

COSTS OF OCCUPATIONAL INJURIES, 1992

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- **ARTICLE**

Leigh JP et al

**Occupational Injury and Illness in the
U.S. – Estimates of Costs, Morbidity and
Mortality.**

**Archives of Internal Medicine, 1997,
157:1557-1568**

- **BOOK**

Leigh JP et al

**Costs of Occupational Injury and
Illness, University of Michigan Press,
2000**

METHOD

- **Injuries counted as episodes,
not number of people,
not number of body parts**
- **Counted incidence of injuries, 1992
did not count prevalence
(years prior to 1992)**
- **Costs also measured as incidence,
not prevalence**
- **Cost method was Cost-of-Illness,
or Human Capital Method.
Did not use Willingness-to-pay method**

Direct costs: hospitals, doctors, drugs

**Indirect costs: lost wages,
lost home production,
lost fringe benefits,
business costs for new hires**

SOURCES USED

- **BLS's Census of Fatal Occupational Injury**
- **NIOSH's National Traumatic Occupational Fatality Surveillance System**
- **BLS's Annual Survey of Occupational Injury and Illness**
- **National Health Interview Survey**
- **Rand Study (Hensler et al, Rand Corporation, 1991)**
- **National Safety Council**
- **Miller (1995)**
- **National Council on Compensation Insurance**
- **Over 300 secondary sources**

EXAMPLES of CALCULATIONS

- **6,371 injury deaths**

CFOI	6083	initial estimate
	- 154	military deaths
	<u>+ 134</u>	subsequent additions
	6063	

We estimate 98 more African-American deaths and 210 more Hispanic deaths than 1992 CFOI using death rates from later years of the CFOI.

$$**6063 + 98 + 210 = 6371**$$

13.34 million non-fatal injuries

$$(8.3/100) \times (38.8/40.0) \times 117,598,000 = 9,467,814$$

Where 8.3 is BLS rate per 100 FTE workers

38.8 is average number of hours worked, full and part time

40 is hours assumed for FTE by BLS

117,598,000 is number civilians employed

But 9,467,814 ignores willful under-reporting

Assume 20% under-reporting for non-disabling (Glazner et al 1998) and 35% under-reporting for disabling.

Also assume 45% of injuries are disabling

55%, non-disabling.

$$\begin{aligned} & [9,467,814 \times 0.45 \times (1/(1-0.20))] + \\ & [9,467,814 \times 0.55 \times (1/(1-0.35))] \\ & = 13.34 \text{ million} \end{aligned}$$

RESULTS

- **6371 injury deaths**

Compare to 6063 CFOI

4803 NTOF

2520 BLS Annual Survey

8500 National Safety Council

- **13.34 Non-fatal injuries**

Compare to 6.342 BLS Annual Survey

8.7 Million, 3 years average of

National Health Interview Survey

COSTS

• <u>Direct Costs</u>	\$ 38.38 Billion
Medical	\$ 25.98
Medical admin	\$ 5.5
Indemnity admin	\$ 6.8
• <u>Indirect Costs</u>	\$ 94.33 Billion
Lost earnings	\$ 67.26
Fringe benefits	\$ 15.66
Home production	\$ 9.27
Workplace re-staffing	\$ 2.18
<u>Grand Total</u>	\$132.71 Billion

COST COMPARISONS

Acquired Immunodeficiency Syndrome

\$ 35 billion

Alzheimer Disease

\$ 67 billion

Arthritis

\$114 billion

Occupational Injuries

\$132 billion

Heart Disease and Stroke

\$164 billion

Cancer

\$171 billion

PROBLEMS with COUNTING DEATHS

- **Census of Fatal Occupational Injuries requires two documents to confirm a death, e.g. death certificate, workers' compensation report, police report, or newspaper obituary.**
- **National Traumatic Occupational Fatality Study relies exclusively on death certificates.**
- **National Safety Council ignores murders.**

PROBLEMS with COUNTING NON-FATAL INJURIES

- **Annual Survey**

- 1) Ignores or has incomplete data on government workers, self-employed, farm workers on farms with fewer than 11 workers.**
- 2) An economic incentive to under-report by firms and by workers.**
- 3) An economic incentive to over-report by workers.**
- 4) Census of Fatal Occupational Injuries shows Annual Survey death counts miss 59 % of injury deaths:**

$$1 - (2520/6063) = .59.$$

Assume same undercount for non-fatal as for fatal.

Also 6.3 million x (6063/2520) = 15.3 million.

- 5) Questionable Violent acts data**

BLS – 27,060 (1997)

Justice Dept – 2,009,400

PROBLEMS with COUNTING NON-FATAL INJURIES (Continued)

- **National Health Interview Study**
 - 1) **Time trend of job-related injury rates and injuries does not correlate with unemployment or with passing years. All other time trends using other data do correlate.**
 - 2) **NHIS requires respondent to be “currently employed” and 18 years or older. Some disabled persons may be excluded. All workers under 18 excluded.**
 - 3) **NHIS question in 1992 used phrase “accident or other cause”. Assaults, attempted murder, suicide may be under-counted. Better question would specify “assault” and so on.**
 - 4) **Serious injury may result in hospitalization, and potential respondent excluded.**
 - 5) **Some NHIS statistics show higher job-injury rates for whites than blacks. Implausible.**
 - 6) **Respondents may be reluctant to admit on the job injury to government representative.**

- **Workers' Compensation misses roughly 55% of injuries and costs.**
- **Census of Fatal Occupational Injuries shows workers' compensation (WC) reports miss 60% or more of fatal injuries.**
- **Cone JE et al, Journal of Occupational Medicine, 1991; 33:813-817. Found 683 job-related deaths in California. Workers' compensation authorities had records for 43%.**
- **53% of persons reporting a non-fatal on the job injury to the National Health Interview Survey did not file a WC claim.**
- **Rand Study (Hensler et al, 1991) showed workers' compensation missed 57% of non-fatal injuries.**
- **Parker et al, American Journal of Public Health, 1994; 84:608-611. Showed workers' compensation missed 67% of non-fatal injuries.**
- **Rosenman KD et al, JOEM Jan 2000. Only 25% of unionized autoworkers report to WC for repetitive trauma.**
- **Why?**

- **Why?**

- 1) WC frequently does not extend to firms with fewer than 4 employees; self-employed; farms; or domestics.**
- 2) Many government workers have separate insurance programs.**
- 3) Economic incentives to under-report or over report.**
- 4) WC does not cover minor injuries (1, 2, 3, day loss).**

Who pays?

We all do

- **Injured workers and families.**
- **Firms pass on some workers' compensation premiums to consumers through higher prices for products.**
- **Firms absorb some workers' compensation premiums through lower profits.**
- **Firms pass on some workers' compensation premiums to non-injured workers through lower wages.**
- **Taxpayers pay for Medicare coverage for osteoarthritis among retired persons.**

What might help?

- **Federal law requiring death rates and non-fatal injury rates on job application forms. Could also include percentile rankings for rates as well as information on kinds of injuries and illnesses associated with specific job.**

- **Injury Tax**

