# Update on the Group Long-Term Disability Table to the NAIC Health Actuarial Task Force (HATF)

Academy/Society of Actuaries
Group Long-Term Disability Work Group

*March 2, 2012*

# Objectives

**Section 1:**
**Valuation Consideration by Product Type**

History and Product Comparisons

- Group Life Waiver of Premium
- Individual Disability
- Group Long Term Disability

Valuation Precedents

**Section 2:**
**Group LTD Valuation Proposal**

- Background and Timeline
- Valuation Table Considerations
- Proposal
  - Base Margin
  - Use of Own Experience
    - - Time Period
    - - Credibility
    - - Own Experience Margin
- Scenario Testing
- Comparison to CGDT87
- Comparison to Experience by Year




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# Section 1: Valuation Considerations by Product

**Group Life Waiver of Premium**

- New Valuation Standard Adopted in 2009
- Adopted as "Actuarial Guideline" (not a model regulation)
- Was not replacing any previous model regulations or actuarial guideline
- 700,000 Life-Years Exposed
- Base Margin added to recovery and death assumptions
- Carrier modifications use three to six years of experience with credibility recommended , but not defined
- Floor or minimum reserve is explicitly defined
- Commissioner can recommend 100% of own experience for unfavorable experience




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# Valuation Considerations by Product

**Group Life Waiver of Premium: Differences from Group LTD**

- No offsets to insurance carrier liability
- Single definition of disability (no transition)
- Little active claims management
- Group Life WoP - low death rate = beneficial to insurance companies
  - Margin = adding to death rate assumptions
- Group LTD – high termination rate = beneficial to insurance companies
  - Margin = reducing claim termination rate assumptions

# Valuation Considerations by Product

**Individual Disability (CIDA, CIDC)**

- 1985 CIDA adopted in the late 1980's – incidence and termination rates
- Adopted as model regulation
- 1985 CIDC developed in late 1990's as an interim step to recognition that termination rate experience was much different than CIDA table

This table came with a recommendation that new tables be developed

Newer table development in process – aiming to have experience tables by end of 2012 – database of 360,000 claims

Covers periods of favorable and unfavorable experience







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# Valuation Considerations by Product

## Individual Disability: Differences vs. Group LTD

- Reserves include active life component
  - – incidence rates are needed
- Offsets are less significant
- Can be different definitions and limitations of disability
- Occupation is captured and used for segmentation




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# GLTD Product: Valuation Precedents

**1985 CIDA** Exposure: 134,000 claims Period: 1973-1979
Margin: 5% reduction in term rates graded to 0% after 18 months
No Margin on Incidence Rates

**1985 CIDC:** Did not do seriatim claim study: 1993-1997
Margin: sufficient to cover 85% of companies (2-3% morbidity margin)

**2006 Group Life Waiver Study**
Exposure: 750,000 Life-Years Study Period: 1993-2002
Margin: 25% on Recoveries, 35% on Deaths

**1987 CGDT**
Base Study: < 24 Months: 1975-1980: 13,000 Terminations
Years 3-10: 1962-1980
Years 11+: 1985 CIDA Study

Margin: 10% on Terminations

# Section 2: Group LTD Valuation Proposal

- Background

- August 2009—SOA Group Disability Experience Committee produces and publishes a 10-year claim termination experience report
  - More than 1 million claims; 680K terminations; 2.4 million life years
  - June 2011—Base experience table and accompanying report published.
- March 2011— Committee presents to HATF at NAIC Spring Meeting. This results in the following charge:
  - "The Health Actuarial Task Force asks the American Academy of Actuaries to develop a Valuation Table to replace the 1987 Commissioners Group Disability Table…"
- The work group is targeting a complete recommendation to be made by June 2012

# GLTD Valuation Proposal - Influences

- Converting an actuarial study to a valuation standard: no official template
- Considered by GLTDWG:
  - Other related valuation tables:
    - Current GLTD statutory model; New group life waiver model
  - Elements specific to the study:
    - Study size (credibility) and period (economic cycles)
    - Granularity of experience table
    - Study limitations
  - Elements specific to the product / industry:
    - Sensitivity and materiality of reserves
    - Disparity of experience by carrier
    - Relation to capital requirements
  - General elements:
    - Not overly complex
    - Balancing “prescribed” vs. “principle based”




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# GLTD Valuation Proposal - Considerations

- 2008 Experience Study was limited to Disabled Life Terminations
- Goal: Replacement of the 1987 Commissioners Group Disability Table (87 CGDT) in model regulation.
- Out of Scope: Guidelines on…
  - IBNR, Offset Assumptions, Discount Rate, Adequacy Testing
- <u>Proposal: Detailed Prescription for setting termination assumptions, with the recommendation that the selections be automatically approved if the prescribed formula is followed.</u>
- Appointed Actuary bears ultimate responsibility for maintaining reserve adequacy
- Required Capital provides significant additional protection against insolvency






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# GLTD Valuation Proposal

- Base Table: Simplified Version of 2008 Experience Table with 85% of deaths to account for past and future declines in mortality rates
- Recovery and Death Rates:
  - Gender by Age by Elimination Period by Duration by Claim Diagnosis
  - Modified by Benefit Amount and by Definition of Disability
- Valuation Table: Base Table with Margin: 15% on Total Terminations in all durations
- For carriers above a certain size, statutory reserves are based on a credibility-weighted blending of the Valuation table and the Company Experience with Margin Experience




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# GLTD Valuation Proposal

- Credibility is based on expected terminations and defined for four duration groups
- Own Experience Margin: between 5% and 15% (based on expected terminations)
- Protection for poor termination experience:
  - Reserves must be higher than 100% of own experience
- Protection for overly positive termination experience:
  - Reserves must be higher than 130% of valuation table level
- Own Experience Termination Study: Based on Five Years of Termination Experience

# GLTD Valuation Proposal – Base Table Margin

- Base Table:
  - Based on a very large number of claims
  - Cover a long study period (1997-2006)
  - Deemed to be fully credible (true industry mean)
  - Margin needed to cover the risk that the table is not the correct mean for a given carrier
  - Margin set so that 85% of carriers in study have A/E's above 100%

| carrier | 15% margin |
|---|---|
| A | 135.0% |
| B | 145.3% |
| C | 134.0% |
| D | 125.9% |
| E | 107.1% |
| F | 105.8% |
| G | 103.3% |
| H | 128.7% |
| I | 112.8% |
| J | 109.4% |
| K | 101.1% |
| L | 61.1% |
| M | 106.0% |
| N | 102.9% |
| O | 90.8% |
| P | 126.9% |
| Q | 112.7% |
| R | 105.1% |
| S | 111.5% |
| T | 139.2% |
| U | 97.6% |
| Count>100 | 18 |
| carrier count | 21 |
| % of carriers | 85.7% |

- Valuation Table:
  Margin: Base Table Termination Rates X 85%

# GLTD Valuation Proposal – Credibility

Selections are based on "Minimum Fluctuation" theory

100% credibility is defined so that we are:

X% confident that the true expectations (Confidence Interval)

Will be with y% of the measured outcome (Allowable Error)

Assumption: observed terminations are "normally" distributed based on a random process with an additional variance factor to capture systematic trends

Percent standard deviation in termination A to E: $V/\sqrt{N}$

$N$ = expected terminations $V$ = subjective variance factor

# GLTD Valuation Proposal – Credibility

## Recommended Credibility

$$\text{Credibility} = \sqrt{N/K}$$

Confidence Interval: 85%
Allowable Error: 5%

Credibility is capped at 100%
***N: Expected #*** of Terminations based on Valuation Table

| Duration | Variance Factor | K |
|---|---|---|
| 1-2 Years | 4.0 | 3,300 |
| 3-5 Years | 3.0 | 2,500 |
| 6-10 Years | 2.5 | 2,100 |
| 11+ Years | 2.0 | 1,700 |




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# GLTD Valuation Proposal – Credibility

Why use different Duration Groups?

Claim management dynamics can differ substantially by duration

| | |
|---|---|
| 1-2 Years: | Active early management phase |
| 3-5 Years: | Change in definition of disability |
| 6+ Years: | More passive management (permanent disabilities) |

Termination A to E's are dominated by early duration experience

1-2 Yrs vs Total,

5-6 Yrs vs Total 6+

Duration Groups: make it possible to "bend" the curve to fit experience






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# GLTD Valuation Proposal – Credibility

Why use different Duration Groups?

Sample Calculation:

| **Carrier 1** | 1-2 Yrs | 3-5 Yrs | 6-10 Yrs | 11+ Yrs | Total |
|---|---|---|---|---|---|
| Actual Terms | 5,000 | 1,000 | 250 | 100 | 6,350 |
| A to E Terms | 105% | 90% | 85% | 80% | 101% |
| Impact on Reserves | 3.7% | 4.8% | 4.1% | 3.8% | 4.1% |
| **Carrier 2** | | | | | |
| Actual Terms | 4,640 | 1,222 | 338 | 150 | 6,350 |
| A to E Terms | 97% | 110% | 115% | 120% | 101% |
| Impact on Reserves | -4.2% | -4.7% | -4.0% | -3.8% | -4.1% |

The same total A to E can lead to indicated reserves that differ by 8%




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# GLTD Valuation Proposal – Own Experience Margin

- Own Experience Margin is based on the number of total terminations in the five year study used to determine experience adjustment factor
- Initial Experience margin is selected so that there is 95% confidence that the true number of expected terminations will fall below the selected table expectations
- Final Experience Margin = Initial Margin + Fixed Additional Margin
- Margin applied as a reduction in termination rate by Duration Group
- Variance Assumptions match what was used in credibility selection
- Additional Margin = 3%
- Actual Own Experience Margin is bounded by 5% and 15%




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# GLTD Valuation Proposal – Scenario Testing

The work group tested the application of the prescribed method using:

Multiple carrier sizes: small, medium, large, and very large

Multiple termination patterns:
high/low, low/high, low/high/low, vow, Very low

Reserve Balance Tested against

1. 100% of Own Experience
2. Credibility Blended w/ No Margin

Results: Reserves are always adequate versus #2 and versus #1 for all but small carriers with poor termination experience.

Up to 2% inadequate for small carriers with low or very low terminations in all durations: This led to requiring reserves greater than 100% of own experience for carriers above a specified size.





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# GLTD Proposal – Comparison to Current Standard

Proposal has ***more explicit margin*** than existing standard.

-15% vs. 10% reduction in terminations

Existing standard currently has ***implicit margin*** due to significant improvements in recovery rates

Proposal specifies explicit margin on own-experience adjustments across all duration years.

Existing standard allows for use of own experience for two or five years, with *undefined* margin

Actual reserve impacts will be variable by company due to the own experience modifications.





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# GLTD Proposal – Comparison to Current Standard

D U R A T I O N

| Proposed Standard | Current Standard: Small Carriers | New Table Impact | Current Standard: Large Carriers | New Table Impact |
|---|---|---|---|---|
| Own experience (5 – 15% margin)<br><br>mixed with proposed table (15% margin)<br><br>starting from in year 1 *(greater weight on new table in later years)* | Year 1-2: Own experience (Margin undefined) | Year 1-2: Credible Experience w/ Margin | Year 1-5: Own experience (Margin undefined) | Year 1-5: Credible Experience w/ Margin |
| | Year 3+: CGDT 87 (10% margin on rates) | Year 3+: Reserve Impact -5% to -6% with no experience adjustment | Year 6+: CGDT 87 (10% margin on rates) | Year 6+: -2% to -3% with no experience adjustment |

Years 3+ represent 60% to 70% of the Total Balance

Years 6+ represent 35% to 40% of the Total Balance






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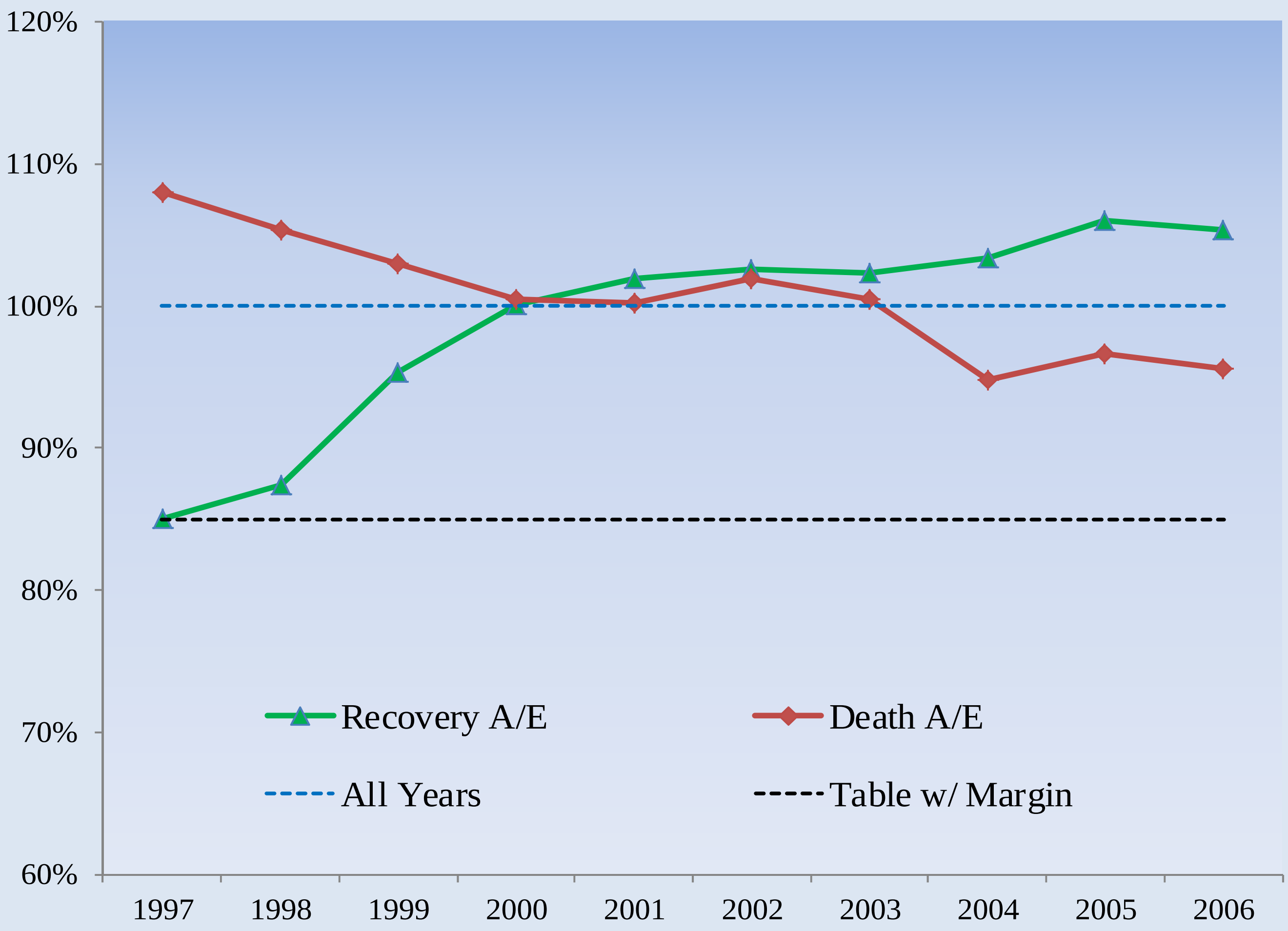
# GLTD Proposal – Study Results by Year




Term Counts

| | Recov |
|---|---|
| Yrs 1-2 | 275,500 |
| Yrs 3-5 | 44,138 |
| Yrs 6-10 | 6,638 |
| Yrs 11+ | 2,091 |
| | 328,367 |

| | Deaths |
|---|---|
| Yrs 1-2 | 43,951 |
| Yrs 3-5 | 17,457 |
| Yrs 6-10 | 8,600 |
| Yrs 11+ | 5,530 |
| | 75,539 |



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# GLTD Proposal – Next Steps

Proposal Implementation: questions still under discussion

- When should the table be implemented?
- How should it be implemented?
  - Rolling transition versus All at Once ?
  - Required versus Allowed?
- Recommended Form of  Implementation?

Timeline of action for GLTDWG:

March 2012 NAIC Meeting: Work group solicits feedback from HATF on proposal

March-June 2012:  Prepares detailed memorandum of final proposal

August 2012 NAIC Meeting: Requests commissioner approval

2012/2013:  Implementation






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# Work Group Members

Darrell Knapp, Co-Chairperson
Roger Martin, Co-Chairperson

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