

The 9,377 workers contributed 22.2 million work-hours. There were 2,065 injury claims with a total of \$2.1 million in payments. For the study population the average work-related injury cost rate was \$9.48/100 work-hours. The risk factors that were found to be significantly associated with the cost rate were history of previous back injury, age group, job title, smoking, and back belt wearing.

Analysis of cost per hours of work adds another dimension to analysis of work-related injuries and in combination with survey data, allows assessment of individual characteristics and risk factors in relationship to work-related injuries. Targeting of research prevention strategies may be enhanced with these additional analyses.

A3.2

Title: Measuring the Economic Burden of Fatal Occupational Injuries

Author: Biddle EA

Occupational injuries claimed the lives of nearly 50,000 American workers from 1992-1999 as reported through the Census of Fatal Occupational Injuries (CFOI) surveillance system. Occupational fatality counts describe only a portion of the burden to the worker, industry, and society. Measuring the economic loss of fatalities adds a valuable dimension to targeting efforts as well as a tool for assessing cost savings of prevention efforts.

This research developed an interactive computer program that unlike earlier works derives the economic burden using a bottom-up-approach—summing the cost of each individual fatality based on the decedent's characteristics as reported by CFOI. The model, consistent with the human capital theory, provides national and state estimates for the economic burden of occupational injury fatalities for selected groups such as specific industries, occupation groups, and minority workers.

Over the study period, the total cost to society for occupational injury fatalities was \$33 billion, ranging from about \$5 billion in 1994 to nearly \$4 1/2 billion in 1999. The mean cost for this period was \$784,189 and the median was \$791,556. Mean costs ranged from \$761,724 in 1999 to \$806,892 in 1992. The highest total costs of fatal occupational injury were in the construction industry—\$7 billion, or about 20% of the overall burden both in costs and number of fatalities. The public administration industry had the highest mean cost of fatalities with just over \$1 million and the agriculture industry had the lowest mean cost with \$557,371. Similarly, the mean cost of fatalities by occupational group ranged from \$1.1 million in managerial and professional specialties to \$459,330 in farming, forestry, and fishing. Costs were also estimated by case and worker characteristics. Cost estimates provide additional information about how injuries affect society. They can improve injury preven-

tion and control program planning, policy analysis, evaluation, and advocacy.

A3.3

Title: Economic Cost Model: Transferring Innovative Technology to the States

Authors: Hartley D, Biddle E, Starkey S, Fabrega V, Richardson, S

During 1992-1999 nearly 50,000 occupational fatalities were reported through the Bureau of Labor Statistic's (BLS) Census of Fatal Occupational Injuries (CFOI) surveillance system. A cost model developed at the National Institute for Occupational Safety and Health estimated that the total societal burden for 1992-1999 was nearly \$40 billion. This estimate was based on nationwide medical expenses for fatal occupational injury and lost wages due to premature death.

Wages used in this model were BLS Current Population Survey national estimates of the median annual earnings by occupation. These wage estimates vary substantially by state; the highest being twice that of the lowest. Estimates from this cost model are driven, in large part, by wage data and therefore have similar variability. Cost estimates using national wages were compared to estimates generated from state wages to determine the effect on the estimates of overall societal burden of occupational injury.

During the period studied, there were 3,959 fatal occupational injuries in Texas. Truck drivers had the largest number of fatalities (587). Texas cost estimates were 10-11% lower than national estimates for the same occupation. For example, the Texas mean estimate for 47 year old white male truck drivers was \$739,000 compared to \$826,000, the national mean estimate for this same group. Estimates for 28 year old white male truck drivers in 1994 varied from \$849,000 to \$943,000.

This pilot shows substantial differences in cost estimates generated using state data versus estimates using national data. CFOI states can adopt this technology as a tool for use with frequencies and rates for targeting prevention of worker fatalities. Additionally, using state-specific wage data in the national model will improve the accuracy of societal cost estimates for fatal occupational injury.

NOIRS 2003 ABSTRACTS

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