

Project Title: Characteristics of, and Barriers to Effective Hazard Identification and Current Control Programs in U.S. Metal and Non-Metal Mines

Organization: The Steelworkers Charitable and Educational Organization

Partnership: Department of Occupational and Environmental Health Sciences
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Focus Area: Safety and Health Management

SYNOPSIS

Problem Statement: Regulatory agencies in the United States manage worker safety and health with rulebooks – extensive lists of hazard-specific OSHA and MSHA standards. But the standards will never cover every hazard, and the rulemaking process cannot keep up with technological change, new scientific information, and the knowledge gained through accident and near-miss investigations. The safest workplaces go beyond mere compliance with the rulebook, and manage safety and health through a well-defined program focused on effective hazard identification and control. MSHA strongly recommends that all mines implement such “find and fix” programs. Yet how widespread are such programs? How effective are they? What are their characteristics? What are the impediments to successful programs?

Impact of the Research: Understanding the characteristics of and barriers to effective hazard identification and control programs is critically important for all workplaces, but particularly for more hazardous workplaces, such as mines. One-hundred-forty-two miners died from traumatic injuries in U.S. metal and non-metal mines between January 1, 2007 and October 19, 2013. Many more died from occupational disease or were seriously injured. The USW is the predominant union in metal and non-metal mining in North America, with members in 125 U.S. mines. The union is well-positioned to study the effectiveness of hazard identification and control programs in this industry. The miners represented by the USW are essential to these activities because they are more familiar with their work environment than anyone else, and because many deadly hazards are the result of unusual, changed or upset conditions which can only be identified by the miners actually present when they occur. Many organizations, including OSHA, MSHA, ANSI, and the ILO have outlined the elements of comprehensive safety and health management programs. Both OSHA and MSHA are considering standards mandating such programs. But little data exists on their prevalence, let alone the effectiveness of individual elements. A better understanding of what actually works should lead to more and better programs in metal and non-metal mines. The findings may be generalizable to other mines and other industries.

Objectives and Research Approach: The objectives of the study are to: 1) determine the prevalence of find-and-fix programs in USW metal and non-metal mines; 2) assess the role and effectiveness of safety and health committees in these programs; 3) measure worker participation in these programs and identify barriers to participation; 4) develop best practice recommendations to strengthen these programs and overcome obstacles to worker participation; and, 5) evaluate efforts to put these recommendations into practice. The research will begin with a survey of a stratified sample of the USW’s metal and non-metal mines, sent to the union leadership and management counterparts in each location. This will be followed by an intensive survey of every miner and manager at five case study sites representing different commodities – tentatively iron, copper, trona, precious metals and salt. The surveys will be used to develop recommendations, which we will attempt to implement at the case study sites, and other sites as well.