



# OCCUPATIONAL SAFETY & HEALTH

**T**he U.S. can be more competitive and productive with safer, healthier workplaces. CDC plays a critical role in this by helping prevent illness, injury, disability, and death caused by workplace exposures. Our research and practical tools help keep workers safe from work-related illnesses and injuries. And we work with states and industry to improve worker safety and health.

## KEY ACCOMPLISHMENTS

- Recommended occupational exposure limits and control practices for carbon nanotubes and nanofibers that can be inhaled. This supports safe, U.S.-led growth of the multibillion-dollar nanotechnology industry.
- Patented a technology for controlling exposure to silica dust and reducing risk of severe lung disease among workers in the hydraulic fracturing industry.
- Announced a free, online course to help nurses avoid being assaulted on the job—3,200 have already completed the course.



## 12,700 App Users

An innovative smart phone app helps workers position ladders securely to prevent painful or disabling falls.



### 1 IN 3

1 in 3 deaths in the construction industry is from falls, the leading cause of work-related deaths.



### 4,600

More than 4,600 U.S. workers died of work-related injuries in 2011.



### \$263 BILLION

About \$263 billion is spent on work-related deaths and nonfatal injuries and illnesses (based on medical costs and productivity losses in 2007).



CDC research helps develop innovative tools that make workplaces safer, such as this LED cap lamp.

## THE LIGHT AT THE END OF THE TUNNEL CDC DEVELOPS BETTER LAMP FOR MINERS

Underground mines are dark, crowded, physically demanding, and busy with miners and heavy equipment on the move. For years, miners have depended on incandescent lamps mounted on their safety caps to avoid potential dangers such as approaching heavy machinery and uneven, slippery surfaces. But traditional lamps have problems—they require heavy batteries, have limited bulb life, and their yellowish light can impair the ability of older workers to see hazards clearly.

So CDC's National Institute for Occupational Safety and Health (NIOSH) developed and tested a better product—a new light-emitting diode (LED) cap lamp that significantly improves the worker's ability to see mine hazards. The new lamp provides more flexibility in adjusting the direction and intensity of the light to better match the miner's visual needs. The LED cap lamp has a much longer life than the traditional incandescent bulb (up to 50,000 hours of use compared with about 1,000 hours from the traditional bulb). Because LEDs require only about 25% as much power as an incandescent bulb, the battery is smaller and lighter.

This CDC innovation resulted in a change to the technical standards for manufacturers and users by an international technical standards organization. One manufacturer updated its products using CDC research; other manufacturers are expected to follow to remain competitive.