



Michigan Catastrophic Claims Association

CAS Government in Insurance Seminar

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Michigan Catastrophic Claims Association

- Excess PIP
- Benefits are unlimited as to duration and amount
- Very long tail
- Very few claims
- Very large claims
- Significant uncertainty
- Injury severities
 - Traumatic Brain Injuries
 - Spinal Cord Injuries
 - Burns & Miscellaneous Injuries

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Michigan Catastrophic Claims Association

- Independent methodology
- Frequency
 - Triangulation of reported claims
- Severity
 - Structural simulation models

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Structural Simulation Models

- Medical care continuum
- Length of stay and unit costs
- Probabilistic movement from phase to phase
- Exits from model
- Economic scenario

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Structural Simulation Models

- Calibrated to MCCA claim inventory characteristics
 - Recoveries
 - Mortality impairments
 - Age distributions
 - Multiple claimants
 - Model cost, duration, and probability parameters

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Pure Premiums

- Inflate / deflate medical care cost parameters
- MCCA threshold
 - Probability of exceedence
- Change in relative frequency
- Multiple inflation rates
- Changes in treatment

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Partial Pure Premiums

- Impact of changes in threshold
- Identify cost drivers
- Impact of limitations
- Cost containment
- Changes in treatment

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Reserves

- Case Reserves
- IBNR Reserves

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Case Reserves

- Know injury severity
- Know age and sex of claimant
- Know that claimant is still alive
- Know that claimant has not recovered
- Use structural simulation models
 - Remove expected payments up to valuation date
 - Replace with actual payments to date
 - Subtract MCCA threshold

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IBNR Reserves

- Retrospective pure premium methodology
 - Number of IBNR claims X
 - Average excess severity X
 - Probability of exceedence X
 - Lag ratio
 - As time between accident date and report date increases, the average cost of a claim decreases

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Reserves

- Case Reserves +
- IBNR Reserves +
- LAE Reserves
 - A&O Reserves
 - DCC Reserves

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Questions?


