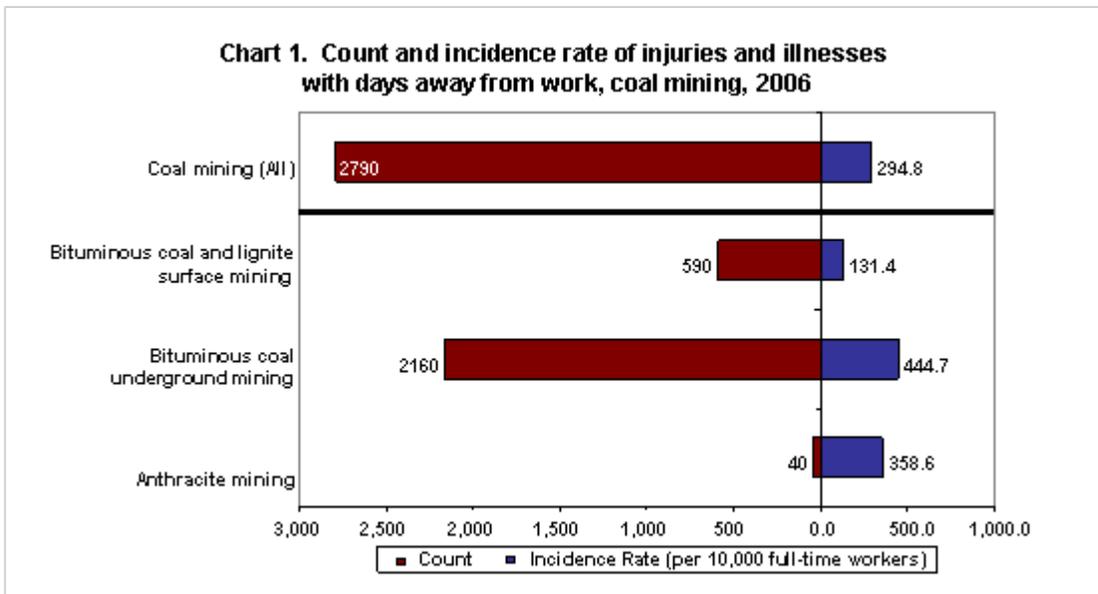
NOTE: Because of rounding and data exclusion of nonclassifiable responses, data may not sum to the totals. Dashes indicate data that do not meet publication guidelines. The scientifically selected probability sample used was one of many possible samples, each of which could have produced different estimates. A measure of sampling variability for each estimate is available upon request.

SOURCE: Bureau of Labor Statistics, U.S. Department of Labor, January 22, 2008

Table 4. Four Most Frequent Occupations in Coal Mining Fatalities

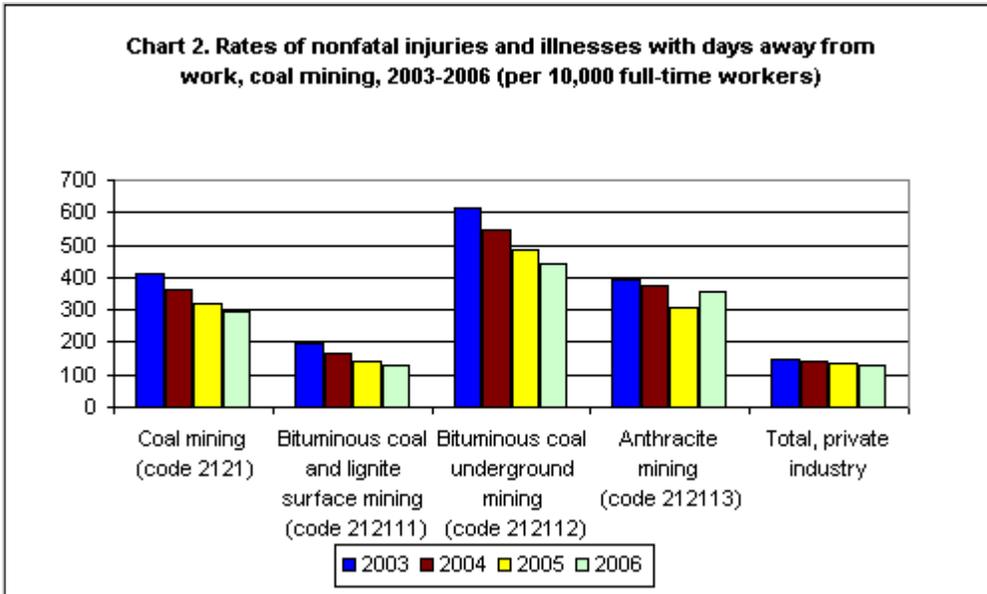
| Occupation | Fatalities |
|---|------------|
| Roof Bolters, Mining | 15 |
| Mining Machine Operators, All Other | 9 |
| First-Line Supervisors/Managers of Construction Trades and Extraction Workers | 5 |
| Electricians | 5 |

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 2006



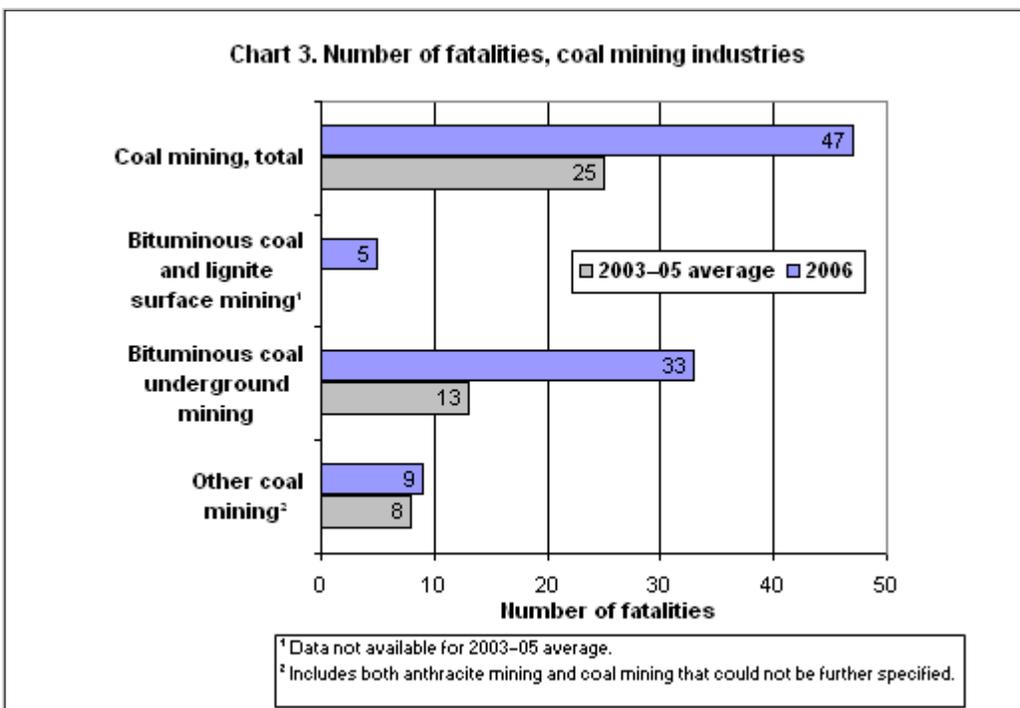
Data for Chart 1. Count and incidence rate of injuries and illnesses with days away from work, coal mining, 2006

| | Incidence Rate (per 10,000 full-time workers) | Count |
|--|---|-------|
| Anthracite mining (code 212113) | 358.6 | 40 |
| Bituminous coal underground mining (code 212112) | 444.7 | 2160 |
| Bituminous coal and lignite surface mining (code 212111) | 131.4 | 590 |
| Coal mining (code 2121) | 294.8 | 2790 |



Data for Chart 2. Rates of nonfatal injuries and illnesses with days away from work, coal mining 2003-2006 (per 10,000 full-time workers)

| | 2003 | 2004 | 2005 | 2006 |
|--|-------|-------|-------|-------|
| Coal mining (code 2121) | 410.0 | 359.9 | 320.5 | 294.8 |
| Bituminous coal and lignite surface mining (code 212111) | 197.8 | 165.0 | 143.5 | 131.4 |
| Bituminous coal underground mining (code 212112) | 614.8 | 543.8 | 486.7 | 444.7 |
| Anthracite mining (code 212113) | 394.0 | 376.3 | 307.2 | 358.6 |
| Total, private industry | 150.0 | 141.3 | 135.7 | 127.8 |



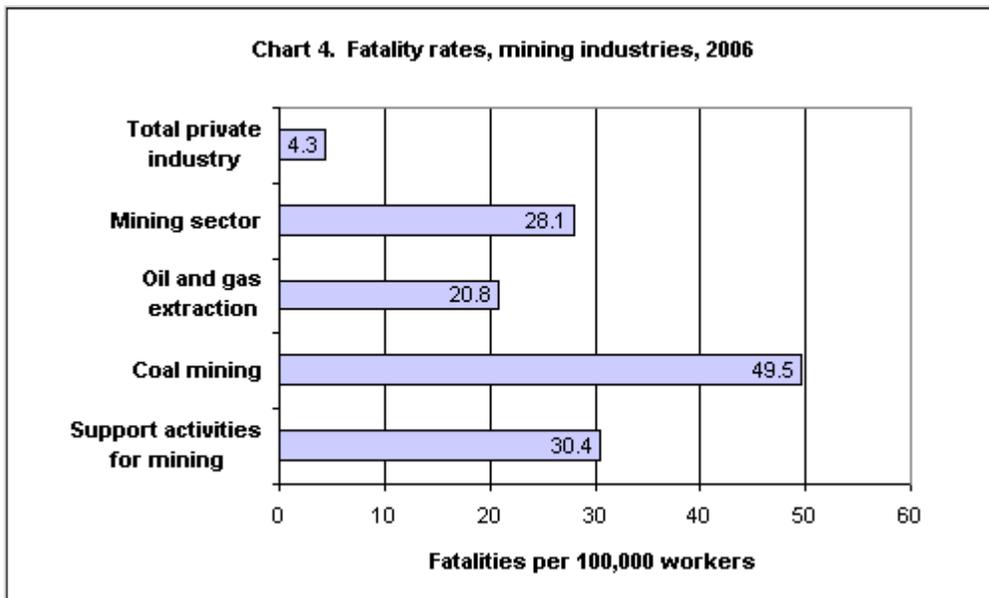
Data for Chart 3. Number of fatalities, coal mining industries

| | 2006 | 2003-2005 average |
|---|------|-------------------|
| Other coal mining | 9 | 8 |
| Bituminous coal underground mining | 33 | 13 |
| Bituminous coal and lignite surface mining* | 5 | |
| Coal mining, total | 47 | 25 |

* Data not available

Note: The "Other coal mining" category includes both anthracite mining and coal mining that could not be specified any further.

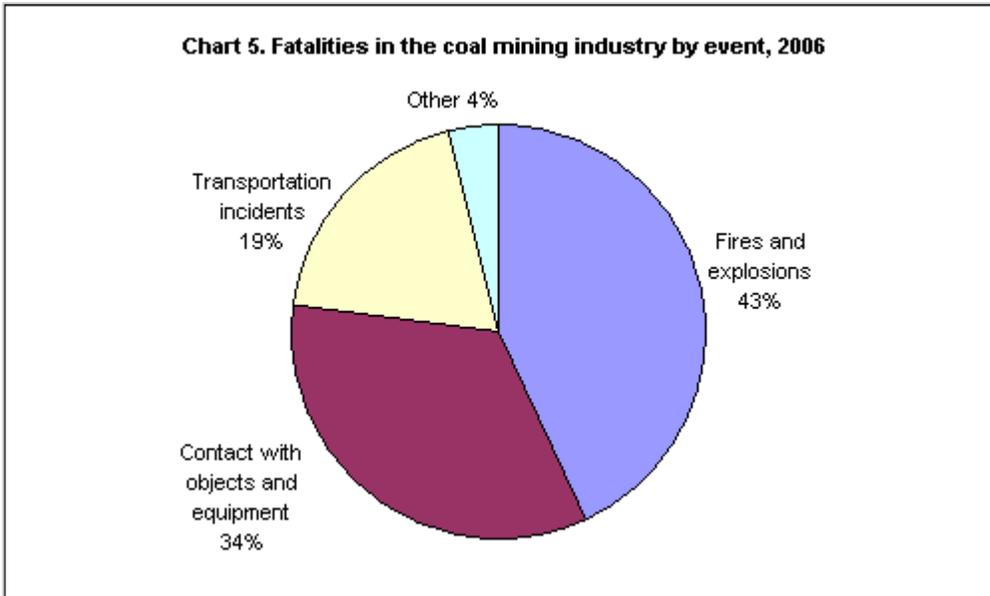
SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 2006



Data for Chart 4. Fatality rates, mining industries, 2006

| Support activities for mining | 30.4 |
|-------------------------------|------|
| Coal mining | 49.5 |
| Oil and gas extraction | 20.8 |
| Mining sector | 28.1 |
| Total private industry | 4.3 |

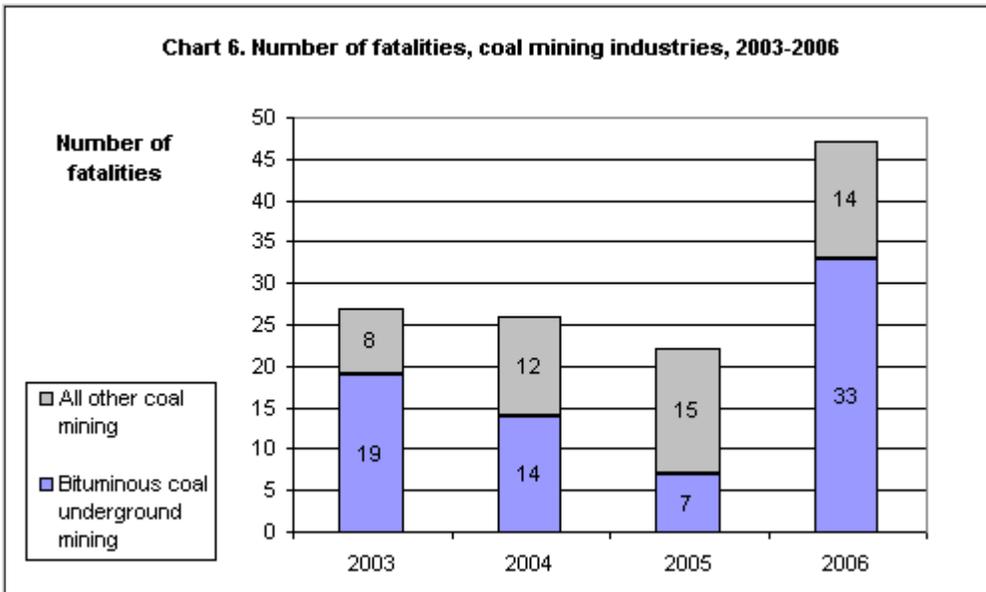
SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 2006



Data for Chart 5. Fatalities in the coal mining industry by event, 2006

| | |
|---|-----------|
| Fires and explosions | 43 |
| Contact with objects and equipment | 34 |
| Transportation incidents | 19 |
| Other | 4 |

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 2006

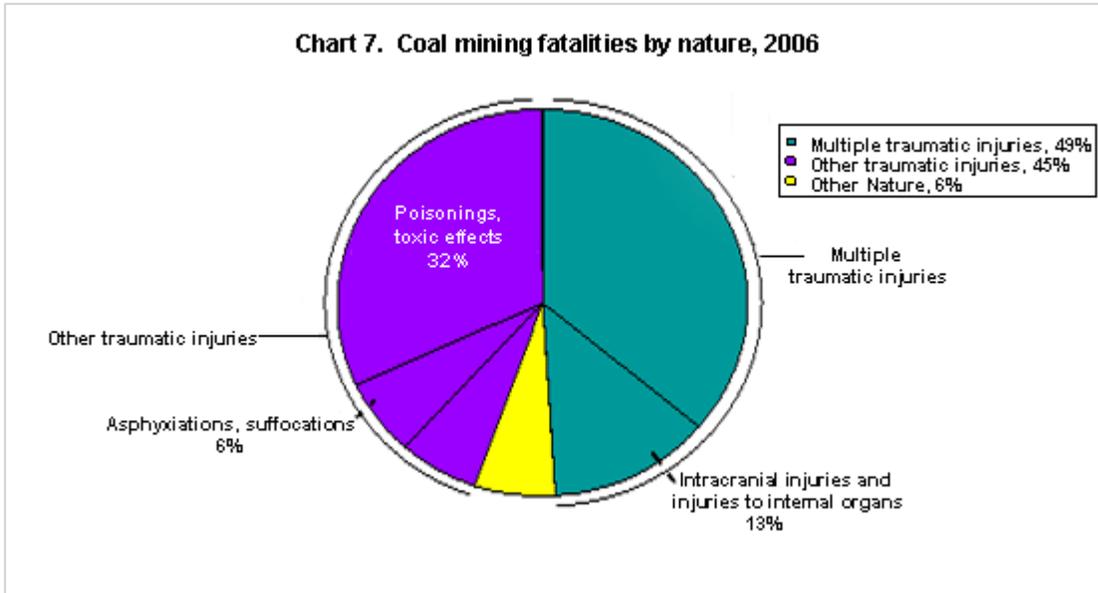


Data for Chart 6. Number of fatalities, coal mining industries, 2003-2006

| Industry | 2003 | 2004 | 2005 | 2006 |
|------------------------------------|------|------|------|------|
| Bituminous coal underground mining | 19 | 14 | 7 | 33 |
| All other coal mining | 8 | 12 | 15 | 14 |

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 2006

Chart 7. Coal mining fatalities by nature, 2006



Data for Chart 7. Coal mining fatalities by nature, 2006

| | Percent |
|---|---------|
| Multiple traumatic injuries | 49 |
| Intracranial injuries and injuries to internal organs | 13 |
| Other traumatic injuries | 45 |
| Poisonings, toxic effects | 32 |
| Asphyxiations, suffocations | 6 |
| Other Nature | 6 |

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 2006