

for other workers. The National Traumatic Occupational Fatalities Surveillance system reported 6,471 fatalities of civilian workers aged 65 years and older. The number of all fatalities has decreased over time, but the proportion of older worker fatalities has increased—ranging from a low of 6% of all work-related fatalities in the early 1980's to 8% in 1994.

Characteristics of older worker fatalities during 1980-1994, suggests that interventions need to focus on those who work in agricultural settings, who work around or operate machines, and who are exposed to fall hazards and risk factors for violence. Past fatality experience and projected employment patterns can be analyzed together to better understand the impact of an aging workforce on occupational safety and health.

**PS.08 Five Workers Engulfed & Suffocated in Corn in Nebraska, 1999**—Hetzler WE

Background: In Nebraska, where corn production is the second highest in the nation, the land is dotted with grain bins, gravity feed bins and gravity feed wagons. When workers enter these bins and wagons they can become engulfed in corn and suffocate. In the United States, between 1980 and 1994, over 120 people (NTOF reported 88 deaths from 1980 to 1992 and CFOI reported 33 deaths from 1993 to 1994) were killed by grain engulfment.

Purpose: To identify and describe trends in grain engulfment fatalities and disseminate preventive strategies to those who can intervene in the workplace.

Methods: Nebraska entered into a cooperative agreement with NIOSH in 1994. Using protocols developed by the NIOSH FACE program, corn engulfment cases were identified and on-site investigations were conducted. Using the Haddon model, investigators were able to identify multiple causes and develop multiple prevention strategies to help prevent similar types of deaths.

Results: Five cases were identified. Three cases involved entry into corn bins; one case dealt with a bin that burst, burying the victim, and another case involved a semi grain hopper engulfment.

Conclusions: Recommendations to prevent future similar fatalities include complying with national safety standards, installing locks on access doors to bins and silos, and equipping workers with two-way communications equipment. To disseminate the recommendations, the NE FACE program developed a FACE FACTS sheet that summarized these cases and detailed the prevention recommendations and collaborated with the Omaha and Nebraska Safety Councils who distributed 2,500 FACE FACTS to businesses throughout Nebraska and Western Iowa. This poster will also be presented to the regional meeting (Iowa, Nebraska, Colorado and Kansas) of Farm Safety 4 Just Kids, in June, 2000. The

FACE FACTS sheet was placed on the NE FACE website and numerous presentations were given to the Nebraska agricultural community.

**PS.09 Fatality Assessment and Control Evaluation (FACE) Program: Recommendations for Preventing Injuries and Deaths of Workers Who Operate or Work Near Forklifts**—Higgins DN, Braddee RW,

Background: Forklifts, also known as powered industrial trucks, are used in numerous work settings, primarily to move materials. Each year in the United States, nearly 100 workers are killed and another 20,000 are seriously injured in fork-lift related incidents [BLS 1997, 1998].

Purpose: To identify and describe trends in forklift-related fatal incidents and to use data collected in fatality investigations to formulate and then disseminate preventive strategies to those who can intervene in the workplace.

Methods: Data from the National Traumatic Occupational Fatalities (NTOF) data base are used to describe trends and rates of fatalities over a 15 year period. It is estimated that NTOF, which is based solely on death certificates, identifies about 80% of work-related deaths. Through investigations done in the Fatality Assessment and Control Evaluation (FACE) program, additional characteristics such as safety practices, standards, and equipment are detailed. Through surveillance and investigations, potential risk factors are identified and prevention strategies are developed.

Results: From 1980 to 1994, 1,021 workers died from traumatic injuries suffered in work-related incidents that involved forklifts. The majority of these deaths were due to forklift overturns (22%), workers struck by forklifts while working nearby (20%), victims crushed by forklifts (16%), and falls from forklifts (9%). Between 1983 and 1999, the NIOSH FACE program investigated 13 fatalities that involved workers who died as a result of forklift injuries.

Conclusions: Recommendations include working in compliance with national safety standards, establishing and implementing written safe work procedures, retrofitting roll-over protective structures and seat belts (where applicable), and providing appropriate worker training.

**PS.10 Eye Injury Prevention Among Mechanical Contractors**—Hsu L, Hunting KL, Welch LS

A survey on eye injury prevention was distributed to approximately 2000 mechanical contractors; 171 completed surveys were received. Each contractor reported the number of eye injuries during 1998 which required first aid or medical care. The aggregate eye injury rate (total) was 4.6/100 workers. Rates varied by size of contractor and the type of work done by the contractors.



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## ABSTRACTS

**National Occupational  
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