

Workplace Injury Causes and Costs

Liberty Mutual Releases Study on Top 10 Workplace Injuries

Workplace injuries continue to cost American companies billions of dollars each year. The 10 leading causes of disabling workplace injuries account for 86 percent of the estimated \$40 billion in wage and medical payments made to workers injured on the job in 1999, the last year for which data are available, according to the second annual *Liberty Mutual Workplace Safety Index* by Liberty Mutual Group.

Liberty identified the leading causes of disabling workplace injuries and their associated direct costs using its own data, and findings from the Bureau of Labor Statistics and the National Academy of Social Insurance.

Findings from the *2002 Safety Index* closely match results from the company's *2001 Safety Index*. The rank order of the 10 leading causes of workplace injuries was identical, with "overexertion" and "falls"

being the leading injury causes. The direct cost of workplace injuries (payments to injured workers and their medical care providers) rose 3.6 percent to \$40.1 billion in the *2002 Safety Index* from \$38.7 billion in the *2001 Safety Index*. The total financial impact of both direct and indirect costs (i.e., lost productivity, overtime) is estimated by the *2002 Safety Index* to be as much as \$240 billion (results are located at www.libertymutual.com.)

The results of the study provide valuable information for the public policy discussion over the call for voluntary ergonomic guidelines by the Occupational Safety and Health Administration (OSHA).

"The findings of the *Safety Index* will help in the discussion about the most effective way to improve workplace safety by identifying the top 10 causes of workplace accidents and their direct and indirect costs," noted Karl Jacobson, senior vice

Table 1. Top 10 Leading Causes of Disabling Workplace Injuries Resulting in Five or More Days of Missed Work

Rank	Injury Cause	Percentage of total direct costs	Estimated direct cost nationwide
1	Overexertion ¹	25.5%	\$10.3 billion
2	Fall on same level	11.5	4.6
3	Bodily reaction ²	9.4	3.8
4	Fall to lower level	9.2	3.7
5	Struck by object ³	8.5	3.4
6	Repetitive motion ⁴	6.7	2.7
7	Highway accidents	5.9	2.4
8	Struck against object ⁵	4.3	1.7
9	Caught in/compressed by equipment	4.1	1.6
10	Contact w/temp. extremes ⁶	1.0	0.4
Top 10		86.1%	\$34.60 billion
All Injuries		100%	\$40.1 billion

- ¹ Injuries from excessive lifting, pushing, pulling, holding, carrying or throwing of an object.
- ² Injuries that result from a single incident of free body motion (bending, climbing, and slipping or tripping without falling).
- ³ Such as a tool falling on a worker from above.
- ⁴ Injuries due to repetitive stress or strain.
- ⁵ Such as a worker walking into a door frame.
- ⁶ Includes exposures to hot and cold environments as well as contact with hot or cold objects.

Source: 2002 Safety Index

president of Liberty Mutual, who is responsible for safety and health research and product development. "The Index provides motivation and a road map to

help employers reduce all workplace accidents including those that are ergonomic-related."

According to the *2002 Safety Index*, the leading causes of disabling workplace injuries that resulted in employees missing five or more days of work in 1999 are listed in Table 1.

"Overexertion" and "repetitive motion" are leading causes of ergonomic-related workplace injuries.

"The study highlights the major injury causes, direct and indirect costs, and importance of workplace safety, as well as providing information employers can use to reduce injuries," said Jacobson. "The consistency of the findings lends authority and points to the strength of the study's methodology. Having two years of similar data will encourage risk managers and safety directors to use the *Safety Index* to focus their safety resources on the major causes of workplace injury, benchmark their current performance and reduce injuries."

Jacobson noted that companies absorb all of the indirect cost of a workplace injury, while the financial impact of the accident's direct cost depends on a company's specific workers compensation program (i.e., the level of deductible, self-insurance). Each

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injury's indirect costs are far larger than its direct costs. In fact, 56 percent of business executives from a range of geographic locations, company sizes and industries surveyed by the *2001 Liberty Mutual Executive Survey of Workplace Safety* reported that businesses faced between \$2 and \$5 of indirect costs for each \$1 of direct costs.

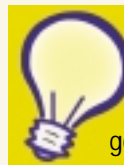
As a result, the \$40 billion of direct costs from workplace injuries identified by the *2002 Safety Index* produced \$80 billion to

\$200 billion of indirect costs for a total financial impact of between \$120 billion to \$240 billion.

"Workplace injuries needlessly sideline valuable employees and waste financial resources," said Gary Gregg, executive vice president of Liberty Mutual's Commercial Markets, which provides commercial insurance coverage to large- and medium-sized companies. "Improving workplace safety protects employees and helps companies better manage their

financial performance. This is especially important today, with a recession hurting revenues and profits, and costs, including commercial insurance premiums, rising."

The *2002 Safety Index* also provides the opportunity for comparing consistent, quantifiable workplace safety data to qualitative results from the *2001 Executive Survey of Workplace Safety*, which interviewed 200 business executives



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from a range of geographic locations, company sizes and industries.

Gap Between Perception and Reality
Comparing the results of the *2002 Safety Index* with those of the *2001 Executive Survey* confirms a gap between how employers view workplace injuries and the ranking of the leading injury causes

Appendix 1. The Benefits of Workplace Safety

In addition to protecting employees from the physical, economic and social impact of workplace injuries, improving workplace safety benefits a company in three ways:

Avoiding Costs—Preventing workplace injuries helps the company avoid the direct costs (payments to injured workers and their medical care providers) and indirect costs (overtime, lost productivity, etc.) associated with the injury.

A company absorbs all of the indirect costs of a workplace injury, while the financial impact of the injury's direct costs depends on a company's specific workers compensation program (the level of deductible, self-insurance, et cetera). Each injury's indirect costs are far larger than its direct costs. In fact, 56 percent of employers surveyed by Liberty Mutual reported that there were between \$2 and \$5 of indirect costs for each \$1 of direct costs.

As a result, the \$40 billion of direct costs from the disabling workplace injuries identified by the *2002 Index* produced \$80 billion to \$200 billion of indirect costs, for a total financial impact between \$120 billion and \$240 billion.

Reaching Financial Goals—Preventing workplace injuries makes it easier for a company to reach its financial goals. For example, a company with \$100,000 of costs related to workplace injuries will have to produce an additional \$2 million in revenue just to cover this expense, assuming a 5 percent profit margin.

Better Workers Comp. Premiums—Reducing workplace injuries over time may position a company for more favorable workers' compensation premiums, since these rates are generally based, in part, on past experience. In fact, while such premiums are increasing in all regions and industries, the rate of increase for companies with good safety performance is significantly less than that of employers with poorer safety records.

Appendix 1. Preventing Workplace Injuries

Guidelines for addressing the top five causes of workplace injuries identified by the 2002 Liberty Mutual Workplace Safety Index.

Injury Cause

Overexertion—Injuries from excessive lifting, pushing, pulling or carrying of an object.

Guidelines

- Evaluate production, storage and display workflows to remove excessive reaching, bending, pushing, pulling, lifting, loading and unloading.
- Use mechanical lifting aids such as hoists or adjustable lift tables to reduce the need to bend, reach and twist. Use carts, tables or other mechanical devices to move and position heavy objects.
- Design jobs to allow sufficient rest pauses.

Fall on same level.

- Keep floors free of holes or structural defects, water, grease/oil and other potential fall hazards.
- Provide footwear with the tread pattern and soling necessary to prevent slips.
- Provide adequate lighting for all interior and exterior walking surfaces.
- Highlight transitions in floor height.
- Remove snow and ice in parking lots and on sidewalks.
- Use appropriate non-slip floor surfaces, cleaners and waxes.

Bodily reaction—Injuries resulting from bending, standing, reaching and slipping or tripping without falling.

- See Overexertion, Fall on same level and Fall to lower level.

Fall to lower level—Such as falling from a ladder or over a railing.

- Use appropriate ladders capable of comfortably reaching work or storage heights.
- Use mechanized material handling devices to access higher levels.
- Regularly inspect and repair all ladders and lifting equipment.
- Provide railing protection for areas with abrupt floor level changes (i.e., loading dock).
- Avoid storage of heavy or awkward items above the reach of most workers.
- Provide handrails and slip-resistant treads for all stairs. Avoid storage of any kind on stair treads and walkways.
- Install nets when other types of fall protection cannot be used.

Struck by object—Such as a tool falling on a worker from above.

- Require that aisles are marked clearly and unobstructed with adequate clearance.
- Train and supervise lift truck operators.
- Enforce speed controls and install mirrors at blind spots to enhance visibility.
- Stabilize overhead storage. Avoid high storage that may cause overloading.
- Use traffic control mirrors in “intersections” or areas of the building and exterior grounds where pedestrians and vehicles interact.
- Avoid storing or displaying products or equipment in areas where people travel.
- Restrict access underneath work areas.
- Use equipment and power tools only with the manufacturers’ guards in place.
- Maintain all equipment and tools by following the manufacturers’ guidelines.
- When approaching mobile equipment, workers always should make eye contact with the driver.

based on their direct costs. The business community focuses attention on certain causes of workplace injuries and may need to realign their workplace safety priorities.

For example, in the 2001 Executive Survey, executives reported “Repetitive Motion” is the most important cause of workplace injuries. According to the 2002 Safety Index, however, five other injury causes each produced greater direct costs.

Similarly, executives placed less priority on injury causes that have greater potential impact. For example, executives reported “Falls on Same Level” as the seventh most important cause of workplace injuries, while the 2002 Safety Index ranked this as the second most costly injury cause.

In addition to this gap, the Executive Survey reported on workplace safety’s return-on-investment. Ninety-five percent of business executives report that workplace safety has a positive impact on a company’s financial performance. Fully 61 percent of these executives indicated their companies received \$3 or more for each \$1 spent improving workplace safety.

Methodology

The 2002 Safety Index is based on Liberty Mutual’s claims data and findings from the federal Bureau of Labor Statistics and the National Academy of Social Insurance.

The first step in developing the study was to apply Liberty Mutual 1999 workers compensation claims cost data to the workplace injury frequency information provided by the U.S. Department of Labor’s Bureau of Labor Statistics for that year.

To broaden the Safety Index, the relative proportions of each injury type then were applied to national estimates of the cost of workers compensation benefits from the National Academy of Social Insurance, which includes information from a broad range of workers compensation insurance companies. **WQP**

About the Contributor

Boston-based Liberty Mutual Group is a diversified international group of insurance companies and a multiline insurer in the North American property and casualty industry. The group has more than \$50 billion in consolidated assets, more than \$13 billion in consolidated revenue and ranks 142nd on the Fortune 500 list of largest corporations in the United States. Along with being a provider of workers compensation insurance, programs and services in the United States for 65 years, Liberty Mutual provides a wide range of products and services including general liability; commercial auto and business property; group life and disability; private passenger auto and homeowners insurance; and individual life and annuities. The company may be reached at www.libertymutual.com.

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