

January 2005

The Promise Beyond RMIS

This article provides a road map to help you better interpret, analyze and communicate RMIS output.

It took only thirty years for RMIS to grow from concept to necessity. Now we face a new challenge directed at RMIS output. The impertinent, yet relevant, question is 'what does it mean?'. The response is too often a very long, and painful, "ah...."

Risk Managers, even with the best of RMIS support, can mistake computer output as interpretation or analysis. The difference is huge. The music is *not* in the piano, nor is the analysis in the computer. Sweat, not treadmills, makes us fit.



EXPLAIN! We will advance the credibility of Risk Management if we apply a simple rule: make it standard practice to explain every graph or table you distribute. Simply add a textbox containing two conclusions or recommendations. The discipline of having to explain results may reveal that the mix of different evaluation

dates, or other inconsistencies represents enough 'apples' and 'oranges' conditions to be a fruit salad. After all, if it does not make sense to you, how is the reader supposed to figure it out?

ORGANIZE! IBM's PC opened the personal computer age in 1981. Before this milestone, data analysts used hands-on, manual methods. (Yes, there was life before laptops and BlackBerries). Great statisticians, including Edward Deming at NYU and John Tukey at Princeton, stressed this manual interface, not as a limitation, but as a way to better understand the data. When they spoke of having a feel for the data, they meant it.

There is merit in getting 'hands-on' with the data. Today, a practical alternative is through your MS Excel Pivot Table interface. If you are not familiar with this tool for reporting and graphics, make it a New Years' Resolution to do so. If you are a user, then learn more of the in-depth features, or test the more advanced interface available in Access. Don't be intimidated by Access: its learning curve is no steeper than Excel looked ten years ago and like Excel, you can pick and choose just the features you need to learn.

PICTURE! 'Seeing is believing'—we know that because the eye's optic nerve is hardwired to our brain. Seeing is also learning. We see patterns and trends graphically, which might be undetectable in text tables or reports. The right graphics give laymen and experts alike the 'ah gee' inspiration to leap from observations to explanation. Graphs should not be the last step in making a 'pretty' PowerPoint presentation; they should be used from the beginning.



To do so, you should work with your raw data through a graphical interface that allows you to visualize your results, to record observations, and to make recommendations as you go. Does this mean you have to junk your current information services? Not at all!

Most RMIS services provide an easy to use feature to download their reports to MS Excel. Once in Excel, you have the ability to further manipulate the data into Excel graphs. A more advanced option is the PivotChart in Microsoft Access. The time to learn it is an investment rewarded many times over. If you understand the statistical methods, then JMP (from SAS Institute) is a powerful tool. It is designed for a hands-on analysis to perform various looks at the data, test statistical results, and then record comments that will be part of the final report.

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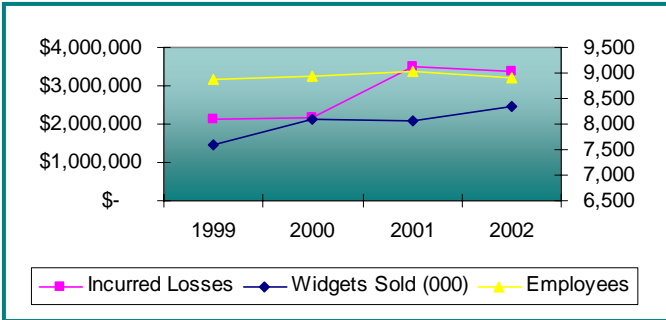
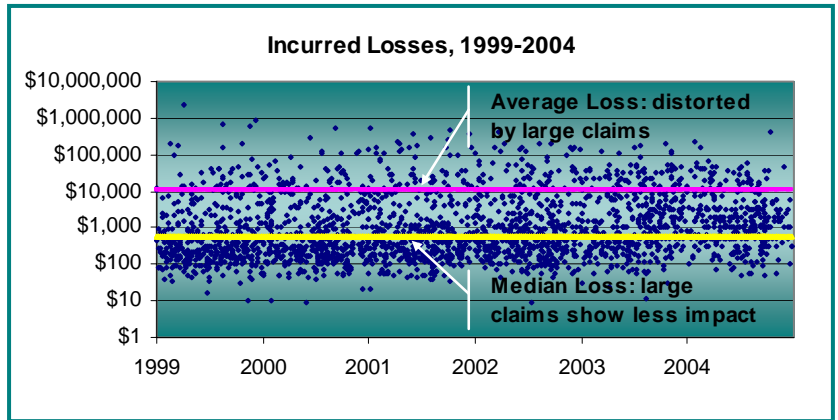
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TREND! Would you bet on a horse that started the race 10 minutes after the other horses? Not likely! Yet, we often present loss and frequency data that have such a lagged start because they represent different accident years. Here is another example. If you compute the average delay (in days) from accident date to report date the value will likely decrease with more current years. The explanation may be improved practices, but recognize the fact that claims from more current years are limited (truncated) in their maximum possible lag delay. The bias with older years makes comparison illogical or even a candidate for 'how to lie with statistics'.

The simple solution is to apply loss triangles based on both frequency and severity in your reports. These triangles are *not* the exclusive domain of the actuary (though actuaries are among their major users). Plant Managers and CFO's, and other non-insurance people are quick to pickup triangle concepts and their implications for loss development or payouts. Creativity allows triangles to focus on many areas that are not purely financial. For example -- to monitor the rate of claim reopening, or the ratio between lost time claims and all claims for WC. Have your RMIS provider support simple, flexible triangle reports!

COMPARE! Risk Analysis 101: the total incurred losses depend on both loss frequency and individual loss severity. The tricky part is that each loss event is an independent 'spin' on the severity 'wheel of fortune' (or more accurately, 'misfortune'). Even in the relatively controlled environment of workers' compensation, it is not unusual to experience individual claims that are 50 times the average value. Be aware that when you compare results based on their average, only a few claims can influence your conclusion. There are statistical methods that compute the uncertainty level in the average making it clear when averages are different at a statistically-defined confidence level. Alternatives to averages are available, including medians or percentiles (the percentage of claims less than \$100,000, etc.)

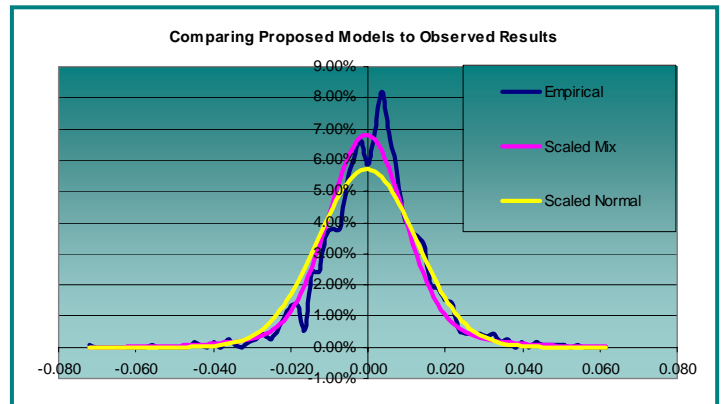


NORMALIZE! Rates are a critical tool for judging our performance against ourselves or in benchmarking other organizations. Loss information must be combined with consistent expressions of exposures. Ideal, but not always practical, are exposures that are measured in units that are not inflation sensitive. For example, the tonnage of shipments, count of visitors instead of revenue, etc. One caution; if you project future rates based on history, do not forget that the projected rate is a variable—not a fixed value. Don't let an extreme event (say a \$2,000,000 WC claim) sink the curve, and your budget!

the organization overall. However, be sure that the absolute size of the Division warrants the attention—i.e. will getting this Division back in line produce enough savings to justify the cost?

MODEL! Some folks entered Risk Management because they didn't want any more math courses. Fortunately, you can use these concepts without being a mathematician. Math is a language that can summarize your loss experience in a very compact way. Expressing your loss experience in a mathematical model is a prerequisite for serious analytical work. You can fit a mathematical model to your data that, if a good fit, can be used to extend your results beyond the range of the actual data. This opens the opportunity to use Monte Carlo simulation methods (available in Excel) to design allocations, choose retentions, etc.

VERIFY! RIMS is a leader in bringing data standards to Risk Management. The fundamental importance of reliable, accurate data in performing any of the tasks discussed here is clear both technically and via regulatory responsibilities. Every Risk Manager should look at the application of Sarbanes-Oxley to his risk data. The simple questions: how do I know these are 'my' claims? How can I be sure they are properly reserved, and transactions properly recorded? These are questions that we do not want to find that the Emperor really does not have clothes!



WANT MORE? The concepts developed here are emphasized in a RIMS-sponsored Workshop, Risk Analysis Tools for Effective Risk Management. The next offering of the program is March 14 to 15, in Fort Lauderdale, Florida. For registration information, visit RIMS.org or call Vincent Seglior, (212) 286-9292.