

## Underwriting MVRs: A New Approach

### A study with LexisNexis

Hannover Life Reassurance Company of America (Hannover Re) has partnered with LexisNexis to analyze motor vehicle records (MVR) to determine the mortality implications associated with traffic violations. The analysis included 8.5 million records, over 200,000 deaths, with up to 9 years of follow-up. Some interesting results emerged.

### Surcharge models

Underwriting employs two basic surcharge models depending upon whether or not the risk increases with age or is independent of age. A few examples of risks that are age independent include: occupations, avocations or aviation activities. In these examples, risk is presumed to be uniquely associated with the activity and not influenced by the age of the individual.

On the other hand, table ratings reflect increased risk that is proportional to age. Underwriting debits can be described as percentage increases in risk, for example, 50 debits equates to a 50% increase in risk over an age, gender, and smoking status referent. Most medical impairments are best defined as multiples of an age specific baseline.

Historically, the life insurance industry has assumed the mortality associated with driving violations is age independent and thus deserving a flat extra surcharge. Although that seems logical, the only way to know for certain is to conduct a mortality study on the violations. In this case, our evidence based research revealed unexpected findings.

### Results

The data showed that risk associated with MVR violations is better reflected as a multiple of an age specific baseline and therefore better matched using table ratings. This means that flat extra ratings, historically employed by the industry, have resulted in over funding mortality for younger drivers while underfunding mortality for older drivers. The overall prevalence of moving violations decreases as age increases.

Therefore, the flat extra surcharges affect more individuals than their underfunded counterparts.

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Moving to a table rating approach will have a favorable impact to risk stratification on a material portion of the population.

The data also shows us that the extra mortality associated with ratable violations remains a significant predictor of mortality longer than previously anticipated.

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### Other key findings from violations:

- Speeding violations did not result in significant mortality increases until the actual number of mile per hour (MPH) over the limit exceeded 30.
- If the speeding violation was less than 30 MPH, then as the number of events increased, mortality increased as well, but not until at least four low level violations occurred.
- Mortality for reckless/negligent driving and revocations/license suspensions, while high, wasn't as high as that associated with DUIs.

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### Updates to Ascent

Ascent, our web based underwriting manual, will be updated to reflect the results of the MVR research and uses a table rating approach that is stratified by duration and type of violation or combination of violations. These changes will be available on Monday, November 3, 2014.

**For questions please contact:**

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