



Workplace
Safety and Health

Transit and Ground Transportation (NAICS 485)

Number, Rate, and Costs of Occupational Fatal Injuries in the U.S. Transit and Ground Transportation Industry by Selected Characteristics, 2003-2006.

Characteristic	Number of fatalities	Fatality rate (per 100,000 workers)	Costs (2006 Dollars)		
			Mean (thousands)	Median (thousands)	Total (millions)
All U.S. Industries	22,197	3.9	\$960	\$944	\$21,316
All Transportation, Warehousing, and Utilities	3,704	12.9	944	974	3,496
All Transit and Ground Transportation	296	9.9	692	730	205
Year					
2003	75	10.6	722	733	54
2004	80	11.2	667	689	53
2005	75	9.7	634	650	48
2006	66	8.2	753	792	50
Sex					
Male	267	13.1	680	708	182
Female	29	3.0	794	817	23
Age Group					
16-24	12	9.8	846	810	10
25-34	34	8.0	913	854	31
35-44	74	9.1	942	861	70
45-54	86	9.9	728	667	63
55-64	66	11.7	445	426	29
65+	24	12.4	76	59	2
Race					
White	161	8.8	688	691	111
Black	98	10.6	665	721	65
Other ¹	37	15.4	774	798	29
Ethnicity²					
Not Hispanic	252	9.9	675	690	170
Hispanic	41	9.3	800	824	33
Selected SOC Occupation Group					
Construction and Extraction	--	--	--	--	--
Installation, Maintenance, and Repair	8	4.4	1,076	1,004	9
Management	--	--	--	--	--
Office and Administrative Support	--	--	--	--	--



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Characteristic	Number of fatalities	Fatality rate (per 100,000 workers)	Costs (2006 Dollars)		
			Mean (thousands)	Median (thousands)	Total (millions)
Production	--	--	--	--	--
Transportation and Material Moving	272	12.8	660	711	180
Event or Exposure					
0* Contact with objects and equipment	9	0.3	922	817	8
1* Falls	5	0.2	716	790	4
2* Exposure to harmful substances or environments	5	0.2	1,231	959	6
41 Highway accident	104	3.5	629	673	65
43 Pedestrian, non-passenger struck by vehicle, mobile equipment	18	0.6	819	803	15
61 Assaults and violent acts by person(s)	143	4.8	659	707	94
62 Self-inflicted injury	8	0.3	1,139	877	9
Selected Source of Injury					
4* Parts and materials	5	0.2	1,225	955	6
62 Floors, walkways, ground surfaces	7	0.2	629	581	4
71 Handtools--nonpowered	10	0.3	595	611	6
82 Highway vehicle, motorized	128	4.3	647	684	83
87 Rail vehicle	11	0.4	1,104	1,094	12
91 Ammunition	120	4.0	705	752	85

NOTE: Dashes indicate data that do not meet publication criteria.

Asterisks denote a summary level code not assigned to individual cases.

¹This category includes all other races, such as American Indian and Asian, as well as unknown or missing races.

²Numbers are not reported for "unknown", "not classified" or "not reported" categories.

Fatal Occupational Injury Cost Model

Theoretical Basis of Cost Estimation

The cost to society of a workplace fatality was estimated using the cost-of-illness approach, which combines direct and indirect costs to yield an overall cost of an occupational fatal injury. For these calculations, only medical expenses were used to estimate the direct cost associated with the fatality. The indirect cost was derived by calculating the present value of future earnings summed from the year of death until the decedent would have reached age 67, accounting for the probability of survival were it not for the premature death. (For more information, see Biddle, E [2004]. Economic Cost of Fatal Occupational Injuries in the United States, 1980–1997. Contemporary Economic Policy 22(3):370–381 or Biddle, E [2009]. The Cost of Fatal Injuries to Civilian Workers in the US, 1992-2001 and Biddle E and Keane P [2011]. The Economic Burden of Occupational Injuries to Civilian Workers in the United States, 1992-2002. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS.)

Mathematical Representation of Indirect Costs

$$PVF = \sum_{n=y}^{67} P_{y,q,s}(n) [Y_{s,j}(n) + Y_s^h(n)] * (1+g)^{n-y} / (1+r)^{n-y} \quad \text{where:}$$

PVF	= present discounted value of loss per person due to an individual occupational fatal injury
$P_{y,q,s}(n)$	= probability that a person of age y, race q, and sex s will survive to age n
q	= race of the individual
s	= sex of the individual
n	= age if the individual had survived
$Y_{s,j}(n)$	= median annual compensation of an employed person of sex s, specific occupation j, and age n (includes median annual earnings, benefits, and wage growth adjustments)
j	= specific occupation of individual at death
$Y_s^h(n)$	= mean annual imputed value of household production (h) of a person of sex s and age n
g	= earnings growth rate attributable to overall productivity
y	= age of the individual at death
r	= real discount rate (3%)

Data Sources

Fatality data: Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries (CFOI). This research was conducted with restricted access to Bureau of Labor Statistics (BLS) data. These data exclude military personnel, decedents with unknown age or sex, and fatalities occurring in New York City. The views expressed here do not necessarily reflect the views of the BLS.

Probability of survival: National Center for Health Statistics, Division of Vital Statistics.

Median annual earnings: BLS Occupational Employment Statistics Survey. Wage data are based on the occupation of the decedent and the year and State of death adjusted by the Gross Domestic Product (GDP) Deflator to the base year of dollar. The wage growth adjustment, which is the rate of change in wages between age groups, was calculated by NIOSH using BLS Current Population Survey data.

Benefits: BLS Employer Cost for Employee Benefits. Benefits data are based on the year of death adjusted by the GDP Deflator.

Mean annual home production: Expectancy Data. Data are derived through a time diary study sponsored by the U.S. Environmental Protection Agency and conducted by the University of Maryland.

Earnings growth rate: BLS Employment Compensation Index (ECI).

Medical costs: National Council on Compensation Insurance. This is a single 4-year average medical cost.

Employment estimates for rate calculations: BLS Current Population Survey.

Fatality Rate Calculations

Fatality rates were calculated by NIOSH and may differ from previously published BLS CFOI rates.

Fatality rates were calculated as deaths per 100,000 workers. Fatality rates for sex, race, age group, and occupation were calculated using employment estimates by the individual characteristic within the specific industry. Employment estimates for the specific industry were used to generate rates for event and source.

Classification Systems

Industry: 2002 National Industry Classification System (NAICS)

Occupation: 2000 Standard Occupational Classification System (SOC)

Event and Source: 1992 BLS Occupational Injury and Illness Classification System (OIICS)