

Gathering Loss Data

Reasons to Gather, Review, and Analyze Loss Data

The risk manager can use the review of loss data as a loss exposure identification method in a variety of ways.

Evaluate Cost Effectiveness of Alternative Methods for Financing Losses

When evaluating potential costs/benefits of loss control alternatives, the risk manager can use loss data to assist in deciding which risks to avoid, which to control, which to transfer, and which to finance. Further, the risk manager can use loss data to assist in the risk financing decision between retention and insurance (internal versus external financing), and whether or not a loss sensitive or cash flow financing plan is appropriate.

Establish a Basis for Allocating Premiums and Loss Costs

When establishing a basis for allocating premiums and loss costs, the risk manager can create incentives or disincentives to help reduce and control losses by charging back losses to the departmental level, but the risk manager must always be careful not to erase the positive operations results of a location with the allocation of the costs of one loss. The risk manager should use an objective basis for sharing the total cost of risk. Consider a blend of exposure base and experience base, assigning cost of insurance and cost of losses to the cost center responsible. Many risk managers use a "minimum/maximum" model to prevent a single shock loss or one bad year from eliminating a cost center.

Other Uses

The risk manager can also use loss data to identify the causes of the most frequent and serious losses, to quickly and easily recognize trends in loss experience, to help focus management on the organization's overall total cost of risk and gain their support for loss control efforts, and to evaluate potential costs/benefits of loss control alternatives.

Gathering and analyzing loss data can also be used as a method for evaluating performance between operating units, vendors, and in-house adjusters, as well as benchmarking loss experience.

In addition, it is used when considering product or service development and pricing. The total cost of risk is included in the price of product or service, or the product or service may be redesigned based on expected losses.

The risk manager must have the ability to respond to litigation or regulatory actions by federal or state agencies, such as the federal or state Occupational Safety and Health Administration (OSHA), Consumer Product Safety Commission (CPSC), Environmental Protection Agency (EPA), or Food and Drug Administration (FDA). By gathering and analyzing loss data, the risk manager has the ability to respond in a meaningful way.

The risk manager must also be able to satisfy insurance underwriting requirements when insurance is selected as a financing option. Working with an agent or broker (or sometimes directly with a carrier), the risk manager will use loss data to negotiate premiums and coverage restrictions or exclusions, to set reserves, and to establish the number of letters of credit or other required collateral.

Finally, the risk manager may gather and analyze loss data to use as a basis for establishing and monitoring vendor performance agreements, such as those used with a third-party administrator or loss control service.

Obtaining Loss Data

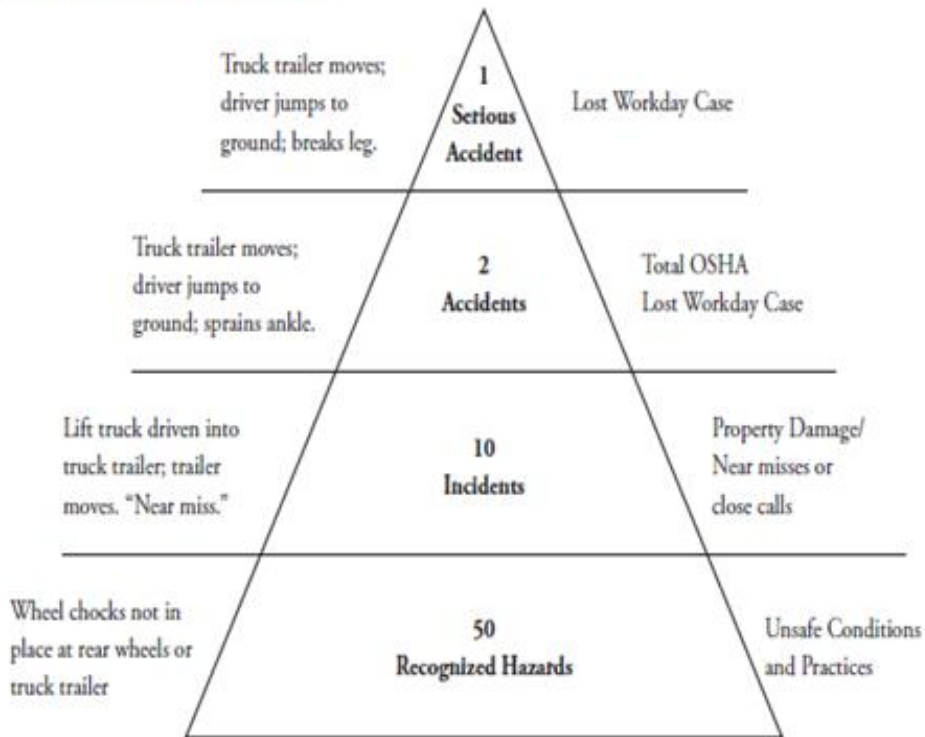
Internal Sources

Loss data can be obtained from several different places. The first, most obvious, source is the organization's own loss experience. The organization's loss experience must include incidents, near-miss reports, and accidents (see Exhibit 5.1). The old underwriting axiom of "frequency leads to severity" remains true: if an organization keeps having accidents, incidents, or near-miss events, eventually one of them will be severe. This is commonly expressed in the approach of risk control as actions to prevent a loss and actions to reduce the impact of a loss, or minimizing frequency through prevention and minimizing severity through reduction of a loss that was not prevented.

Also, the same accident cause (for example, leaking water from a refrigeration case in a supermarket) might produce far different results. For instance, a 17-year-old male who slips and falls might get up with only his coolness or pride injured, but a 75-year-old woman who slips and falls might break her hip.

Loss data can also be obtained from first aid logs. First aid logs, while primarily capturing employee injuries, can also be used to document injuries to third parties. Loss data can be captured and recovered from Occupational Safety and Health Association (OSHA) logs, insurance company and third-party administrator (TPA) loss runs, litigation records (insurable and uninsurable lawsuits), from human resources and operations departments, and accounting entries (building and equipment repairs and replacements). The risk manager should be aware that non-claims people usually review loss runs and, many times, these people do not have expertise in this area.

Exhibit 5.1: Incidents and Accidents



External Sources

Loss data can also be obtained from external sources. While this loss data documents the experience of other organizations, the collective experience may be useful at several levels. First, it may indicate losses others have had that have not yet affected the organization. Second, the accumulation of loss data may provide a degree of credibility that the organization's loss data does not have. However, no organization is exactly like another, and extrapolating information from collected data from many different organizations to apply to an individual organization may not always be appropriate.

Sources of external loss experience include industry associations. Insurance carrier loss records (on a company-wide basis) are another source, although the underwriting risk selection process may introduce unknown biases. Additionally, the risk manager can acquire incidence rates from NAICS (North American Industry Classification System—formerly SIC) Code from the Bureau of Labor Statistics (BLS) and Bureau of Transportation Statistics (BTS). Loss data is also available from the National Safety Council (NSC) Injury Facts, the Cost of Risk Survey prepared by Risk and Insurance Management Society (RIMS), the National Council on Compensation Insurance (NCCI), and the American Trucking Association (ATA), to name a few.

Specific Types of Loss Data to be Collected

The risk manager must finely balance the volume of loss data that can be collected and its attendant costs against the anticipated benefits of having the data to analyze and use. The amount of loss data that can be collected is nearly unlimited, but much of it may be of little value. The risk manager, however,

can establish protocols for the capturing of basic loss data that will certainly be needed. This data will form the basis for each loss record, and taken collectively, the entirety of the loss data that will be analyzed and used in decision making.

The first determination the risk manager must make is the category of loss, e.g., property damage, auto accident, employee injury, injury from product, etc. While property and net income losses can be complex, the issues surrounding these losses are largely accounting in nature. The most challenging losses are those involving people (such as employees, customers, and the general public with no connection to the organization). Losses involving human resources or liability to third parties for personal injury, emotion, and the vagaries of human behavior become problematic, partially because recollection of "facts" is clouded by perceptions and emotions. A quasi-legal doctrine never taught in law schools, but one acknowledged by lawyers and judges is, "Memory is enhanced by the convenience of forgetfulness."

When the loss involves an injured employee, the level of data that should be collected is the claimant name, date of hire, and occupation at time of accident. The next level is the date and time of loss (for example, year, date, day of week, shift, time of day), as well as division, department, or plant to determine if a "weekend" or off-duty accident has shown up as a workers' compensation claim. It is also important to know if one shift or department is having an abundance of accidents. A supervisor's or manager's name should also be noted in the loss record. If the individual is not an employee, e.g., a customer or other third party, similar information is needed, such as: name, address, age, occupation, time and location of the incident, and particularly any witnesses' names and contact information.

The type of loss, e.g., sprain, strain, laceration, disease, water damage, or physical damage, should be noted. When an injury occurs to a person, the body part affected by the injury should be noted. Finally, the risk manager will be interested in the hazards that led to the accident, as well as the actual cause of the accident. The cause should never be cited as "the employee was not working safely" or "the pedestrian was not watching where he was going." The cause should be a specific, such as a fall from height, repetitive motion, inhaling fumes, electrical overload, or tank leak. A hazard should also be specific, such as a noise level, slippery surface, unprotected combustible storage, or slippery walkway.

Exposure Data

Loss data is often more valuable when losses are indexed against key units of measure for an organization (e.g., indexed or compared against an exposure basis that will allow accurate comparisons from one department or group to another, or from one time period to another). Without indexing against exposures, a loss frequency that doubles may appear to be a serious failure in a loss control program, but if the corresponding exposures have quadrupled, the analyst can prove that the actual rate of occurrence has decreased significantly.

Depending upon the type of loss data, a number of exposure units can be used to index losses: revenue, gross receipts, net income, units of production, payroll by class code, headcount or hours worked, vehicles by type, vehicles by geographic area, annual mileage, square footage of building, and property values (which could include book value, actual cash value, or replacement cost). The risk manager must take care to connect an exposure basis to losses through an analysis of causation—not correlation. For example, in a retail store situation, slip and fall losses can easily be connected to square footage. A 100,000 square foot store should

have twice as many slip and fall losses as a 50,000 square foot store, all other factors being equal. However, store area can be misleading, as a high-traffic location, such as a fast-food restaurant of 10,000 square feet, may have many more losses than an identical floor area housing a heavy equipment distributor's showroom. Gross receipts are frequently considered an acceptable alternative to area, but again, in the case of the fast-food restaurant vs. heavy equipment showroom, the annual gross receipts may be identical for the two businesses. In the case of the restaurant, there may be 50,000 customers each making a \$10 purchase, while in the equipment showroom, there may be only a few customers perusing the \$500,000 bulldozer that one finally purchases. Instead, for a fast-food restaurant, customer count may be the appropriate exposure unit, instead of the more obvious square footage or gross receipts.

Evaluating and Ensuring the Quality and Credibility of Loss Data

To ensure the quality of loss data, the risk manager must be able to ensure statistical credibility and completeness and identify changes in loss environment, as well as consider other variables.

A small number of highly variable losses over a short period of time have limited predictive value. In other words, to be statistically credible, there should be a substantial number of losses extended over a sufficient period of time. One year is never enough, and even five years may be suspect (in spite of the insurance underwriter's insistence on that time frame).

However, more years are not always better. For example, if 20 years of losses are used for employee injuries, technology in the workplace may have changed significantly over that lengthy time period, biasing the results.

There should also be minimum variability in frequency and severity of losses, and stable operations over time (consistent size and makeup of exposure base). A key to improving the quality and format of data is to work closely with third-party administrators and insurance carrier claims departments. Even then, the formats and practices of outside organizations, such as the third-party administrators and insurance carriers, are primarily designed for their convenience and use, not for the risk manager's credibility.

Comparisons of data are invalid if comparisons are not made on an "apples to apples" basis. To ensure completeness, validity, and consistency of data, the data must have the same reporting format; the criteria for reporting data should be consistent and well understood; and the same definitions should be used for hazards, cause, and injury type. There should be a system in place for validity checks to limit duplicate reporting and incorrect coding. The loss runs should have consistent policy years, deductibles, and valuation dates. If they do not, interpolation should be used to make them consistent. Also, incurred but not reported (IBNR) reserves should be taken into account. (Some risk managers use a "comparison period" as opposed to a "policy year.") Any risk management information system (RMIS) should allow selection of any period for comparison—e.g., the policy may be on a July 1 renewal period, but the risk manager wants to do comparisons on a calendar year basis.

The quality of loss data can be affected by changes in the loss environment that may have influenced past losses and the predictability of future losses. This would include introducing a new product or service; any changes in equipment, materials, or work process; any acquisitions, divestitures, or restructuring; legal and regulatory changes; changes in social and economic environment; any additional or resolved labor and management issues; changes in statutory benefits, inflation, or any other changes in wages; changes in

incentive or safety awards programs; changes in deductible; changes in insurance carriers or third-party administrators; changes in insurance coverage that may affect loss reporting (exclusions or broadenings); or demographic changes, e.g., age, gender, education level, ethnic background, or turnover.

Another consideration regarding the quality of data is the organization of that data. The typical loss run or loss history prepared by an insurance carrier or many third-party administrators is grouped according to policy period, and within the policy period, losses are shown chronologically. While there is an important reason for grouping losses by year, the risk manager should consider other possible sorting options, such as by size of loss, by date of reporting, by department or location, by day of the week, or any other criteria that will address the needs of the risk manager.

Other considerations that could affect the credibility and evaluation of data would be the cost of collecting data, any difficulty in collecting data, and the relevance and usefulness of data. There is a point of diminishing returns when the cost to collect the last possible bit of detail does not add any value to the claims settlement and recording process. The data collected must be relevant to the problem the risk manager is attempting to solve and it must be useful in that exercise. Finally, the risk manager must be acutely aware of the need to adequately secure confidential data and protect it from improper disclosure or from improper access or use.

Types of Analyses to Be Performed on Loss Data

When analyzing data, it is important to remember not to mistake data for information. Data is the input, but information is what becomes useful after the data has been analyzed. The risk manager should provide managers with information in the form of a summary or analysis of the data so that it is useful and relevant, meeting with them periodically to ensure that the reports suit their needs and allow them to make decisions.

There are as many ways to analyze loss data as there are senior managers to accept the reports. A few of them will be discussed here.

Frequency and Severity Rankings

Loss data can be analyzed by frequency and severity rankings. The report can sort the number of losses by severity range (whether dollar cost or lost time days). Another way to look at frequency/severity is to study the number and cost of losses at each location, product line, or for each type of vehicle. The data can be sorted by hazards, causes of loss, or types of loss with the highest cost of injuries. Another report can show frequency and severity of injuries as they relate to length of service of the worker or some other demographic data such as shift, time of day, or day of the week.

Evaluating Time Intervals

The risk manager can also evaluate loss data by evaluating time intervals. This might involve looking at the time between loss occurrence and reporting of claim, the time between loss occurrence and closing of the claim file, the average number of days of lost time or restricted duty, and the likelihood of return to work based on number of lost days.

Loss projections are determined from the expected annual losses, which can be calculated as:

$$\text{Average number of losses} \times \text{average cost of a loss}$$

Triangulation studies and analysis are used to determine loss development factors that can, in turn, be used to determine ultimate paid losses, ultimate loss reserves, and payouts. Triangulation can calculate the development in cost of losses from time of initial reserve to final claim settlement.

Factors to Be Considered for Financial Benchmarking

Benchmarking is “continually *comparing* an organization’s performance against that of the *best in industry* (competitors) or *best in class* (those recognized in performing certain functions well) to determine what should be *improved...*” Xerox was first organization to use this concept to improve its own performance. A company would want to benchmark when management is putting a baseline program into place, when internal trending and comparison are underway, and when improvement opportunities are sought.

The benefits to benchmarking include being able to keep track of continued improvement, being able to enhance “out-of-the-box” thinking and creativity, and being able to prioritize areas that need improvement.

It will be important to keep in mind that many risk management decisions will be based on the data collected. Senior management will need to know how the company compares with others in the industry, and how the performance of the organization compares from one year to the next or from one period to the next.

The smart risk manager knows to be aware of the common pitfalls of benchmarking. Being lower is not always better. It depends upon what is being compared; some comparisons should be higher. In addition, precision in results should not be implied where precision does not really exist.

Comparisons must be made on an “apples-to-apples” basis for consistency. Comparing a manufacturing operation to a sales office will not be a meaningful comparison. Also, comparing data that varies from one group to another will not give meaningful results. For instance, comparing the profits of one group to the sales of another will not result in a meaningful comparison.

It also is important to have enough data to make a meaningful comparison. An insufficient comparison group population will not give results that the risk manager or senior management can use. The risk manager cannot conclude that only one factor is to blame for unfavorable results. Several factors usually combine to precipitate unfavorable results. One-time, point-in-time comparisons can lead to inaccurate assumptions; circumstances change over time, as will data. Slightly different comparison data can make the comparison “slightly” invalid.

Statistically invalid comparisons, such as comparing work injuries to car accidents, and statistically massaged data can lead to inaccurate and meaningless comparisons. Also, data from an unknown or questionable source can lead to meaningless comparisons.