



# Comparison of Expected Medical Malpractice Costs – NM vs. TX

7/27/15

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## Overview

Gross Consulting has been engaged by Texas Medical Liability Trust (TMLT) to estimate the average relative difference in medical malpractice insurance claim costs between states, specifically New Mexico and Texas.

## Data Sources

- The National Practitioner Data Bank (NPDB) is an electronic information repository created by Congress. It contains information on medical malpractice payments and certain adverse actions related to health care practitioners, entities, providers, and suppliers. Statistical Information (excluding personally identifying information) is available for analysis, and can be downloaded from the NPDB website.<sup>1</sup> The NPDB provides a useful database of medical malpractice claims, with information about each claim as well as the amount of all payments on that claim. For purposes of this comparison, we used only losses in the NPDB that were both listed as Insurance Company Payments and attributed to an Allopathic Physician (MD), as this study is concerned with costs for malpractice insurance for MDs.
- US Census data was used to provide a basis against which to measure payment frequency. The data used was annual state populations from 2000-2010, which is publicly available information and can be downloaded from the US Census website.<sup>2</sup>

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<sup>1</sup> <http://www.npdb.hrsa.gov/topNavigation/aboutUs.jsp>

<sup>2</sup> <https://www.census.gov/popest/data/intercensal/state/tables/ST-EST00INT-01.csv>

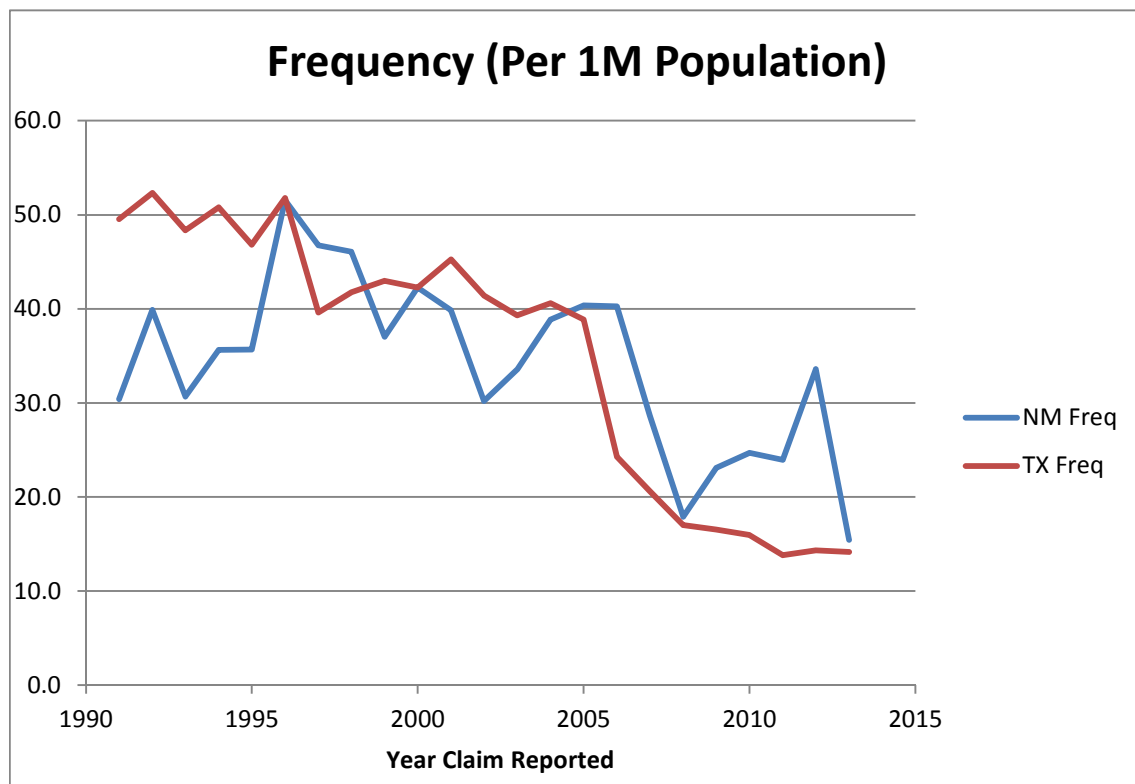
## Methodology & Results

### Frequency

To analyze frequency of losses, we divided the number of losses in the NPDB by state by each state's population (using US Census data). While population is not a perfect measure of exposure to claim frequency per practitioner, we believe it is a reasonable approximation. The number of procedures per person is likely similar from state to state, while legal environments and in turn frequency of litigation vary greatly. Also, while this measure is not a true frequency of medical malpractice claims per practitioner, we are not concerned with the absolute frequency for this comparison, only how frequency in one state compares to another. For this purpose, this claims per capita measure is reasonable.

We calculated this frequency for both New Mexico and Texas from original reporting years 1990-2014, and compared the values over time in the graph below. As can be seen from the graph, frequency dropped significantly in Texas around 2005 due to strong tort reform laws passed in 2003. As the reforms took hold, frequency leveled off a few years later. While we also see decreasing frequency in New Mexico, it is still significantly higher than in Texas. To account for the tort reform laws, as well as to avoid using undeveloped claims from 2014, we used an average of the relative frequencies from 2008-2013, which indicated that frequency is 52.8% higher in New Mexico than in Texas.

Note that the overall frequency is likely depressed in more recent years due to incomplete reporting; however, it is reasonable to assume that reporting lag is similar between the two states. Because we are only concerned with the ratio of the frequencies, the impact on the indicated relativity is immaterial.

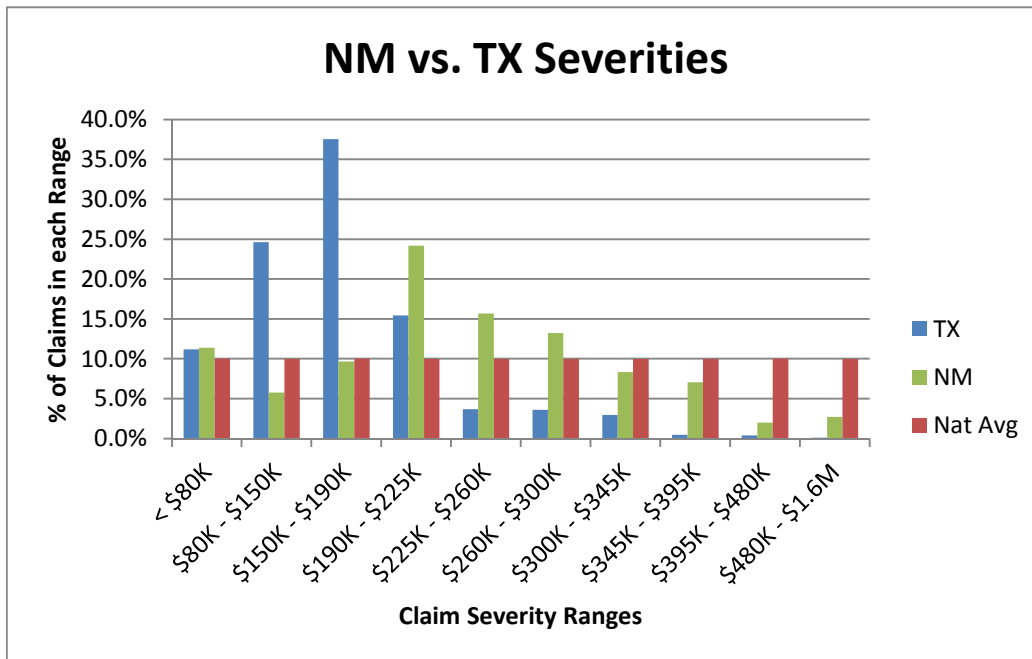


## Severity

For our severity analysis, we developed a multivariate model from the NPDB data. This allows us to calculate factors for each variable which take into account relationships between all of the other variables in the model. For this comparison, we are able to get a factor for each state that appropriately accounts for other differences between the states and avoids double-counting relationships such as different distributions of doctors' specialties or different ages of doctors.

In the course of our analysis, we also noticed that payments varied depending on if they were paid by an Insurance Company or Non-Insurance Company, so we included this as a variable as well. Including this distinction allowed us to calculate the relativities between states for only Insurance Company payments.

The graph below shows the severities modeled by our analysis. Note that the red bars represent the national average, so each bin represents one decile of claim severities. For example, 10% of claims nationally are <\$80K, 10% are between \$80K – 150K, and so on. We can see in this graph that both states actually have a higher percentage of smaller claims (and a lower percentage of larger claims) than the national average. However, this deviation is much stronger for Texas, with almost 90% of claims less than the 40<sup>th</sup> percentile of claim severities nationwide. The final indicated relativity was that severity is 22.7% higher in New Mexico compared to Texas.



## Total Expected Loss Cost Relativity

Together, these frequency and severity relativities indicate that average loss costs will be **87.5% higher in New Mexico** than in Texas. ( $1.528 \times 1.227 = 1.875$ )

## Professional Documentation and Standards of Practice

Chris Gross is a member in good standing of the Casualty Actuarial Society and American Academy of Actuaries and is qualified to provide this analysis.

### ***ASOP 23 – Data Quality (Doc. No. 141; December 2004)***

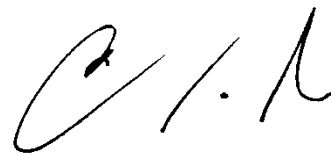
This analysis complies with this standard. The NPDB is appropriate for the intended purpose of this analysis. We did not perform a formal review of the dataset as it is maintained by a reputable government agency, and based on other analyses we have performed in the past we have confidence in the reliability of the data.

### ***ASOP 25 – Credibility Procedures (Doc. No. 174; December 2013)***

This analysis complies with this standard. Full credibility was given in the frequency portion of the comparison, as we felt that the results were credible on their own for purposes of this analysis. In the severity portion, results were adjusted to reflect the credibility of observations. Additional documentation of the credibility procedure used can be provided upon request.

### ***ASOP 41 – Actuarial Communications (Doc. No. 120; December 2010)***

There is uncertainty associated with this analysis; it is our best estimate of the loss cost relativity between New Mexico and Texas, using the information available to us. Gross Consulting does not believe we have any conflict of interest in preparing this analysis. All assumptions and methods selected and used were based upon the judgment of the Actuary.



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