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DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Centers for Disease Control and Prevention

[30Day-15-15EC]

Agency Forms Undergoing Paperwork Reduction Act Review

The Centers for Disease Control and Prevention (CDC) has submitted the following information collection request to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act of 1995. The notice for the proposed information collection is published to obtain comments from the public and affected agencies.

Written comments and suggestions from the public and affected agencies concerning the proposed collection of information are encouraged. Your comments should address any of the following: (a) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility; (b) Evaluate the accuracy of the agencies estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used; (c) Enhance the quality, utility, and clarity of the information to be collected; (d) Minimize the burden of

the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses; and (e) Assess information collection costs.

To request additional information on the proposed project or to obtain a copy of the information collection plan and instruments, call (404) 639-7570 or send an email to [omb@cdc.gov](mailto:omb@cdc.gov). Written comments and/or suggestions regarding the items contained in this notice should be directed to the Attention: CDC Desk Officer, Office of Management and Budget, Washington, DC 20503 or by fax to (202) 395-5806. Written comments should be received within 30 days of this notice.

**Proposed Project**

Improving Organizational Management and Worker Behavior through Worksite Communication – New - National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC).

## Background and Brief Description

NIOSH, under Public Law 91-596, Sections 20 and 22 (Section 20-22, Occupational Safety and Health Act of 1977) has the responsibility to conduct research relating to innovative methods, techniques, and approaches dealing with occupational safety and health problems.

This research assesses best practices for communicating and employing a strategic health and safety management system (HSMS) to facilitate workers' health and safety behaviors, including ways that lateral communication from management influences worker perceptions and behaviors. Currently, ambivalence exists about how to strategically communicate aspects of an HSMS top-down in the mining industry. Research indicates that, to answer questions about effectively using an HSMS to improve safety, research needs to follow a sample of workplaces over time, measuring the introduction or utilization of an HSMS and then measuring outcomes of interest at the workplace level and worker level.

Therefore, analyzing workers' perceptions of the organization's HSMS, leaders' implementation of the organization's HSMS, and communication gaps between these two groups, may provide more insight into the best, most feasible

practices and approaches to worker H&S performance within a system. This project is initiating such an approach by implementing a series of multilevel intervention (MLI) case studies that assess the utility of a safety system that includes aspects of both safety management on the organizational level and behavior-based safety on the worker level. By studying these levels separately and introducing an intervention to bridge these two groups together to improve safety, the communication practices within an HSMS may be enhanced.

NIOSH proposes a 3 year approval for a project that seeks to empirically understand what HSMS communication practices are important for mine worker H&S and how those practices can be developed, implemented, and maintained over time via desired communication from mine site leadership. The following questions guide this study:

What impact does the MLI communication model that was designed and implemented have on: (1) workers' health/safety behaviors, including those that lower exposure to dust; (2) workers' perceptions of their organization's values; and (3) changes in managers' strategic HSMS communication and implementation with workers to facilitate health/safety performance, including those that lower exposure to dust.

To answer the above questions, NIOSH researchers developed a multilevel intervention (MLI) that focuses on both management and workers' communication about, and subsequent actions taken, to reduce respirable dust exposure over time. This MLI will inform how leadership communicates to their employees and what affect(s) this communication has on individual behavior such as corrective dust actions taken by workers. By assessing the ongoing safety/health interactions between individual workers and their organizational capacities (i.e. levels of leadership and management of safety), and how these interactions influence and shape personal H&S performance, we can better understand what aspects of both systems need attention in a merged, more balanced and comprehensive system of health and safety management (DeJoy, 2005).

Specifically, this project is using mine technology, the Helmet-CAM, as a communication medium to help merge these two worksite systems. Previous research indicates that the use of information technology can enhance lateral and horizontal communication within organizations, showing support for using the Helmet-CAM in the current study (Hinds & Kiesler, 1995). NIOSH researchers can analyze what and how communication practices should be implemented to influence worker perceptions

of their organization's H&S values and how this impacts their subsequent H&S behavior. Eventually, practices used to influence behavior related to dust control can be extrapolated to inform ways to communicate about and manage additional health/safety problems within the industry via an HSMS as implemented by site leaders.

The Helmet-CAM incorporates video footage and real-time dust measurements of workers while performing their job duties and tasks in various locations throughout the workday. This technology has been a viable assessment tool to provide a comparison of where and when miners are exposed to their highest respirable dust concentrations. As a result, Helmet-CAM technology is being employed at many mines as a way to identify dust exposures of workers and to help reduce dust hazards in the environment. However, we do not yet know how mine site management is using, if at all, this technology to communicate with workers about their personal health and safety behaviors. Discussions about the tasks workers perform when exposure levels are high and what actions they can take to reduce their dust exposure may be valuable to the industry in helping advance the way engineering-control technology is used from a behavioral vantage point as well.

Previous research (Yorio et al. 2014) identified three areas that influence the relationship between the strategic HSMS and its overall success in implementing and encouraging worker behavior change: worksite leadership, organizational values, and worker perceptions and interpretations of management. Data on these three contingencies are collected from the management and worker levels during three time points throughout a six-week intervention to assess the ongoing communication via the Helmet-CAM and effects of the communication on behavior. Data collection and analysis pertaining to these three areas may occur via a pre/post survey with workers and pre/mid/post interviews/focus groups with workers and mine site leaders, some of which include dialogue around Helmet-CAM footage as provided by the workers who choose to participate.

NIOSH proposes this intervention design at a minimum of three and no more than five industrial mineral metal/nonmetal mine sites. All of the data collection instruments have been used in previous studies to examine worker and leadership variables and factors. Therefore, NIOSH knows that the data collection instruments are valid and reliable to use in studying the worker and leader levels simultaneously, within the same mine. Industrial mineral sites will be recruited who have inquired interest in learning how to use the Helmet-CAM on their

site and/or interest in improving their site wide communication efforts. Only a small sample of workers will participate at each mine site because of the time required for completion and to ensure the longitudinal data can be adequately collected over the six weeks. In other words, we would rather collect data multiple times with the same worker and have fewer participants than collect data from more workers but not have the ability to appropriately follow-up during the subsequent two visits.

Data collection will take place with no more than 150 mine workers and 30 mine site leaders over three years. The respondents targeted for this study includes any active mine worker and any active site leader at an industrial mineral metal/nonmetal mine. It is estimated that a sample of up to 150 mine workers will participate in the intervention, which includes wearing the Helmet-CAM for a portion of their job tasks (no more than two hours total) during three time periods (when NIOSH is present during the field visit). In addition to wearing the Helmet-CAM, workers will be asked to complete a pre and post-test survey (~15 minutes) and an interview during three time points throughout the study (~ 30 minutes each). The interviews include a debriefing of Helmet-CAM footage with participants at various mining operations who agreed to participate. It also is estimated that a sample of up to 30 mine



site leaders will participate in interviews/focus groups about HSMS practices at the same participating mining operations. The interviews/focus groups also occur three times during each of the NIOSH field visits and will take no more than 45 minutes each. All participants will be between the ages of 18 and 75, currently employed, and living in the United States.

Participation will require no more than 4.5 hours of workers' time over the six-week intervention and no more than 2.5 hours of site leaders' time over the six-week intervention period.

There are 278 total burden hours. There is no cost to respondents other than their time.

Estimated Annualized Burden Hours

Type of Respondents	Form Name	Number of Respondents	Number of Responses per Respondent	Average Burden per Response (in hours)
Mine Site Leaders/Managers	Mine Recruitment Script	10	1	5/60
	Pre/Mid/Post HSMS Interview /Focus Group Questions	10	3	45/60
Mine Worker	Mine Worker Recruitment Script	50	1	5/60
	Mine Worker Survey	50	2	15/60

Pre/Mid/Post Behaviors and Helmet-CAM Interview Questions	50	3	90/60
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