

Methods: CFOI microdata files for 2004–2006 were obtained and put into a model that eliminated deaths that OSHA is unlikely to inspect or that fall outside coverage under the Occupational Safety and Health (OSH) Act. The former include homicides and most traffic deaths; the latter include deaths among the self-employed and mine workers. Results were tested against fatality data from OSHA’s Integrated Management Information System (IMIS).

Results: OSHA-investigated deaths represent roughly one third of deaths in CFOI. Monthly and annual totals from IMIS for deaths in OSHA overall, federal OSHA and OSHA 18(b) states, and construction and nonconstruction industries correlate well with the results from the model.

Conclusions: The model works. The resulting transformed dataset can be used to validate OSHA data for performance measures required by GPRA and to help OSHA protect workers from fatal injury by identifying high-hazard occupations, industries, and demographic groups, analyzing changes over time, and correlating sets of circumstances associated with workplace deaths.

A3.2

Title: Injury Circumstances of Occupational Fatalities in the U.S.—A Comparison of Two Classification Schemes

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Background: With nearly 6,000 workers dying annually due to injury, occupational deaths continue to be a major public health problem. Effective prevention efforts are dependent upon the ability to categorize circumstances and injury causes at a level detailed enough to identify specific problem areas. This study examines utility and agreement between the Occupational Injury and Illness Classification System (OIICS) and the International Classification of Diseases (ICD), both widely used to categorize occupational fatalities in the U.S.

Methods: To add ICD codes to existing CFOI OIICS, National Center for Health Statistics (NCHS) 2003 and 2004 Vital Statistics Mortality (VSM) data were linked to Bureau of Labor Statistics Census of Fatal Occupational Injuries (CFOI). A probabilistic program matched up to nine variables to link cases.

Results: Of 11,138 CFOI cases, 10,583 (95%) were linked to corresponding VSM cases. Based on OIICS, workplace fatalities primarily involved highway incidents (25%), falls (13%), and homicides (10%);

based on ICD, most deaths involved traffic incidents (24%), falls (12%), and homicide (10%). Although leading events (OIICS) and causes (ICD) were similar, distributions of subcategories sometimes differed as other/unknown codes within ICD were generally identified more frequently. For example, highway and traffic collisions w/stationary objects accounted for 25% (OIICS) versus 11% (ICD), respectively, while falls to lower levels accounted for 89% (OIICS) versus 68% (ICD). However, percentages for homicide-related shootings were similar. In many instances, OIICS provides more detail than ICD. For example, 20% of highway incidents involved vehicles moving in opposite directions.

Conclusions: Injury characteristics by OIICS and ICD are comparable at broad levels. Although ICD allows comparisons of work and nonwork injury deaths, an advantage of OIICS is that it can provide additional detail critical in successfully prioritizing and focusing prevention efforts in U.S. workplaces.

A3.3

Title: Metrics for Predicting Fatal Accidents and LWDII Rates

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Introduction: Host firms that contract with other firms to do work for them often screen them with respect to their projected safety record, as well as on other considerations. Measures that are frequently used are (a) noncompliance with OSHA standards, (b) the occurrence of a recent fatality, and (c) the LWDII. Separately, for construction and manufacturing, we assessed how well these measures predicted performance in terms of (a) the occurrence of fatal or catastrophic accidents and (b) the LWDII rate.

Methods: We relied on different data sources and samples for the 11 different analyses that we carried out. The sources included OSHA inspection data and LWDII data from both the OSHA ODI and from OSHA log data. The samples were either national or used Pennsylvania data. Most analyses used Poisson or logistic regression or ordinary least squares. We controlled for industry variables, employment, and time trends.

Results: For fatal accidents in construction, we found that prior fatalities appear to reduce the probability of a fatality within the next 2 years, prior noncompliance with serious violations probably predicts more fatalities, and the prior LWDII rate has no effect. For manufacturing fatal accidents, the only variable with

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