



AMERICAN ACADEMY *of* ACTUARIES

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To: Mr. Michael Batte, Chair  
Accident and Health Working Group of the NAIC Life and Health Actuarial Task Force

From: Mr. Bob Yee, Chair  
American Academy of Actuaries<sup>1</sup> Long-Term Care Reserve Work Group

November 26, 2003

Dear Mr. Batte,

In my letter to you dated September 9, we outlined a study of the possible reserve impact of the proposed changes in the statutory valuation standards for Long-Term Care (LTC) insurance (see attached). This letter summarizes the results of our study.

The Reserving Work Group requested calculated data from 11 companies<sup>2</sup> and a couple of consulting firms to determine the effects of various changes in reserve standards. The attached letter describes the specifics of the request.

The requested data included net premiums and reserves for the Academy's report and gross premiums for an industry report. The results by net premium<sup>3</sup>, without company names, are reported in this letter. Results were collected by Bill Weller, Omega Squared of Sedona. It should be noted that while the participating companies covered a significant portion of the total LTC in-force, the results do not represent the industry as a whole.

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<sup>1</sup> The American Academy of Actuaries is the public policy organization for 15,000 actuaries practicing in all specialties within the United States. A major purpose of the Academy is to act as the public information organization for the actuarial profession. The Academy is non-partisan and assists the public policy process through the presentation of clear and objective actuarial analysis. The Academy regularly prepares testimony for Congress, provides information to federal elected officials, comments on proposed federal regulations, and works closely with state officials on issues related to insurance. The Academy also develops and upholds actuarial standards of conduct, qualification and practice and the Code of Professional Conduct for all actuaries practicing in the United States.

<sup>2</sup> The companies are: Aegon, AFLAC, Bankers Life & Casualty, CNA, Combined, GEFA, John Hancock, New York Life, Northwestern Mutual, Penn Treaty and United Teachers Assoc.

<sup>3</sup> LTC Reserve Standards prescribe the One Year Preliminary Term Reserve Method. The net premium results reported here are the renewal net premiums, which are constant by renewal policy years. Reserve ratios were not substantially different from the net premium ratios and have not been shown to limit the size of the report.

Eight sets of results were received. One was based on data for ages other than exact age 55, 65 or 75 and another did not have data for all the requested sets of reserve requirements. The average changes, based on net premiums, for the remaining six companies are shown in the table below. The ratios for B(1) – B(3) are to the current tabular assumptions (Set A) without consideration for the company’s actual reserves<sup>4</sup>. The ratios for C are the current company reserve basis to current tabular. The ratios for all D-types are to the Set C values.

Table Ratios of Net Premiums (Average of Six Companies)							
	Age 55		Age 65		Age 75		IP = Inflation Protection
	w/o IP	+IP	w/o IP	+IP	w/o IP	+IP	
B(1)	1.31	1.43	1.19	1.25	1.09	1.12	New tabular lapses
B(2)	1.03	1.05	1.03	1.04	1.02	1.03	94 GAM Static
B(3)	1.36	1.51	1.22	1.31	1.12	1.16	Both of above
C	1.45	1.67	1.25	1.36	1.11	1.17	Current company assumptions
D(1)	1.04	1.05	1.03	1.04	1.02	1.02	80% co lapse or new tabular
D(2) and D(3) didn't change from Set C reserves							
D(4)	1.02	1.03	1.02	1.03	1.03	1.02	94 GAM Static Table <sup>a</sup>
D(5)	1.14	1.22	1.12	1.19	1.10	1.14	Annuity 2000 Table <sup>a</sup>
D(6)	1.05	1.04	1.04	1.04	1.03	1.03	No morbidity improvement
D(7)	1.26	1.38	1.21	1.31	1.16	1.21	9/18 Draft changes <sup>b</sup>
D(8)	1.07	1.08	1.06	1.07	1.05	1.05	10/23 Draft changes <sup>b</sup>
D(9)	Unnecessary - not reported						
<sup>a</sup> or new company assumptions in current reserves if lower.							
<sup>b</sup> 9/18 Draft proposed the Annuity 2000 Table and the 10/23 Draft proposed the 94 GAM Static Table.							

The results suggest that, among the participating companies, the provisions of the current reserve standards regarding specified mortality table and lapse rates are out-of-date and are not the basis for company reserves on new issues. The results also suggest that new reserve standards similar to those in set D(8) would increase the average reserve from current actual levels while new standards similar to those in set D(7) would require a more substantial increase.

Certain ratios were under 100% when this should not be anticipated. Due to time constraints these companies could not be contacted before the conference call when the results were presented. If there is a desire to clarify the reasons for these values or revise the tables, the Academy is willing to update the results.

attachments

<sup>4</sup> We used the same labels for the calculated results as in the attached letter except we numbered the results within a “Set”.

## LTC Ratio of Net Premiums - Age 55 Male

	*****		No Inflation Protection		*****		Average
	Co A	Co B	Co C	Co D	Co E	Co F	No IP
Ratio to Set A							
B(1)	1.27	1.34	1.31	1.22	1.39	1.34	1.31
B(2)	1.07	1.00	1.02	1.05	1.00	1.03	1.03
B(3)	1.38	1.34	1.34	1.30	1.39	1.38	1.36
C	1.54	1.37	1.52	1.05	1.91	1.30	1.45
Ratio to Set C							
D(1)	1.02	1.03	1.00	1.16	1.00	1.03	1.04
D(2)	1.02	1.03	1.00	1.10	1.00	0.90	1.01
D(3)	1.00	1.00	1.00	1.06	1.00	1.03	1.01
D(4)	1.03	1.00	1.03	1.06	1.00	1.03	1.02
D(5)	1.23	1.12	1.14	1.18	1.00	1.16	1.14
D(6)	1.13	1.14	1.00	1.00	1.00	1.00	1.05
D(7)	1.54	1.32	1.14	1.40	1.00	1.19	1.26
D(8)	1.24	1.14	1.03	1.12	0.83	1.06	1.07
	*****		With Inflation Protection		*****		Average
	Co A	Co B	Co C	Co D	Co E	Co F	with IP
Ratio to Set A							
B(1)	1.39	1.44	1.42	1.35	1.53	1.47	1.43
B(2)	1.12	1.00	1.03	1.09	1.00	1.04	1.05
B(3)	1.57	1.44	1.47	1.49	1.53	1.53	1.51
C	1.88	1.54	1.73	1.09	2.35	1.43	1.67
Ratio to Set C							
D(1)	1.02	1.03	1.00	1.23	1.00	1.03	1.05
D(2)	1.02	1.03	1.00	1.13	1.00	0.86	1.01
D(3)	1.00	1.00	1.00	1.07	1.00	1.03	1.02
D(4)	1.03	1.00	1.04	1.10	1.00	1.04	1.03
D(5)	1.37	1.19	1.20	1.35	1.00	1.24	1.22
D(6)	1.10	1.14	1.00	1.00	1.00	1.00	1.04
D(7)	1.71	1.40	1.20	1.71	1.00	1.28	1.38
D(8)	1.26	1.14	1.04	1.18	0.76	1.07	1.08

## LTC Ratio of Net Premiums - Age 65 Male

	*****		No Inflation Protection		*****		Average
	Co A	Co B	Co C	Co D	Co E	Co F	No IP
Ratio to Set A							
B(1)	1.15	1.19	1.18	1.15	1.23	1.21	1.19
B(2)	1.06	1.00	1.02	1.06	1.00	1.03	1.03
B(3)	1.23	1.20	1.22	1.22	1.23	1.24	1.22
C	1.28	1.15	1.30	1.03	1.54	1.18	1.25
Ratio to Set C							
D(1)	1.01	1.01	1.00	1.11	1.00	1.03	1.03
D(2)	1.01	1.01	1.00	1.07	1.00	.95	1.01
D(3)	1.00	1.00	1.00	1.05	1.00	1.03	1.01
D(4)	1.03	1.00	1.03	1.06	1.00	1.02	1.02
D(5)	1.19	1.10	1.12	1.18	1.00	1.14	1.12
D(6)	1.10	1.13	1.00	1.00	1.00	1.00	1.04
D(7)	1.39	1.27	1.12	1.33	1.00	1.17	1.21
D(8)	1.19	1.14	1.03	1.11	.86	1.06	1.06
	Co A	Co B	Co C	Co D	Co E	Co F	Average
Ratio to Set A							
B(1)	1.21	1.25	1.25	1.21	1.31	1.28	1.25
B(2)	1.09	1.00	1.03	1.09	1.00	1.04	1.04
B(3)	1.33	1.25	1.29	1.34	1.31	1.33	1.31
C	1.44	1.23	1.40	1.05	1.81	1.25	1.36
Ratio to Set C							
D(1)	1.01	1.02	1.00	1.15	1.00	1.03	1.04
D(2)	1.01	1.02	1.00	1.09	1.00	.93	1.01
D(3)	1.00	1.00	1.00	1.06	1.00	1.03	1.02
D(4)	1.05	1.00	1.03	1.10	1.00	1.03	1.03
D(5)	1.31	1.15	1.17	1.32	1.00	1.21	1.19
D(6)	1.09	1.14	1.00	1.00	1.00	1.00	1.04
D(7)	1.53	1.33	1.17	1.55	1.00	1.25	1.31
D(8)	1.21	1.14	1.03	1.16	.80	1.07	1.07

## LTC Ratio of Net Premiums - Age 75 Male

	*****		No Inflation Protection		*****		Average
	Co A	Co B	Co C	Co D	Co E	Co F	No IP
Ratio to Set A							
B(1)	1.07	1.09	1.09	1.08	1.13	1.10	1.09
B(2)	1.05	1.00	1.01	1.05	1.00	1.02	1.02
B(3)	1.13	1.09	1.10	1.14	1.13	1.12	1.12
C	1.06	1.01	1.14	1.01	1.32	1.09	1.11
Ratio to Set C							
D(1)	1.01	1.01	1.00	1.07	1.00	1.03	1.02
D(2)	1.01	1.01	1.00	1.04	1.00	0.99	1.01
D(3)	1.00	1.00	1.00	1.04	1.00	1.03	1.01
D(4)	1.09	1.00	1.01	1.05	1.00	1.00	1.03
D(5)	1.22	1.06	1.07	1.16	1.00	1.08	1.10
D(6)	1.06	1.11	1.00	1.00	1.00	1.00	1.03
D(7)	1.33	1.19	1.07	1.25	1.00	1.11	1.16
D(8)	1.17	1.10	1.01	1.09	0.90	1.03	1.05
	Co A	Co B	Co C	Co D	Co E	Co F	Average
Ratio to Set A							
B(1)	1.10	1.11	1.12	1.12	1.17	1.14	1.12
B(2)	1.07	1.00	1.02	1.07	1.00	1.03	1.03
B(3)	1.18	1.10	1.14	1.20	1.17	1.17	1.16
C	1.18	1.03	1.19	1.02	1.46	1.12	1.17
Ratio to Set C							
D(1)	1.01	1.01	1.00	1.10	1.00	1.03	1.02
D(2)	1.01	1.01	1.00	1.06	1.00	0.98	1.01
D(3)	1.00	1.00	1.00	1.05	1.00	1.03	1.01
D(4)	1.05	1.00	1.02	1.07	1.00	1.00	1.02
D(5)	1.24	1.09	1.10	1.26	1.00	1.13	1.14
D(6)	1.05	1.11	1.00	1.00	1.00	1.00	1.03
D(7)	1.37	1.22	1.10	1.40	1.00	1.17	1.21
D(8)	1.13	1.10	1.02	1.13	0.85	1.04	1.05



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To: Mr. Michael Batte, Chair  
Accident and Health Working Group of the NAIC Life and Health Actuarial Task Force

From: Mr. Bob Yee, Chair  
American Academy of Actuaries<sup>1</sup> Long-Term Care Reserve Work Group

September 9, 2003

Dear Mr. Batte,

During the June NAIC meeting, the American Academy of Actuaries Long-Term Care (LTC) Reserve Work Group presented our report in support of your Working Group's effort on revising the statutory valuation standards for LTC. Since then, a proposed valuation model regulation was published and initially discussed during a conference call on August 18. Our Work Group is ready to assist in evaluating the reserve impact of the proposed regulation.

Specifically, we will illustrate the anticipated impact of various hypothetical changes in the mortality, voluntary lapse, interest and morbidity valuation assumptions on net renewal valuation premiums and contract reserves by policy duration. Our intention is to demonstrate sensitivity to the choices of assumptions. In no way is the Academy representing the expected reactions in the marketplace if the proposed valuation standards were adopted.

An outline of the insurance plans to be modeled, the calculation specifications and the time frame is attached. We understand that a number of companies participating in this analysis will work through Bill Weller to address the potential effects on gross premiums under certain calculation specifications in the outline.

We would appreciate any questions or comments your Working Group may have.

attachment

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**American Academy of Actuaries Long-Term Care Reserve Work Group**  
**PROPOSED IMPACT STUDY OF PROPOSED LTC VALUATION STANDARDS**

September 9, 2003

***I Model Plan Cell Description***

1. Individual integrated benefit plan covering facility stays and 100% home health care
2. \$100 daily maximum benefit, 90 day elimination period, 5 year benefit period (or dollar equivalent)
3. Married male and female
4. No inflation protection and 5% compounded
5. Issue ages 55, 65 and 75

***II Calculation Specifications***

1. Calculate net renewal valuation premiums and contract reserves by policy Duration: 3, 8, 13, 18, 23 and 28
2. **Set A - Tabular Baseline** (1 run):
  - Company's morbidity assumption (no morbidity improvement)
  - 4.5% interest
  - Voluntary lapse rates: 8% (years 1-4) and 4% thereafter
  - 1983 GAM Static Table
3. **Set B - Changes to Tabular Assumptions** (3 runs):
  - Set A but with voluntary lapse rates: 6% (year 1), 4% (years 2-4) and 2% thereafter
  - Set A but with 1994 GAM Static Table
  - Set A but with 1994 GAM Static Table and voluntary lapse rates: 6% (year 1), 4% (years 2-4) and 2% thereafter
4. **Set C - Company Current Practice** (1 run):
  - 4.5% interest
  - Company's current valuation assumptions under current valuation standards
  - If morbidity improvement assumption is used, company must disclose the corresponding changes in other assumptions, if any
5. **Set D - Changes to Reserve Assumptions** (9 runs):

- Set C but with revised voluntary lapse assumption under proposed voluntary lapse standards
  - Set C but with revised voluntary lapse assumption under a minimum of 6% (year 1), 4% (years 2-4) and 3% thereafter
  - Set C but with revised voluntary lapse assumption under proposed voluntary lapse standards and without the 80% of pricing after 4 policy years
  - Set C but with 1994 GAM Static Table
  - Set C but with Annuity 2000 Table
  - Set C but with proposed morbidity standards (i.e. no morbidity improvements)
  - **Current NAIC Proposal:** 4.5% interest, lapse rates lesser of 80% of pricing and 6% (year 1), 4% (years 2-4), 2% thereafter, Annuity 2000 Table and no morbidity improvement
  - **Academy's Understanding of Industry Proposal:** 4.5% interest, lapse rates lesser of 80% of pricing (years 1-4), 100% thereafter and 6% (year 1), 4% (years 2-4), 2% thereafter, 1994 GAM Static Table and no morbidity improvement
  - **Alternative Proposal:** Industry Proposal but with 5.0% interest and Annuity 2000 Table
6. Notes:
- Participating companies will be identified
  - Results will not be identified by company

### **III Time Frame**

September 15 <sup>th</sup>	Run specification finalized
October 15 <sup>th</sup>	Tester completed work
October 31 <sup>st</sup>	Draft report from AAA completed
November 10 <sup>th</sup>	HIAA incorporated gross premium results
November 15 <sup>th</sup>	Report delivered to NAIC