Indiana State Department of Health
Indiana FACE
Date: December 12, 1995

TO: Charles L. Barrett, M.D., M.S.P.H., Medical Epidemiologist
Epidemiology Resource Center

FROM: Richard L. Warren, Indiana FACE Investigator

SUBJECT: Roofer dies following a 15-foot fall from residential roof

SUMMARY:
A 63-year-old male roofer died as a result of head injuries sustained from a 15-foot fall from the tile roof of a two story single family dwelling. The decedent, working alone, had been applying grout near the edge of the new tile roof. He was not using fall protection equipment. The fall was unobserved. The decedent was found unconscious on a sidewalk and hard ground next to the house and died three hours later as a result of head injuries sustained in the fall. The decedent had a documented history of heavy smoking, emphysema, and recent pneumonia. Although the decedent was thought to be physically capable of performing his duties, it remains unclear whether his pre-existing medical condition predisposed him to this incident or affected its outcome. The FACE investigator concluded that in order to prevent similar occurrences employers should:

1. Ensure workers with medical conditions or physical limitations are not placed in work situations disallowed by employee`s physical condition.

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2. Develop and implement formal safety programs to help workers recognize, understand, and control fall hazards and other work hazards.

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3. Ensure that appropriate fall protection equipment is available and used correctly when working at elevation.

4. Encourage workers to actively participate in work place safety.

INTRODUCTION:
On May 11, 1995, a 63-year-old male roofer (the decedent) died from severe head injuries after falling 15 feet 4 inches from the pitched roof of a private residence. The Indiana FACE (Fatality Assessment and Control Evaluation)

investigator was notified by the Indiana Occupational Safety and Health Administration (IOSHA) on May 19, 1995. The incident was reviewed by the FACE field investigator and the IOSHA compliance officer and it was decided the FACE investigator would conduct an investigation. The incident site was visited and interviews with the owner of the private residence and roofing company were completed. Photographs and measurements were obtained at the incident site.
The employer is a roofing contractor employing four employees and specializing in residential and commercial roofing. The employer has been in business for 18 years
and this was the first fatality. The decedent had been employed with the company for 15 years including intermittent employment during the last 5 years. The company has a written safety policy including general rules and procedures. The employer indicated on site ("tailgate") safety meetings were usually conducted at the beginning of a new job.
The decedent had a documented history of heavy smoking, emphysema and recently diagnosed pneumonia. Although according to the employer, the decedent looked physically fit to work, it remains unclear whether his pre-existing medical condition predisposed him to this incident or affected its outcome.

INVESTIGATION:
The roofing company had been contracted to install a new tile roof and copper gutters for a private residence that was currently occupied. The main roofing work had been completed during the two months prior to the incident. On the day of the incident (May 11, 1995) the decedent was instructed to grout the "rake" (a board or molding placed along the sloping sides of a framed gable to cover the ends of the siding) on the rear of the house. He worked alone at this task while co-workers were completing work on the front of the house.

Evidence indicates the decedent mixed grout in a five gallon bucket, using water from a garden hose, before he climbed to the roof. As he was mixing the grout he left the hose running on the ground creating the mud that was found later on the decedent's shoes. The decedent then climbed an extension ladder with the bucket about one quarter filled with grout. He climbed onto the roof which had a pitch of 4:12 (4 feet of vertical rise to 12 feet of horizontal width). From that location, the decedent fell 15 feet 4 inches to the concrete sidewalk and packed ground. This entire sequence was unwitnessed. Evidence suggests that fresh mud on the decedent`s shoes may have caused him to slide on the roof tiles. He was not using fall protection equipment.

Later, the employer went looking for the decedent and found him lying on the concrete sidewalk and packed ground. A resident of the home called 911 and an Emergency Medical Service (EMS) ambulance arrived at the scene approximately 4 to 5 minutes later. The EMS team found the decedent traumatized, unresponsive, and bleeding from the head. The EMS team administered CPR, stabilized the decedent, and had him transported by

helicopter to a large area hospital. The decedent remained comatose until his death 3 hours later.

CAUSE OF DEATH:
The cause of death as listed on the certificate of death is blunt force injuries to the head.

RECOMMENDATIONS AND DISCUSSION

RECOMMENDATION # 1:
Employers should ensure workers with medical conditions or physical limitations are not placed in work situations disallowed by medical conditions.

DISCUSSION:
The victim had a medical history of heavy smoking, emphysema, and recently diagnosed pneumonia. Employers should carefully comply with any limitation on work imposed by an employee`s medical and physical condition.

RECOMMENDATION # 2:
Employers should develop and implement formal safety programs to help workers recognize, understand, and control fall hazards and other work hazards.

DISCUSSION:
Although the employer indicated that training programs were in place, these were largely informal procedures, such as “tailgate meetings” at the start of new jobs. Written procedural protocols were available, but safety training was not regularly scheduled. Structured training sessions could provide a framework for systematic training for specific work procedures, and would also reduce the possibility that training becomes too informal with minimal discussion of actual safety techniques.

RECOMMENDATION #3:
Employers should ensure that appropriate fall protection equipment is available and used correctly when working at elevation.

DISCUSSION:
OSHA regulation 29 CFR 1926.501(b)(1) states that “each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is 6 feet (1.8 meters) or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest system." In this incident there was no fall protection equipment present on the roof; however, on the day of the FACE investigation the employer was wearing fall-protection equipment.

RECOMMENDATION #4:
Employers should encourage workers to actively participate in work place safety.

DISCUSSION:
Employers should encourage all workers to actively participate in workplace safety and should ensure that all workers understand safety and the role they play in the prevention of occupational injuries. In this instance the decedent was working 15 feet above ground level without benefit of guarding or fall protection equipment. Workers should look out for their personal safety and the safety of co-workers. When workers observe hazardous conditions or activities, they should, depending on the circumstance, notify management and/or remind co-workers of the proper way to perform their task and of their responsibility to participate in the prevention of occupational injuries.

REFERENCE
29 CFR 1926.501(b)(1) code of federal regulations, Washington D.C.: U.S. Government Printing Office, Office of the Federal Registrar.

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What is the FACE Program?

FACE is one of many prevention programs conducted by the Indiana State Department of Health (ISDH). FACE stands for "Fatality Assessment and Control Evaluation." The purpose of FACE is to identify factors that increase the risk of work-related fatal injury. Identification of risk factors will enable more effective interventions to be developed and implemented. The FACE Program does not just count fatalities. It uses information gained from each fatality investigation to develop programs and recommendations aimed at preventing future occupational fatalities.

Who can you contact for additional information?

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