and completing the DIA contract on budget, rather than over budget. In contrast, reportedly consistent use of a number of accepted safety practices was associated with significantly higher injury rates in bivariate and multivariate analyses.

Conclusions: The pattern of counterintuitive results found in this study suggests that survey questions reflecting agreed-upon safety practices, when asked of the person responsible for all on-site construction activities, are likely to elicit normative responses. Objective validation of reported safety practices, when used in conjunction with measures of both time at risk and outcome as well as control for prevailing risk of the work performed, is critical to evaluating their efficacy in reducing injury rates.

F6.2 Analysis of Construction Injury Burden by Type of Work—Lowery JT, Glazner JE, Borgerding JA, Bondy J, Lezotte DC, Kreiss K

Background: To lay groundwork for identifying patterns of injury etiology, we sought to describe injury experience associated with types of work performed at construction sites by examining workers' compensation (WC) claims for the 32,081 construction workers who built Denver International Airport (DIA).

Methods: Injury rates and WC payment rates were calculated for 25 types of work based on claims and payroll data reported to DIA's owner-controlled insurance program according to National Council on Compensation Insurance job classifications. By linking DIA claims with corresponding lost-work-time (LWT) claims filed with Colorado's Workers' Compensation Division, we were also able to obtain total and median lost days for each type of work.

Results: Injury experience varied widely among types of construction work. Workers building elevators and conduits and installing glass, metal, or steel were at particularly high risk of both LWT and non-LWT injury. Median days lost by injured workers was the highest (202 days) for driving/trucking. Median days lost for most types of work was much greater than previously reported for construction: 40 days or more for 18 of the 25 types of work analyzed. WC payment rates reflect both number and severity of injuries and were generally not significantly different from expected losses. They were, however, significantly higher than expected for driving/trucking, metal/steel installation, inspection/analysis, and elevator construction.

Conclusion: Analysis of injury data by type of work allows targeting of safety resources to high risk construction work and would be useful in prospective surveillance at large construction sites with centrally administered workers' compensation plans.

F6.3 Work-related Falls in Residential and Drywall Carpentry—Lipscomb HJ, Dement JM, Li L, Nolan J, Patterson D

Workers' compensation records provide limited information about injury circumstances, etiology and potential interventions. To overcome these obstacles an active injury reporting/investigation program, modeled after NIOSH's Fatal Accidents Circumstances and Epidemiology program, was established with the Carpenters' District Council of St. Louis for residential and drywall carpenters. Twenty-five contractors (3 million hours of union work/year) report recordable injuries as they occur. Journeymen carpenters interview injured workers using a standard format. Sites where falls occur are visited to assess fall hazards and factors reflecting overall safety climate. Worker and investigator report factors that could have prevented injury. The evaluation of falls in the first reporting year* are described.

Twenty-five falls (68% from elevations) have been investigated accounting for 14% of injuries. Half of falls from the same level resulted in lost time compared to 66% of falls from elevations - which were also more serious. The vast majority of falls occurred on single-family sites at the stage of first level framing. Over half of victims had over 5 years experience with their task when they fell and only 13% had less than a year of experience. 83% who fell from the same level were aware of a site fall protection plan compared to 55% who fell from elevations.

Same level falls were related to site conditions — grade of lot, wet/frost, housekeeping. Workers felt these could have been prevented by more attention to task and less emphasis on speed. Falls from elevations occurred because of uncovered openings, lack of rails or personal protective equipment, ladder/scaffold failures, actions of co-workers. Findings document training needs for scaffold assembly, movement and work practices, equipment maintenance, coordination of tasks. Workers commonly attribute falls to their own behavior but more often for falls from the same level.

* These data (first 7 months) will be updated before presentation

F6.4 Nail Gun Injuries in Construction: Need for Gun Control?—Dement JM, Lipscomb HJ, Li L, Nolan J, Patterson D

The nail gun is a potentially dangerous device commonly used in construction. Data were combined from 3 sources to collect information about injuries resulting from nail guns among construction workers. Workers' compensation records were obtained for non-union homebuilders (7500 contractors; 9,205 injuries) in North Carolina 1995-1999 and union carpenters (13,487 carpenters; 4,138 injuries) in the state of Ohio 1994-1997. Relevant injuries were identified from text

Pittsburgh, Pennsylvania
October 17-19, 2000

ABSTRACTS

National Occupational Injury Research Symposium

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

National Institute for Occupational Safety and Health
NIOSH