



SOCIETY OF ACTUARIES

**Health Valuation Boot Camp
August 12- 13, 2009**

**Session 11: Issues with Actuarial Liabilities
for Long Duration Products**

[Darrell Spell, FSA, MAAA](#)

Valuation Boot Camp

Issues with Actuarial Liabilities for Long Duration Products

Presented by
Darrell Spell
Consulting Actuary
Tampa, Florida

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Issues with Actuarial Liabilities for Long Duration Products

Long Term Care:

- Data Sources
- Assumptions setting
- Old age mortality
- Underwriting impact
- Effect of Claims Management
- Expected vs. Reality
- Medical Developments (e.g. morbidity improvements)
- Provision for Moderately Adverse Experience
- Principles Based Reserves
- Reserve Adequacy

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Issues with Actuarial Liabilities for Long Duration Products

Long Term Care:

- Interest rates
- IBNR estimates
- Claim data coding (incurral dates, recurrent claims, etc.)
- Unlocking triggers
- Gross premium valuations

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Issues with Actuarial Liabilities for Long Duration Products

Disability Income:

- Expected vs. Reality
- Data Sources (CIDA adequacy)
- Medical Developments (e.g. mortality improvements)
- Reserve Adequacy
- Interest rates
- Social Security offsets (and potential changes)
- Health reform impact
- Experience studies underway

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Long Duration Products

Current Valuation Bases

- ❖ Standard Valuation Law
- ❖ Health Insurance Reserve Model Regulation
- ❖ Health Reserve Guidance Manual

Current Statutory Accounting Bases

- ❖ AP&P Manual, SSAP #54 & SSAP #55
- ❖ AP&P Manual, primarily Appendix A-010
- ❖ AP&P Manual, primarily Appendix A-641

Statutory Reserves Must Meet:
Minimum Statutory Reserve Standards
Gross Premium Valuation Testing
Asset Adequacy Test

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Long Duration Products – Long Term Care

- Valuation – Several Iterations of Regulation
 - Similar to other health products
 - Reserve Regulations (Policy Reserves)
 - Mortality: Defined – updated over time (80 CSO, 83GAM, 94GAM)
 - Morbidity: Actuary's judgment
 - Discount Rate: Defined
 - Lapse Rate: Defined
 - Basis: 2YPT (issued before 12/31/01)
 - Basis: 1YPT (issues 1/1/02 or later)
 - Claim Reserves
 - Cash Flow Testing

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Long Duration Products – Disability Income

- Valuation – Several Iterations of Regulation
 - Similar to other health products
 - Reserve Regulations (Policy Reserves)
 - Mortality: Defined – updated over time (80 CSO, 83GAM, 94GAM)
 - Morbidity: 64 CDT, 85 CIDA
 - Discount Rate: Defined
 - Lapse Rate: Defined
 - Basis: 2YPT
 - Claim Reserves
 - Cash Flow Testing

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Long Duration Products

- Claim Reserves
 - Open Claims
 - Case Reserves – Basic Principles – Most Frequent Approach
 - Case Reserves – Examiner's Estimate
 - Lag Triangles – for validation purposes only
 - Pending Claims
 - Open claim reserve calculation, adjusted for likelihood of payment
 - IBNR
 - Lag Method (preferred method)
 - Loss Ratio Method

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Long Duration Products – Long Term Care

- Active Life Reserves:
 - Morbidity
 - Actuary's Judgment
 - Policyholder behavior
 - What is a reasonable assumption and source?
 - SoA Intercompany study
 - Company's own experience
 - Consultant / Reinsurer data
 - Pricing assumption
 - Adjustments to data – appropriate?
 - Morbidity improvement (e.g. Alzheimers treatment)
 - Mortality improvement

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Long Duration Products – Long Term Care

- Claim Reserves:
 - Termination rates
 - What is a reasonable assumption and source?
 - SoA Intercompany study
 - Company's own experience
 - Consultant / Reinsurer data
 - Pricing assumption
 - Some combination of above
 - Adjustments to data – appropriate?
 - Morbidity improvement (e.g. Alzheimers treatment)
 - Mortality improvement

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Long Duration Products

- Claim Reserve Adequacy
 - Runoff study
 - A:E study

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Long Duration Products – Disability Income

Potential Developments

- Additional Items for Consideration
 - Mortality Improvements
 - Impact on sufficiency of reserves
 - True mortality about ½ of CIDA at ages 65+
 - Changes to Social Security Benefits
 - Affects SS offsets in DI programs
 - Health Reform
 - Potential impact on physician claim experience
 - Updated Experience Studies Underway

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Long Duration Products – Long Term Care

Potential Developments

- Additional Items for Consideration
 - Morbidity Improvements
 - Government Intervention
 - Medicaid expansion
 - Federal LTC program
 - Provider developments (e.g. ALFs)
 - Principles Based Reserves

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Principles-Based System Introduction

Reasons for Change

- Current Statutory Standards include “lock-in”
 - May not capture all risks
 - Over/understate reserves and capital
- Value of consistency with PBR within companies and with GAAP
 - Coordination with the IASB and FASB

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Principles-Based System Introduction

The Principles

- As developed by AAA for LHATF
- June 3, 2007 NAIC exposure draft of overarching principles
 - Principles-based reserving framework
 - Reserve liabilities
 - Capital adequacy
 - Corporate governance
 - Disclosure & financial examinations

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Principles-Based System Introduction

Statements Defining PBA – for LHATF

1. Reserves reflect all material risks
2. Utilizes risk analysis & risk management techniques
3. Incorporates assumptions & methods consistent with company's overall risk assessment process
4. Use of company experience
5. Assumptions based on prudent estimate
6. Reflects risk in calculation of reserves and capital

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Principles-Based System Introduction

LTC Risk Characteristics

- Lapse Rates
- Morbidity
 - Incidence/severity
 - Claim variability
- Mortality
- Interest Rates & Economic Environment
- Movement among status categories

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Principles-Based System Introduction

Key Concerns for LTC

- Reflection of rate increases in future cash flows under stochastic scenarios
- Changing marketplace & government programs' impact on assumptions, products
- Margin in rates vs. margin in reserves
- Limited experience
- Anticipated limits on interest rate assumptions

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Principles-Based Approach – NAIC Level

- Principles drafted
- Focus shifted to action items
 - Standard Valuation Law – now scopes in health companies
 - Valuation Manual – LHATF has primary responsibility
 - Options for Assurance of Company Reserves
- Implementation
- IRS Notice 2008-18

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Principles-Based Approach – LTCPBWG Issues Subgroup

- Monitor developments on Life/Annuity front
- Identify issues specific to LTC
 - Defining risk margins
 - Investigating statistical distributions of claims
 - Monitoring efforts relating to data availability for morbidity table
 - Outline modeling issues

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Principles-Based Approach – LTC Modeling Issues

- Premium rate changes
- Interest rate scenarios
- Unanticipated changes in morbidity or benefit utilization
- Regulatory intervention
- Morbidity and/or mortality improvement

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Principles-Based Approach – LTC Tech Group

- Primary objectives
 - Specify model requirements
 - Design, develop and test model
 - Analyze results
- Considerations
- Modeling stage

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Principles-Based Approach – LTC Modeling Stage

- Excel platform chosen
- Four model approaches considered
 - (1) Random walk by policy
 - (2) Random walk by duration
 - (3) Stochastic simulation by database lookup
 - (4) Waiting time model
- Proceeding with approach (4)
 - Stochastic model under construction

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LTC PBWG Technical Subgroup Modeling Stage – Method 4

Method 4 – Waiting Time Model

- Developed by Eric Stallard, Research Professor, Duke University
- Generate two random numbers
 - The first determines the time of the next change in status
 - The second determines what the status change is

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LTCPBWG Technical Subgroup Modeling Stage – Method 4

- Results provide a cash flow projection for each policy
- May permit use of fewer trials to establish statistical significance of results
- Point-in-time analysis is possible for management action

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A photograph of an audience in a meeting room. Several people's hands are raised in the air, indicating they have questions or want to speak. The background is slightly blurred, showing a man in a suit standing at the front of the room.

Questions?

