



## MINING RESEARCH

### WHAT IS THE PUBLIC HEALTH PROBLEM?

- In 2002, coal mining had a worker fatality rate that was more than 7 times the national average.
- The median number of lost days per mining injury is nearly 3 times higher than that observed for all private industry nationally.
- From 1990 to 2000, black lung disease was an underlying or contributing cause of approximately 16,000 deaths in the United States, including 950 deaths in 2000.
- Nearly one quarter of all deaths from silicosis are attributed to mining.
- Approximately 90% of miners are hearing impaired by age 65.
- From 1995 to 2002, there were 142 ground support and 230 powered haulage-related fatalities in mining.

### WHAT HAS NIOSH ACCOMPLISHED?

The National Institute for Occupational Safety and Health (NIOSH) conducts a research program to address safety and health issues among miners that focuses on specific areas identified as critical by constituents and surveillance data; such areas include hearing loss prevention, dust monitoring and control, injury prevention, and rock fall prevention.

#### *Examples of program in action:*

- NIOSH is partnering with several surface and underground mines to assess ergonomic risk factors in mining. Ergonomic interventions are being developed, implemented, and evaluated to prevent slips and falls while mounting and dismounting vehicles and to prevent jolting and jarring injuries to mobile vehicle operators.
- To reduce worker exposure to coal mine dust, NIOSH in partnership with manufacturers, labor, and industry, developed a Personal Dust Monitor that provides real-time exposure data during a shift to allow for corrective action before overexposures occur.
- In partnership with manufacturers, NIOSH developed five innovative roof support systems that, unlike the traditionally used heavy and bulky timber blocks, can be extended to different lengths to provide controlled, sustainable roof support at a range of operating heights, while also reducing material handling efforts.
- NIOSH developed a hearing loss simulator that demonstrates the life-changing effects of noise-induced hearing loss and helps motivate workers to take simple preventive actions.

### WHAT ARE THE NEXT STEPS?

The mining sector poses many occupational safety and health challenges for the future. Dust and noise exposures in mining remain unacceptably high and better controls in both areas must be developed. Mines are expected to become larger and deeper, intensifying the need for a better understanding of rock behavior in these new conditions. The mining work force is approaching an average age of 50 years in many industry segments; the needs of older workers must be accommodated and young replacement workers must be properly trained if injury rates are to be reduced. Effective surveillance, prevention, and control programs, carried out in collaboration with industry, labor, and other governmental agencies, are necessary to ensure the best possible safety and health outcomes for miners. NIOSH is working on all these fronts to continue to have a positive impact on the safety and health of the mining work force.

*Additional information is available at [www.cdc.gov/niosh/mining/](http://www.cdc.gov/niosh/mining/). For more information on other NIOSH programs, visit [www.cdc.gov/niosh/docs/pib/](http://www.cdc.gov/niosh/docs/pib/).*

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