

What Do Accidents **TRULY COST?**



Determining TOTAL Incident Costs

By **JEFFERY E. LABELLE**

Safety and health (S&H) professionals have long stated (in various ways) that “safety pays” and that effective S&H processes reduce the risk of injuries and illnesses and, therefore, help control workers’ compensation (WC) and related expenses. Few safety departments have systems in place to verify these statements, however. Furthermore, companies which use verification systems that simply capture cash costs are missing a significant piece of the true incident cost puzzle.

Determining how much incidents truly cost can be instrumental in answering the following questions:

- 1) How does an S&H organization show value-added existence when direct WC costs continue to decline each year?
- 2) Why spend money on safety and health when injury and illness rates are below industry average?
- 3) When injury and illness rates are the only measure used to assess safety effec-

tiveness, why should managers be concerned about low incident-related rates?

4) Why focus on safety when OSHA is no longer the driving force behind a company’s desire to reduce incidents?

In today’s business environment, the S&H department often must justify not only the process and procedural improvements it recommends, but also its very existence. If the department does not understand an organization’s true financial loss, senior management will find it difficult to see what financial benefits the S&H department provides. As the axiom says, “If you don’t measure it, you can’t manage it.”

WHY ARE WE HERE?

Companies are in business to maximize profit. One way to support profit maximization is loss minimization. Thus, to succeed, the S&H department must align its goals with those of the organization—profit maximization coupled with loss minimization.



Does safety pay? In today's business environment, the S&H department often must justify not only the process and procedural improvements it recommends, but also its very existence.

For a safety department, "profits" equate to a safe environment and a caring workforce, while "loss" is an incident. To best align its goals, the safety department must determine 1) how much its "profits" return to the company; and 2) how much "losses" cost the organization. This article reviews a methodology for determining a company's total incident costs.

DEFINITIONS

As used here, the term *incident* encompasses first-aid cases, recordable cases, restricted workday cases, lost-workday cases, permanent disability cases, near-misses and property damage cases. While this article focuses on the first five types of incidents, the methodology described may be applied to the last two as well.

To begin, one must understand the two basic categories of cost:

- **Direct incident costs** represent actual cash outlays attributable to the incident; such outlays would not have been necessary had the incident not occurred.

- **Indirect incident costs** represent costs in terms of time and resources (other than cash) incurred as a result of the incident.

Thus, total incident costs are the sum of these costs.

METHODOLOGY

The overall methodology described is quite simple but, "the devil is in the details." To determine average direct incident costs for a given time period, one sums the actual cash costs, divides that total by the number of incidents, and records this average in the total incident costs (TIC) worksheet (Figure 1).

To determine average indirect costs, one must multiply the average time (in hours) a department spends on incidents by the average hourly compensation rate; the result is then recorded in the TIC worksheet.

Finally, one adds direct costs to indirect costs to arrive at total incident costs. This process is then repeated for each type of incident under review.

Determine Direct Incident Costs

Let's focus more closely on each type of cost. Direct incident costs have traditionally been the single financial figure used to track incident costs. They are easy to assemble, accurate and reflect actual cash outlay incurred.

Table 1 shows categories and examples of direct costs. This list should be customized to reflect a specific company's experience. Direct/indirect costs per incident type (e.g., first-aid, lost-time) are based on averages, which simplifies the process; however, gathering data is often the most challenging part of the cost-determination process.

To complete the direct cost portions of the TIC worksheet:

1) Select a reasonable time period to study (this will depend on the accuracy of data available). Typically, the longer the reference period and the more incidents included, the more accurate the average value will be to the actual value.

2) Select one type of case to review (e.g., start with first-aid cases).

3) Using the TIC worksheet, determine total cash outlay for each category (e.g., WC, ambulance service) within the given time period.

4) Divide each category cost total by the number of cases for that time period. Record the resulting average on the TIC worksheet.

Example: WC Direct Costs for Recordables. Obtain a copy of the firm's compensable incidents for the given time period. Cross-reference cases with the OSHA 200 log. Determine the sum cost for recordable incidents and calculate the mean. Record the mean on the TIC worksheet at the intersection of "Recordable Cases" and "Workers' Compensation."

As this example shows, this process is fairly straightforward. Calculating indirect costs is often more difficult, however, due to the large number and wide range of variables involved.

Determine Indirect Incident Costs

This process is quite different than that used to determine direct costs. Table 2 lists several examples of common indirect costs, which, if overlooked, can be a significant drain on a firm's resources—funds that could otherwise be used to further its goals and objectives.

FIGURE 1 TIC Worksheet

	FIRST-AID CASE	RECORDABLE CASE	RESTRICTED WORKDAY CASE	LOST-WORKDAY CASE	PERMANENT DISABILITY
COST CATEGORY					
<i>Direct Costs</i>					
Workers' Compensation					
Medical-Related Treatment					
Medical Treatment Supplies					
Ambulance Service					
Drug Testing					
Job Accommodations					
New Equipment					
Indirect Costs					
Healthcare Professional					
Injured Worker					
Supervisor					
Return to Work					
Incident Review					
Lost Production/Productivity					
Human Resources					
Cost to Hire					
Manager					
Process Delays/Interruptions					
Security					
Training					
Legal					
TOTAL AVERAGE COST PER INCIDENT					

TABLE 1 Direct Incident Costs

DIRECT COST CATEGORY	EXAMPLE
Workers' Compensation	WC premiums
Medical Bills	Treatment by physician, nurse, hospital costs
Medical Treatment Supplies	Bandages, splints, antiseptic
Ambulance Service	Established fees
Drug Testing	Fees for off-site testing
Job Accommodations	Equipment or tool redesign or replacement; ergonomically designed chairs, keyboards
New Equipment	Costs of new equipment/parts purchased as a result of an incident

TABLE 2 Indirect Incident Costs

INDIRECT COST CATEGORY	EXAMPLE
Healthcare Professional	Consultation with the victim; treatment time; recordkeeping and filing; follow-up consultation(s).
Injured Worker	<p>All time spent away from the job attributable to the incident. One way to determine this is to ask the nurse or supervisor. Be sure to include travel time to/from the nurse's office, waiting time, treatment and follow-up, and time spent visiting the offsite doctor's office.</p> <p>An important, yet often overlooked contribution to indirect cost estimates is the percent reduction in efficiency due to restricted work. Often, an injured worker can return to the job at 100 percent; occasionally, however, the worker is only able to work at 90 percent until fully recovered. Once the percentage of restricted work has been determined, it can be incorporated into the indirect cost summary.</p> <p>Example: Hourly rate = \$10; cumulative time lost due to incident = 2 hours. This yields an initial \$20 indirect cost. Restricted work efficiency level = 90 percent for 8 hours. Since \$10 x 0.9 yields work at a level of only \$9/hour, there is a \$1/hour indirect loss for each hour worked at the restricted level. Therefore, that \$1/hour x 8 hours yields an additional \$8 loss, which should be added to the original \$20 calculation; thus, the ultimate indirect cost is \$28.</p>
Supervisor	Consultation with the victim; recordkeeping and filing; follow-up consultation; disciplinary action.
Return to Work	Consultation, work process modifications.
Lost Production/Productivity	Lost production represents the expected income that would have been received from maintaining production/service that was lost and is attributable to the incident. Often, this cost amounts to the highest of all indirect costs. Also consider the lost productivity of witnesses and colleagues in discussing and investigating the incident.
Incident Review	Sum hourly rates of the incident investigation team, multiply by the average time needed to complete a thorough investigation for each cost category.
Human Resources	Managing the case back to 100-percent duty, consultation, recordkeeping and filing.
Cost to Hire	The cost in terms of all necessary activities to bring in a replacement employee to work while the injured employee recovers.
Manager	Consultation with the victim; recordkeeping and filing; follow-up consultation; disciplinary action.
Process Delays/Interruptions	Represents lost income expected or lost personnel productivity when a process is delayed or interrupted as the result of an incident.
Security	<p>Since security is not involved in all cases, one must first determine the percentage of involvement.</p> <p>Example: Assume 900 cases occur and security is involved in 10 percent (or 90) of them. 90 cases x 1 hour of time devoted x \$10/hour = \$900 for all cases worked on. If security contributes \$900 to the total, the cost for 900 cases = \$900/900 = \$1 contribution per case.</p>
Training	Include new or retraining efforts, instructor costs, paperwork, recordkeeping and tracking. For new/retrained employees on a new job, one can also perform an efficiency analysis similar to that of an injured worker (see above).
Legal	Calculate same as security costs.

This process can lead to a more-detailed cost/benefit analysis model, which will likely show that the cost of preventing problems is less than the cost of correcting them.

The first step is to determine, by category, the average time devoted to an incident. Next, the hourly compensation rate of those who perform incident-related tasks must be determined. Then, one multiplies the average time by the compensation rate to calculate indirect costs for each category. One may also choose to include indirect "income or resources lost" as a result of an incident (see Table 2).

To complete the indirect cost portion of the TIC worksheet:

1) Select a reasonable time period to study. For indirect costs, the time period is not as important as having a good estimate of time/resources contributed by the department.

2) Obtain the hourly compensation rate for those who perform incident management activities.

3) Determine how much time is devoted (on average) to handling each incident. Include all related activities, including consultation, form processing, telephone calls and filing tasks. Often, those who perform these tasks can provide the best estimate of time spent.

4) Multiply the hourly rate by the average number of hours spent managing incidents to calculate a cost category's indirect cost contribution. For example, an average time of one hour per recordable case at \$12/hour equals \$12 in indirect costs for each recordable case in that cost category.

5) Record the figure on the worksheet.

If hourly rate information is not available due to a confidentiality policy, ask the department manager to perform the calculation and provide the results.

When determining hourly rates, use base salary/hourly rates only; do not include compensation-related benefits, bonuses or commissions. These supplemental compensations are often difficult to determine and, unless applied consistently, introduce an unstable element to the calculations.

THE WORKSHEET IN PRACTICE

A 1998 survey-results article stated, "Improving production, quality, competitiveness and *documenting dollar savings* (emphasis added) are not skills or contributions that many managers expect from safety and health specialists. Perhaps managers don't believe safety and health specialists have the time or ability to accomplish these business-related gains" ("What Does Management Think" 22).

The methodology described here can help safety professionals develop this ability, which will enable them to:

- Present the true costs of particular or even specific incident types.

- Effectively manage incident costs, which may also lead to lower WC costs.

- Drive design, equipment or process improvements. The information gathered for the TIC worksheet can also help justify upgrades, new programs and training.

- Track incident cost information in the same manner as incident frequency and severity rates. Safety departments should be concerned with reducing the frequency and severity of incidents, as well as the related costs—both direct and indirect.

- Develop a more-detailed cost/benefit analysis model. This can be used to clearly relate the costs of new equipment, workstation design or process change to current expected incident cost savings. Furthermore, it will likely show that the cost of preventing problems is less than the cost of correcting them.

- Explain how the safety department, through effective incident cost management, adds value to the organization.

- Apply calculated costs to financial models, which leadership may appreciate.

UPDATE THE WORKSHEET

The TIC worksheet should be revised as more-reliable and more-accurate data become available. Calculations will continue to approach the "true" value with each revision. The tool should also be updated to reflect changes in the workforce, workplace and compensation rates, as well as WC premium modifications and task efficiency improvements.

Some indirect cost calculations will be based on "best judgment" simply because these costs have not been previously tracked by the organization. As departments become aware of this process and its benefits, a more-thorough tracking procedure can be developed to capture more-accurate data.

Although not included in the TIC worksheet, *potential* average costs for near-miss incidents can be quantified (even though no real loss has occurred). These costs can be determined by asking, "Had events been slightly different, how severe might the close-call incident have been?" For example, under different conditions, a lost-time incident may have resulted. By substituting the average cost per incident for lost-time incidents from

the TIC worksheet, the average potential costs per close-call can be calculated.

This methodology can be applied to other scenarios as well; the worksheet could be completed based on specific types of injuries (e.g., back injuries). To achieve this, one must simply determine the direct costs associated with the specific injury for each type of incident and use the revised total incident cost figure. The indirect cost methodology could then be repeated to focus on the specific type of injury as well.

CONCLUSION

By using the methodology described, safety professionals will be able to paint a more-detailed picture of the true costs of incidents. By working to minimize these costs, safety professionals will be able to exhibit fiscal responsibility and show the value-added aspects of safety efforts. The TIC worksheet is a powerful tool in the quest for safety excellence. ■

REFERENCES

Alexander, D.C. "Economics Program Management." Presentation at 1998 American Industrial Hygiene Conference, Atlanta.

Minter, S.G. "Making Better Safety Investments." *Occupational Hazards*. Dec. 1997: 8.

Neville, H.G. "Workplace Accidents: They Cost More Than You Might Think." *OH Interactive*. March 1998. <<http://www.penton.com/oh/member/library/HTML/articles/1998/0398/workplaceaccidents398.html>>.

"What Does Management Think About Safety and Health?" *Industrial Safety & Hygiene News*. Nov. 1998: 22.

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