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Death on the Job: Can Occupational Fatalities in Alaska be Prevented?

Alaska Division of Public Health Launches New Injury Prevention Program

Alaska has the highest annual rate of job-related traumatic deaths in the nation: 33.1 per 100,000 workers.¹ Thirty-five Alaskan workers died due to trauma suffered on the job during the first 6 months of 1992!² Can Alaskans work productively, burdened with this unacceptably high traumatic occupational fatality rate? Scientific knowledge and the application of the principles of epidemiology can make the workplace safer. Accordingly, the Section of Epidemiology has begun a new effort to reduce the number of traumatic occupational fatalities in Alaska.

A cooperative agreement has been established with the Section of Epidemiology and the National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research. This agreement supports a new prevention program, referred to as Fatal Accident Circumstances and Epidemiology (FACE) by NIOSH, which characterizes the frequency and causes of occupational injury or death in order to develop effective prevention strategies. Alaska is one of nine states piloting this collaborative effort with NIOSH.

The FACE activity combines knowledge from epidemiology, industrial hygiene, and safety engineering to arrive at scientifically-based, sound, and effective recommendations which will reduce the occurrence of fatal and nonfatal injuries. A key component to the success of this work is information collected in fatality site investigations. FACE investigators search for answers to difficult and puzzling questions. Why was personal protective equipment not used? Why were standard safety precautions not followed by trained workers? Were safety education programs adequate? Are passive engineering solutions possible? Are work routine changes possible? Did environmental factors play an important role?

FACE investigators collect information based on the triad: victim, energy agent, and environment. Each point of the triad is evaluated at different times during the fatal incident (pre-event, event, post-event). Pre-event analysis reviews victim behavior, job knowledge, and hazard awareness. Event-related data includes the circumstances surrounding the fatality. The post-event analysis reviews methods of removing the victim from the injury environment and subsequent emergency medical care efforts. A key aspect of these investigations is the ability to view job-related fatalities as multifactorial events without assigning blame to individuals, employees, or organizations. Investigators believe a non-accusatory approach will enable us to more accurately collect critically needed data since witnesses may be less fearful of retribution by supervisors or employers. Public Health uses applied science and data rather than a regulatory approach to reduce the occurrence of occupational injury.

The Section of Epidemiology is currently conducting investigations in three major areas of occupational fatality: confined space (oxygen-depletion, toxic/flammable atmospheres, physical hazards), electrocutions, and falls. However, the program will be expanding into other areas in the future (machine-related deaths, individuals struck by objects, etc.). The long-term goal is to investigate every occupational fatality in Alaska. Although the development of a traumatic occupational injury surveillance system and the collection of data for epidemiologic analysis are initial priorities of the Occupational Injury Prevention Program, a major focus will be to recommend preventive measures. These include behavioral change and prevention education, use of existing and development of new personal protective equipment, and passive engineering solutions.

One example of the value of FACE investigations and their impact on worker safety comes from NIOSH's Division of Safety Research. Workers in several states were electrocuted while operating an electronically-controlled lathe.

Viewed individually, the deaths might have been viewed as rare occurrences. But NIOSH's review of the data suggested that this cluster of job-related deaths had a common cause. A subsequent investigation revealed a defective capacitor (resulting in improper grounding) in the lathe power control system. This problem had a relatively simple engineering solution; the manufacturer replaced the capacitor with a new design -- and further deaths were prevented.

If you have questions regarding this activity, or wish to request assistance in the follow-up of an occupational fatality, call Gary Bledsoe, Occupational Injury Prevention Program Coordinator at 561-4406 (home: 337-8802).

¹ National Traumatic Occupational Fatalities (NTOF): 1980-1988 database, NIOSH, Division of Safety Research

² Unpublished data - NIOSH, Alaska Activity