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| **What Do Traffic Crashes Cost?**  ***Total Costs to Employers by State and Industry.***  Recent publicity has focused on corporate layoffs as a cost-cutting tool. Debate has contrasted the “bottom line” with “corporate responsibility.” Injuries account for a substantial portion of health-related costs. This report shows that by preventing motor vehicle crashes, the potential health care savings are substantial. Motor vehicle injury costs to employers are included in this report on a nationwide, state-by-state, and industry basis. The report updates the national estimates of employer costs of crashes presented in NHTSA’s report ***“What Do Traffic Crashes Cost? Total Cost to Employers by State and Industry” (1996)*** and adds estimates of alcohol involvement and restraint non-use.  **Costs Covered by Employers**  Employer costs resulting from motor vehicle crashes fall into three categories: Health fringe benefit costs, non-fringe costs, and wage premiums.  **Health fringe benefit costs** are the costs of fringe benefits paid because of illness and injury of employees and their dependents. They cover contributions to Workers’ Compensation medical and disability insurance, health insurance, sick leave, Social Security disability insurance, life insurance, and private disability insurance, as well as insurance administration and overhead.  **Non-fringe costs** include motor vehicle property damage and liability insurance, crash-related legal expenses, and the costs of unreimbursed vehicle damage and replacement. In addition, employers pay taxes to help fund police, fire, and ambulance services. Employers also lose productivity when employees suffer injuries preventing them or their co-workers from working at full capacity. Recruiting and training workers to replace fatally injured or permanently disabled employees raises the bill employers pay for injuries.  Finally, employers pay **wage premiums** to workers for accepting risky jobs. Individual workers and their families bear the pain and suffering and quality-of-life losses associated with workplace injury. Wage premiums for risk-taking can be viewed as payments in advance for possible future losses caused by injury. These payments are not necessarily paid to all workers in high risk jobs. Miller (1990) identifies 30 credible studies showing the average amount paid.  **Employer Costs Extend Beyond the Company Door**  Employers pay employees and their dependents for injuries that occur to their employees on and off the job. They also pay for harm caused to non-employees involved in commercial crashes (crashes involving a vehicle on employer business). In 1998–2000, each year motor vehicle crashes killed an estimated 2,114 people while they were working and injured 353,000. As Table 1 shows, more than half of the injuries forced people to miss work. Overall, on-the-job crash injuries (fatal and non-fatal) amounted to about 6.5 percent of all crash injuries.  **Table 1.  Annual Number of Injuries of Workers and their Dependents Due to  Motor Vehicle Crashes – 1998-2000.**   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **INJURIES** | | | | | **On-the-job** | **Off-the-job in  commercial crash** | **Other  Off-the-job** | **All** | | Fatal | \*2,114 | 88 | 40,593 | 42,795 | | Nonfatal | \*\*353,000 | 265,000 | 4,767,000 | 5,385,000 | | Lost Work Day | 187,000 | 141,000 | 2,527,000 | 2,855,000 | | Non Lost Work | 166,000 | 125,000 | 2,241,000 | 2,532,000 | | **Total** | **355,114** | **265,088** | **4,807,593** | **5,427,795** |   \*includes 211 deaths that did not occur on public roads; and \*\*includes 67,000 on-the-job crash injuries that did not occur on public roads (2000 SOII)  The 2000 economic costs of U.S. highway crashes, excluding the cost imposed on society by travel delays and wage-risk premiums, was $205 billion (Blincoe et al., 2002). Employers pay 20 percent of these costs. They share the costs of highway crashes with government, insurers, and individual crash victims.  Motor vehicle crash injuries on and off the job cost employers almost $60 billion an-nually in 1998–2000. Of that, $41.5 billion was comprised of fringe and non-fringe benefit costs and another $18.4 billion was in the form of wage-risk premiums (Table 2). Nearly half of the combined fringe and non-fringe costs resulted from off-the-job injuries to workers and their dependents.  **Table 2.  Employer’s Motor Vehicle Crash Costs (In Millions of 2000 Dollars)**   |  |  |  |  | | --- | --- | --- | --- | |  | **Crash Injury** | | | | **On-the-job** | **Off-the-job** | **All** | | Health Fringe Benefit Costs | $3,400 | $12,900 | $16,300 | | Non-Fringe Costs | $18,600 | $6,600 | $25,200 | | **SUB-TOTAL** | **$22,000** | **$19,500** | **$41,500** | | Wage-Risk Premiums | $18,400 | $0 | $18,400 | | **TOTAL** | **$40,400** | **$19,500** | **$59,900** |   **Employer Health Fringe Benefit Spending**  Motor vehicle crashes imposed a $16.3 billion health fringe benefit bill on employers (Table 3). Employers’ health care (medical) costs of crash injuries were $7.7 billion. Table 3 illustrates the importance of off-the-job injuries to employers interested in achieving health-related cost savings. Off-the-job crash injuries cost nearly $13 billion, or 80 percent of motor vehicle crash health-related fringe benefit costs. Off-the-job crash injuries comprised an even larger share of employer health care cost (92 percent). Motor vehicle crashes accounted for 4.4 percent of employer health-related fringe benefit cost (Figure 1).  **Table 3.  Employer Health-Related Fringe Benefit Costs from  Motor Vehicle Crashes (In millions of 2000 dollars)**   |  |  |  |  | | --- | --- | --- | --- | |  | **Crash Injuries** | | | | **On-the-job** | **Off-the-job** | **All** | | Workers Compensation | $2,060 | $0 | $2,060 | | ....Medical | $550 | $0 | $550 | | ....Disability | $1,510 | $0 | $1,510 | | Health Insurance & Self Pay | $40 | $7,150 | $7,190 | | Disability Insurance | $80 | $720 | $800 | | Life Insurance | $50 | $560 | $610 | | Insurance Administration | $260 | $720 | $980 | | Insurance Overhead | $330 | $20 | $350 | | Social Security | $100 | $1,390 | $1,490 | | Sick Leave | $470 | $2,360 | $2,830 | | **TOTAL** | **$3,390** | **$12,920** | **$16,310** |   **Figure 1. Motor Vehicle Injury’s Contribution to Health Fringe Benefit Costs**  **[click image for long description](http://www.nhtsa.gov/people/injury/airbags/EconomicBurden/pages/longdesc.html#Anchor-Figur-59601)**  **Traffic Safety Programs Can Produce Savings**  Employer costs per on-the-job crash, per on-the-job crash injury, and per million vehicle miles of travel enable employers to estimate their injury burden and the potential savings of traffic safety programs. These unit costs are averages calculated from total costs and actual incidence. Employers can estimate their cost burden by multiplying the costs in Table 4 by either their total crashes, crash injuries, or millions of vehicle miles of travel. For example, the estimated direct cost of on-the-job crashes for a company that had 100 such crashes would be 100 x $16,471 = $164,710.  **Table 4.  Costs to Employers per Million Vehicle Miles of Travel (M VMT)  and Costs per On-the-Job Highway Crash and Injury**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | **Per  M VMT** | **Per  Crash** | **Per  Injury** | **Per  Fatality** | **Per  Nonfatal Injury** | | Health Fringe Benefit Costs | $32,976 | $3,570 | $23,865 | $314,284 | $22,126 | | Other Direct Costs | $64,858 | $6,699 | $20,432 | $158,108 | $19,608 | | Liability for Losses by Others | $60,043 | $6,202 | $32,016 | $32,016 | $32,016 | | **SUB-TOTAL** | **$157,878** | **$16,471** | **$76,313** | **$504,408** | **$73,750** | | Wage-Risk Premium | $78,083 | $8,065 | $51,865 | $3,306,430 | $32,374 | | **TOTAL** | **$235,961** | **$24,536** | **$128,178** | **$3,810,838** | **$106,124** |   \*Includes fatal and nonfatal injuries.  Including wage-risk premiums, on-the-job highway crashes cost employers over $24,500 per crash, nearly $236,000 per million vehicle miles of travel (M VMT), and over $128,000 per injury. NHTSA reports that safety elements effective in reducing losses associated with motor vehicle crashes include top-level management commitment to traffic safety programs, mandatory safety restraint policies, alcohol and drug non-use policies, Employee Assistance Programs, and safety outreach that extends safety efforts beyond the company door. Tables 5 and 6 show what restraint non-use costs employers. Restraint non-use by on-the-job employees cost employers more than $1 billion a year in fringe and non-fringe costs and a similar amount in wage-risk premiums. A larger $3.9 billion employer bill results from restraint non-use by employees and their benefit-eligible dependents while away from work. Fringe and non-fringe costs per employee involved in a crash on the job average $27,750 unrestrained, far exceeding the $11,310 cost if restrained. The comparable figures for crashes off the job are $2,980 versus $600.  **Table 5.  Employer’s Costs of Safety Belt Non-Use  (In millions of 2000 Dollars)**   |  |  |  |  | | --- | --- | --- | --- | |  | **Highway Crash** | | | | **On-the-job** | **Off-the-job** | **All** | | Health Fringe Benefit Costs | $776 | $2,924 | $3,700 | | Non-Fringe Costs | $276 | $967 | $1,243 | | **SUB-TOTAL** | **$1,053** | **$3,890** | **$4,943** | | Wage-Risk Premiums | $1,077 | 0 | $1,077 | | **TOTAL** | **$2,129** | **$3,890** | **$6,019** |     **Table 6.  Employer's Costs per Person Involved in Crash**   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **On-the-job** | | **Off-the-job** | | | **Unrestrained** | **Restrained** | **Unrestrained** | **Restrained** | | Health Fringe Benefit Costs | $7,020 | $1,580 | $2,500 | $450 | | Non-Fringe Costs | $20,730 | $9,730 | $480 | $150 | | **SUB-TOTAL** | **$27,750** | **$11,310** | **$2,980** | **$600** | | Wage-Risk Premiums | $22,420 | $2,930 | - | - | | **TOTAL** | **$50,170** | **$14,240** | **$2,980** | **$600** |   The annual employer cost of motor vehicle crashes in which at least one driver was alcohol-impaired exceeds $9 billion, including wage-risk premiums (Table 7). Out of this, $3.1 billion comes from job-related alcohol involvement.  **Table 7.  Employer's Costs of Alcohol-Involved Motor Vehicle Crashes  (In millions of 2000 dollars.)**   |  |  |  |  | | --- | --- | --- | --- | |  | **Highway Crash** | | | | **On-the-job** | **Off-the-job** | **All** | | Health Fringe Benefit Costs | $392 | $4,977 | $5,369 | | Non-Fringe Costs | $1,499 | $978 | $2,477 | | **SUB-TOTAL** | **$1,892** | **$5,954** | **$7,846** | | Wage-Risk Premiums | $1,232 | $0 | $1,232 | | **TOTAL** | **$3,124** | **$5,954** | **$9,078** |   **Employer Costs of Crashes by State**  Table 8 details employer costs of motor vehicle crash injuries, on- and off-the-job, by state. Costs per employee vary widely by state. Differences in injury severity, age of workforce, regional and local characteristics, and completeness of reporting cause the variance. Critically, the methods for calculating state costs (documented in the Appendix) ignore differences in non-fatal injury severity between states. This weakness probably produces cost estimates that are too low in rural states relative to urban states, which typically have lower average speeds and consequently less severe injuries.  **[view Table 8](http://www.nhtsa.gov/people/injury/airbags/EconomicBurden/pages/Table%208.htm)**  Differences in labor force participation rates and family size between states could cause employer costs per employee to vary even if safety levels and prices were equal. Cost differences between states may reflect price and income variations more than differences in safety. Finally, differences between states may result from differing completeness of reporting of occupational or crash injuries rather than actual differences in injury rates.  Table 9 provides estimates of employer costs of alcohol-involved injuries by state. These estimates account for regional differences in alcohol-impaired driving. They were obtained by assuming that the ratio between employers’ and society’s costs of alcohol use remain the same across the states.  **[view Table 9](http://www.nhtsa.gov/people/injury/airbags/EconomicBurden/pages/Table%209.htm)**  **Employer Costs of Crashes by Industry**  Employer costs of on-the-job motor vehicle crashes by industry are shown in Table 10. As expected, costs per employee are higher for industries where motor vehicles are used intensively. The highest costs per employee are in agriculture and forestry, land transportation, mining, heavy construction, and automotive sales and repair. Costs were assigned by vehicle type in-volved in the crash. Heavier vehicles have smaller fatality costs but higher property damage costs. The SOII obtained reports on fewer than 30 percent of occupational crash survivors with work loss. We used the reported cases to infer the distribution of unreported cases. Thus, cost variations between industries should be compared cautiously. They may result from differing completeness of reporting.  **[view Table 10](http://www.nhtsa.gov/people/injury/airbags/EconomicBurden/pages/Table%2010.html)**  **Conclusions**  Employer health care (medical) spending for motor vehicle crashes was $7.7 billion in 2000. Another $8.6 billion was spent on sick leave and life and disability insurance for crash victims. Traffic safety programs provide an alternative to reduce these costs without reducing the benefits offered to employees.   Protecting employees from motor vehicle crash injury can be a profitable investment of time and resources. In fact, eliminating alcohol-impaired and unrestrained driving could reduce employer costs by $15 billion annually.   Developing a proactive traffic safety program is one of the best ways to control costs from workplace vehicle crashes.  A blueprint for such a program can be found in the Network of Employers for Traffic Safety (NETS) Traffic Safety Primer, which suggests the following 10 steps to improve safety and minimize crash risk:   1. Senior Management Commitment 2. Written Policies and Procedures 3. Driver Agreements 4. Motor Vehicle Registration Checks 5. Crash Reporting and Investigation 6. Vehicle Maintenance and Inspection 7. Disciplinary Action System 8. Reward/Incentive Program 9. Driver Training/Communication 10. Regulatory Compliance | | | | | | | |  |  |
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