

Profiting from Safety

Losses due to construction deaths or injuries are paid from profits. Learn how an effective safety program can reverse this negative effect on the bottom line.

By Michael Warning and Dave Smith

Reducing the number of construction-related deaths and injuries is the most compelling reason for improving jobsite safety. The pain and suffering of the victims and their families and friends are immeasurable costs associated with construction accidents. Easier to quantify are the direct and, to a lesser extent, indirect costs of worker injuries. Taking a close look at these costs will help you better understand the benefits of an effective safety program.

Direct costs

We usually think of direct costs—those covered by workers' compensation insurance—when evaluating the economic impact of an injury. Medical costs include ambulance service, emergency-room care, doctor treatment, medication, and hospitalization. Disability benefits, including a percentage of the injured worker's lost wages, also are direct costs. Though these costs are easy to track, they're sometimes overlooked if they're combined with workers' compensation insurance costs as part of the overall figure for labor burden.

Contractors may not realize that every injury-producing accident increases the premium they must pay for workers' compensation insurance by changing their experience modification rate. Experience Modification Rate (EMR) calculations are based on injury claim frequency and severity costs. While a major severe accident will increase the EMR, many minor-injury accidents may also substantially increase it. The rationale for increasing the EMR is that it provides a financial incentive for preventing injuries. EMR increases mean that injury costs continue long after a contractor completes the project on which an injury occurred.

Indirect costs

Many indirect costs are hidden and hard to quantify (see "Hidden Accident Costs). Some authorities consider it to be an indirect cost when injured workers sue a contractor for additional payments beyond their workers' claims costs (Ref. 1). Hinze says indirect costs are those for which there is no retrieval mechanism to accurately associate them with injuries (Ref. 2). Others consider any uninsured costs to be hidden costs (Ref. 3).

Indirect costs are hard to estimate, but studies have been conducted in an attempt to relate them to direct costs. Estimated ratios of hidden to direct costs from these studies range from less than 1-to-1 up to 36-to-1. A conservative estimate for the ratio is 2-to-1, although several authorities use a 4-to-1 ratio in calculating total costs of injuries related to accidents.

Impact on profits

Using the conservative 2-to-1 figure and knowing your company profit margin, you can estimate the gross revenue increases you must generate to offset the total cost of an accident. As shown in the table, contractors working on a low profit margin must significantly increase gross revenues to offset the cost of even a relatively minor injury-producing accident.

Consider, for instance, a case in which a worker slashes his arm on a piece of protruding rebar tie wire, creating a cut deep enough to require stitches but not severe enough to cause any lost work days. If the direct costs of this injury are \$500, the indirect cost is assumed to be \$1,000, for a total cost of \$1,500. If the contractor's profit margin target is 5%, the table shows that he has to generate \$30,000 additional new gross revenue to cover the loss for this minor accident. Double the profit margin, and you halve the gross-revenue increase needed. The only other option is decreasing profit by the \$1,500.

When the injuries are more severe, the stakes increase dramatically. Consider a worker's broken leg from a falling form, where the injured worker then sues the contractor. Direct costs are \$15,000, and because of the lawsuit costs, we'll use a multiplier of 4 to estimate indirect costs. That brings total costs to \$75,000. Again using the table we see that with a 5% profit margin, the contractor must generate \$1.5 million in new gross revenue to pay for the accident. Safety is indeed a construction profit center.

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References

1. Raymond E. Levitt and Nancy M. Samuelson, *Construction Safety Management*, Second edition, John Wiley & Sons Inc., New York, 1993.
2. Jimmie W. Hinze, *Construction Safety*, Prentice-Hall, Upper Saddle River, N.J., 1997.
3. Bird, Frank E. Jr. and Ray J. Davies, *Safety and the Bottom Line*, Institute Publishing, Loganville GA, 1996

Hidden accident costs

1. Cost of lost time of injured employee.
2. Cost of time lost by other employees who stop work out of curiosity or sympathy or to assist the injured employee.
3. Cost of time lost by foremen, supervisors, or other executives to:
 - Assist the injured employee
 - Investigate the cause of the accident
 - Arrange for the injured employee's production to be continued by some other employee
 - Select, train, or break in a new employee to replace the injured employee
4. Cost of time spent on the case by medical professionals not paid for by the insurance carrier.
5. Cost due to damage to the machine, tools, or other property.
6. Incidental costs due to interference with production, failure to fill orders on time, loss of bonuses, and payment of forfeits.
7. Cost to employer under employee welfare and benefit systems.
8. Cost to employer in continuing the wages of the injured employee in full after his or her return even though the services of the employee (who is not yet fully recovered) may for a time be worth only about half of their normal value.
9. Cost due to the loss of profits on the injured employee's productivity and on idle machines.
10. Costs resulting from workers' weakened morale due to the accident.
11. Overhead cost per injured employee—the expense of light, heat, rent, and other such items, which continues while the injured employee is a nonproducer.

Adapted from: H.W. Heinrich, *Industrial Accident Prevention*, First edition, McGraw-Hill, New York, 1931.

Gross Revenue Increases Required to Cover Injury Costs

Total Injury Cost	Profit Margin			
	1%	3%	5%	10%
\$ 1,000	100,000	33,000	20,000	10,000
\$ 5,000	500,000	167,000	100,000	50,000
\$ 10,000	1,000,000	333,000	200,000	100,000
\$ 50,000	5,000,000	1,667,000	1,000,000	500,000
\$100,000	10,000,000	3,333,000	2,000,000	1,000,000
\$500,000	50,000,000	16,667,000	10,000,000	5,000,000