

Modeling Medical Professional Liability Damage Caps An Illinois Case Study

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Overview of Presentation

- Background
- Scope of Analysis
- Overview of Model
- Derivation of Model Assumptions
- Summary of Results
- Other Considerations

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Topic #1: Background

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**Background
Illinois Medical Professional Liability Statutes**

- Tort reform enacted in 2005 (Public Act 94-677, aka Reform Act)
- Five reform provisions:
 - Limit on non-economic damages
 - Hospitals - \$1,000,000 limit
 - Physicians - \$500,000 limit
 - Periodic payment provisions
 - Revised standards for expert witnesses
 - Public identification of physician signing "affidavit of merit"
 - Encouragement for health care professionals to acknowledge medical errors

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**Background
Recent Developments**

- Cap on non-economic damages was ruled unconstitutional by a Circuit Court Judge for Cook County, Illinois in late 2007 in the case of Abigaile Lebron, etc. vs. Gottlieb Memorial Hospital, et.al.
- Illinois Supreme Court ruled February 4, 2010, upholding the Circuit Court's decision

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Topic #2: Scope of Analysis

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Scope of Analysis

- Scope of analysis was to evaluate the impact on physicians MPL claim costs of the overturning of the cap on non-economic damages
- Magnitude of impact on rates less clear
 - Reform appears to have been only partially reflected in rates to date
 - Could have seen rate decreases if Reform Act were upheld
- Impact on frequency also unclear
 - Could be significant based on experience of other states

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Topic #3: Overview of Model

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Overview of Model General Approach

- Understand components of Illinois PPL claim costs
 - Loss
 - ALAE
 - CWI vs CWE claims
- Develop distributions around each of these components
 - Including allocation of loss to economic and non-economic damages
- Simulate loss and ALAE costs under two scenarios
 - With cap on damages
 - Without cap on damages

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**Overview of Model
Illinois Industry Data**

- ISMIE Rate Filing
 - Loss severity (per CWI Claim)
 - ALAE severity (per CWI Claim and per CWE Claim)
 - Portion of claims CWI / CWE / CNP

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**Overview of Model
External Industry Data**

- States of Florida and Texas closed claim databases
 - Shape of distributions for claim costs by category
 - Economic
 - Non-Economic
 - Correlation of economic/non-economic loss
- State of Texas closed claim database only
 - Allocation of damages between economic/non-economic
 - Portion of claims with loss that is
 - Economic
 - Non-Economic
 - Both
 - Correlation between overall ALAE and loss

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**Overview of Model
Simulated Outcome**

- For each scenario we estimated the impact on the following components for Illinois physicians
 - Loss Severity
 - Economic
 - Non-Economic
 - ALAE Severity

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Topic #4: Derivation of Model Assumptions

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Derivation of Model Assumptions Number of Claims per Occurrence

- Using industry data, we assumed the following:
 - Expected number of claims per occurrence of 1.30
 - Distributional form is Zero-Truncated Poisson
 - These assumptions imply the following probabilities for the number of claims per occurrence:
 - Probability of 1 claim / occurrence = 74.1%
 - Probability of 2 claims / occurrence = 22.2%
 - Probability of 3 claims / occurrence = 3.3%
 - Probability of 4+ claims / occurrence = 0.3%
 - Weighted average claims / occurrence = 1.30

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Derivation of Model Assumptions Claim Disposition

- Based on ISMIE Mutual Insurance Company's July 1, 2006 PPL rate filing, we assumed the following claim disposition ratios:
 - CWI to total closed: 17%
 - CWE to total closed: 78%
 - CNP to total closed: 5%
- For CWI claims we then decomposed by category of loss based on the Texas closed claim database

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Derivation of Model Assumptions
Probability of CWI Claims by Category of Loss

Loss Type	Selected Portion of Closed Claims by Loss Type
Economic Only	1.5%
Non-Economic Only	20.5%
Both Types	78.0%
Total Claims	100.0%

Source: Texas Closed Claim Database

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Derivation of Model Assumptions
Claim Severity Distribution by Category of Loss

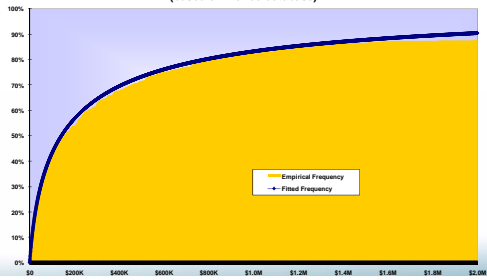
- Using information from the Florida and Texas closed claim databases, we derived claim severity distributions by category of loss
 - Trend rates utilized as follows:
 - Future Medical 8.5%
 - Other Economic 3.5%
 - Non-Economic 6.0%
 - Trend rates based on exponential curve fit to Florida severities
- Fit a distribution to data for each category of loss
- Measured correlation between claim severities for each category of loss

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Derivation of Model Assumptions
Severity of Claims - Economic

Cumulative Distribution
 (based on Florida database)

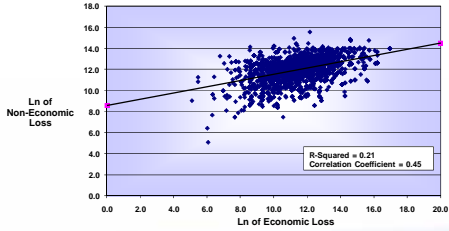


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Derivation of Model Assumptions Severity of Claims – Ln(Loss) Correlation

Relationship Between Economic Loss and Non-Economic Loss
(based on Florida database)



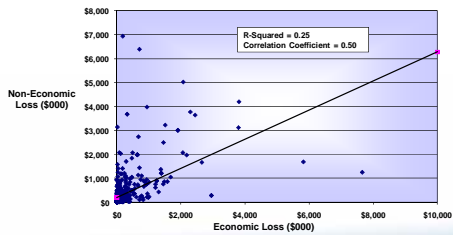
Note: Data includes only claims with non-zero values for both economic loss and non-economic loss

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Derivation of Model Assumptions Severity of Claims – Loss Correlation

Relationship Between Economic Loss and Non-Economic Loss
(based on Texas database)



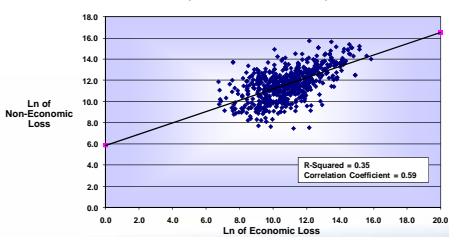
Note: Data includes only claims with non-zero values for both economic loss and non-economic loss

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Derivation of Model Assumptions Severity of Claims – Ln(Loss) Correlation

Relationship Between Economic Loss and Non-Economic Loss
(based on Texas database)



Note: Data includes only claims with non-zero values for both economic loss and non-economic loss

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Derivation of Model Assumptions Severity of Claims – Loss Correlation

Relationship Between Economic Loss and Non-Economic Loss

Database	Assumption	R Squared	Indicated Correlation Coefficient		Selected Relationship / Correlation Coefficient
			Pearson's R	Spearman's Rank Order	
Florida	Linear Relationship	0.070	0.265	0.455	Log-Linear
	Log-Linear Relationship	0.207	0.455	0.455	
Texas	Linear Relationship	0.247	0.497	0.567	0.500
	Log-Linear Relationship	0.351	0.592	0.567	

Note: Relationship derived from non-zero values of economic and non-economic losses

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Derivation of Model Assumptions Severity of Claims – ALAE on CWI

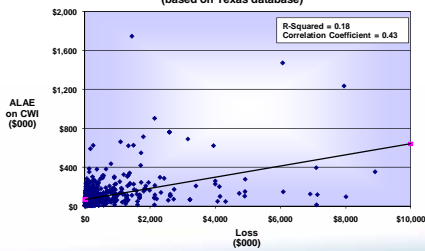
- In modeling ALAE severities we differentiated between CWI and CWE claims
- Based on ISMIE's rate filing and a 4% per annum ALAE trend, we assumed the following:
 - ALAE per CWI claim = \$90,890
 - ALAE per CWE claim = \$50,656
 - ALAE per CWE claim remains fixed throughout the model
- ALAE severity per CWI claim varies with the loss severity in a log-linear fashion with a slope of 0.50

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Derivation of Model Assumptions Severity of Claims – ALAE on CWI Correlation

Relationship Between Loss and ALAE on CWI (based on Texas database)

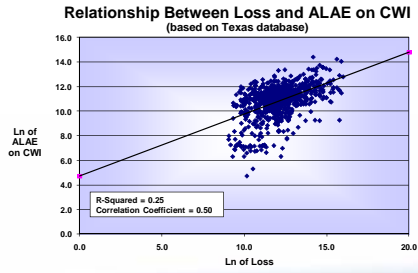


Note: Data includes only claims with non-zero values for both loss and ALAE on CWI

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Derivation of Model Assumptions
Severity of Claims – Ln(ALAE on CWI) Correlation



Note: Data includes only claims with non-zero values for both loss and ALAE on CWI

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Topic #5: Summary of Results

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Summary of Results

Indicated Increase in Severity Due to Reform Repeal
 (Assuming \$1,000,000 Policy Limits)

Estimated Per Occurrence	Cap on Damages		Indicated Increase
	With	Without	
Mean Indemnity	\$117,000	\$144,000	23%
Mean ALAE	67,200	73,600	10%
Mean Indemnity & ALAE	\$184,200	\$217,600	18%

Note: Cap on non-economic damages is \$500,000 for physicians

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Observations

- Large estimated impact due to Illinois MPL severities
 - Among highest countrywide
 - Impact on calendar year payments less clear
 - Mix of accident dates within calendar year
 - Delay in settlements
 - Delay in claim filings
- Impact on rates will likely be small
 - Few insurers had reduced rates for tort reform
 - May see some rate increases among insurers who had taken rate decreases
 - Had Supreme Court stayed the reforms, we might have seen rate decreases

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Topic #6: Other Considerations

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Other Considerations

- Accompanying Oral Discussion
 - This document is not complete without the accompanying oral discussion and explanation of the underlying information and concepts as well as any interpretational limitations.
- Limited Distribution
 - This document should not be distributed, disclosed or otherwise furnished, in whole or in part, without the express written consent of Milliman.
- Data Reliance
 - We have relied upon data and other background information from the Florida and Texas Departments of Insurance, as well as rate filings made by ISMIE, without audit or independent verification. We have performed a limited review of the data for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

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