

Draft date: 11/16/23

*2023 Fall National Meeting
Orlando, Florida*

LONG-TERM CARE ACTUARIAL (B) WORKING GROUP

Thursday, November 30, 2023

1:00 – 2:30 p.m.

Floridian Ballroom G-I - Level 1 - Bonnet Creek


ROLL CALL

Paul Lombardo, Co-Chair	Connecticut	Anna Krylova	New Mexico
Fred Andersen, Co-Chair	Minnesota	Bill Carmello	New York
Sanjeev Chaudhuri	Alabama	David Yetter	North Carolina
Sarah Bailey	Alaska	Laura Miller	Ohio
Ahmad Kamil	California	Andrew Schallhorn	Oklahoma
Benjamin Ben	Florida	Timothy Hinkel	Oregon
Weston Trexler	Idaho	Jim Laverty	Pennsylvania
Scott Shover	Indiana	Carlos Vallés	Puerto Rico
Nicole Boyd	Kansas	Andrew Dvorine	South Carolina
Marti Hooper	Maine	Aaron Hodges	Texas
Kevin Dyke	Michigan	Tomasz Serbinowski	Utah
William Leung	Missouri	Joylynn Fix	West Virginia
Michael Muldoon	Nebraska	Shelly Knorr	Wisconsin
Jennifer Li	New Hampshire		

NAIC Support Staff: Eric King

AGENDA

1. Consider Adoption of its Oct. 2 and Spring National Meeting Minutes—
Fred Andersen (MN)
and Paul Lombardo (CT)
2. Consider Adoption of a Modification to *Actuarial Guideline LI—The Application of Asset Adequacy Testing to Long-Term Care Insurance Reserves (AG 51)* —*Fred Andersen (MN) and Paul Lombardo (CT)*
3. Hear an Update on a Single Long-Term Care Insurance (LTCI) Multistate Rate Review Approach—*Fred Andersen (MN) and Paul Lombardo (CT)*
4. Discuss Any Other Matters Brought Before the Working Group
— *Fred Andersen (MN) and Paul Lombardo (CT)*



5. Adjournment

Draft: 10/24/23

Long-Term Care Actuarial (B) Working Group
Virtual Meeting
October 2, 2023

The Long-Term Care Actuarial (B) Working Group of the Health Actuarial (B) Task Force met Oct. 2, 2023. The following Working Group members participated: Paul Lombardo, Co-Chair (CT); Fred Andersen, Co-Chair (MN); Sanjeev Chaudhuri (AL); Ahmad Kamil (CA); Weston Trexler (ID); Nicole Boyd (KS); Marti Hooper (ME); Kevin Dyke (MI); William Leung (MO); Michael Muldoon (NE); Jennifer Li (NH); Frank Horn (NY); Craig Kalman (OH); Jim Laverty (PA); Aaron Hodges and R. Michael Markham (TX); and Tomasz Serbinowski (UT). Also participating was: Michael Sink (OR).

1. Discussed a Referral from the Health Risk-Based Capital (E) Working Group

Andersen said the Working Group received a referral (Attachment XX) from the Health Risk-Based Capital (E) Working Group regarding *Actuarial Guideline LI—The Application of Asset Adequacy Testing to Long-Term Care Insurance Reserves* (AG 51). He said the referral requests the addition of a sentence to AG 51 that clarifies that regardless of which annual statement blank (health, life/accident/health & fraternal, or property/casualty) an insurer files, it must make an AG 51 filing if the AG 51 filing requirement criteria are met.

Dyke asked if it might be better to add the clarification to the *Annual Statement Instructions*. Lombardo said the quickest way to address the referral is to make the clarification in AG 51, and the Working Group can discuss additions to the *Annual Statement Instructions* in the future.

Andersen said the Working Group will expose draft language to add the clarification to AG 51 for public comment.

2. Discussed a Single Long-Term Care Insurance Multistate Rate Review Approach

Andersen said the Working Group was asked by the Long-Term Care Insurance (EX) Task Force to develop a single long-term care insurance (LTCI) rate increase review methodology for use in multistate actuarial (MSA) filing reviews to replace the currently used Minnesota and Texas approaches. He said a single approach was last discussed during the Working Group's Aug. 12 meeting. He said he wants to continue discussing whether older age/higher duration/higher past rate increase policyholders should have more limited future rate increases than younger policyholders and what financial impact this will have on insurers. He said the Working Group has discussed how many more increased premiums older policyholders can be expected to pay based on persistency, continuance, and mortality tables, and if this is a low number, if older policyholders should be subjected to the rate increase. He said the Working Group has asked the industry to compile metrics on the present value of expected future premium payments for older policyholders.

Jan Graeber (American Council of Life Insurers—ACLI) said ACLI looked at the impact of a cap on rate increases for older attained ages and later durations. She said one block was analyzed, and it was found that 50% of policyholders were over age 80, and 25% were over age 85. She said ACLI continues to support the Task Force's initial charge of developing a consistent national approach to LTCI rate increase reviews in a timely manner that eliminates cross-state rate inequities. She said she wants to highlight that actuarial justification of a rate increase is foundational to the viability of any insurance product, and limiting rate increases for older policyholders is not grounded in actuarial science and is inconsistent with the Task Force's original charge. She said ACLI recognizes there are policy challenges, and that some adjustments may be needed to the MSA recommendation on a case-by-case basis, but the adjustments should be an exception, not the rule. She said ACLI will continue to support

actuarially justified recommendations from the MSA process but cannot support changes to the methodology that are not actuarially justified.

Ray Nelson (America's Health Insurance Plans—AHIP) said for the block that ACLI analyzed, AHIP used standard mortality tables for analysis and found that policyholders aged 80 were expected to pay seven more premiums, and those aged 85 were expected to pay between five and six more premiums. He said as a rule, the data shows there will be significant premium volume from these older aged insureds.

Muldoon asked Graeber and Nelson what issues companies would have with implementing rate increases using attained age when the policies were sold on an issue-age basis. Graeber said the concern is that policies were priced on an issue-age basis and the fact that there is no class for attained age was raised by ACLI members. There is also concern that there could be discrimination issues with limits based on attained age. She said many companies use legacy systems for their blocks, and the systems will need to be modified to implement and limit rate increases using attained age. Lombardo said carriers have historically offered to effectively adjust rate increases based on attained age, even though the product was issue-age priced, and this is not a new concept for them. He said some carriers have also implemented reduced benefit options that vary by a class that was not identified in the original pricing. He said he does not know how many states have reviewed and allowed reduced benefit options or rate increases that vary by a class that was not identified in the initial pricing. Nelson said some companies have said they have tried to implement attained age variations by reverse engineering using the issue age.

Lombardo said he thinks this can be accomplished by applying durational factors to each issue age. He said he does not know if this addresses the industry's concern that these modifications be actuarially justified. He said he thinks it is possible to develop a structure that ensures an insured never pays more than the value of their expected benefit at that time. He said the biggest issue commissioners, superintendents, and directors of insurance departments have when evaluating a rate increase request is how to limit increases for older, longer-duration policyholders. Graeber said the ACLI does not think such adjustments cannot or should not be made but does not think a one-size-fits-all solution is appropriate for different blocks with diverse characteristics. She said the recommendation that comes from the MSA process needs to be actuarially justified, and states can discuss the characteristics of a given block with companies if needed. She said embedding an adjustment factor in the process seems to deviate from the Task Force's initial charge. Lombardo said the initial charge has changed somewhat over time, and states are now looking for a consistent product from the MSA process that they can use as part of their analyses.

Andersen asked if there were any objections to the Working Group continuing to pursue the issue of reducing rate increases for older, longer-duration policyholders. There were no objections.

Andersen said there is a proposal to modify the Minnesota approach as a way of developing the single LTCI rate increase review methodology. He said the cost-sharing formula will be modified to increase companies' cost-sharing burden as cumulative rate increases grow. He asked participants to consider this proposal prior to it being discussed during the Working Group's next meeting.

Andersen said Serbinowski provided a draft of a proposed methodology that builds on the Minnesota approach. He said the proposed methodology features a much quicker blending into the lower if-knew premium from the makeup premium and eliminates the cost-sharing component. He said the industry agreed that there would be an appropriate mix of consumer protection and guarding against insurer financial distress during the early years of a policy's life, but argued rate increases will be far too low later in a policy's life. He asked if the Working Group should continue to evaluate and possibly modify the proposed approach. Lombardo said if the proposed

methodology had been applied earlier in a product's lifespan, there would have been opportunities for more significant rate increases earlier. He said applying the methodology midway through the product's lifespan reduces allowable rate increases. He asked if there could be an adjustment to the methodology that recognizes what point in the lifespan the block is currently at. Serbinowski said he does not know of an easy way to do this. He said the proposed methodology may be too restrictive for legacy blocks of business. Andersen asked participants to analyze whether adjustments to either the Minnesota or Serbinowski approaches can produce a resolution to inadequate rate increases later in a product's lifespan.

Andersen said some states have expressed that the explicit cost-sharing formula in the Minnesota approach is very helpful when discussing rate increases with consumers and interested parties, as it can be shown that insurers are absorbing a substantial part of the actually needed rate increase. He asked participants if there were any additional considerations that should be made for developing a single LTCI rate increase review methodology. Sink asked if there should be a mechanism to prevent increases in administrative costs and profits when rates are increased. Andersen said the Minnesota approach sets a dollar amount of original profitability per policyholder that will not be exceeded.

Having no further business, the Long-Term Care Actuarial (B) Working Group adjourned.

Meetings/Member Meetings/B CMTE/HATF/2023_Fall/10-02-23 LTCAWG/Minutes_LTCAWG_10-02-23.docx

Draft Pending Adoption

Attachment --
Health Actuarial (B) Task Force
8/12/23

Draft: 8/21/23

Long-Term Care Actuarial (B) Working Group
Seattle, Washington
August 12, 2023

The Long-Term Care Actuarial (B) Working Group of the Health Actuarial (B) Task Force met in Seattle, WA, Aug. 12, 2023. The following Working Group members participated: Paul Lombardo, Co-Chair (CT); Fred Andersen, Co-Chair (MN); Sanjeev Chaudhuri (AL); Thomas Reedy (CA); Wes Trexler (ID); Nicole Boyd (KS); Marti Hooper (ME); Kevin Dyke (MI); William Leung (MO); Michael Muldoon (NE); Jennifer Li (NH); Anna Krylova (NM); Michael Cebula (NY); Craig Kalman (OH); Andrew Schallhorn (OK); Jim Laverty (PA); Aaron Hodges and R. Michael Markham (TX); and Tomasz Serbinowski (UT).

1. Adopted its July 19, June 7, and May 1 Minutes

Lombardo said the Working Group met July 19, June 7, and May 1. During these meetings, the Working Group took the following action: 1) discussed comments received on a request for comments on various long-term care insurance (LTCI) rate increase review methodologies; 2) discussed comments received on exposures of ideas for a single LTCI rate increase review methodology for use in multistate actuarial (MSA) filing reviews; and 3) discussed comments received on proposals to revise the Nationally Coordinated LTCI Rate Increase Review Checklist and comments received on an exposure of the Minnesota and Texas LTCI rate increase review methodologies.

Dyke made a motion, seconded by Schallhorn, to adopt the Working Group's July 19 (Attachment XX), June 7 (Attachment XX), and May 1 (Attachment XX) minutes. The motion passed unanimously.

2. Discussed Drafting Changes to VM-25

Lombardo said drafting changes to VM-25, Health Insurance Reserves Minimum Reserve Requirements, of the *Valuation Manual* to add tables from the American Academy of Actuaries (Academy) and Society of Actuaries (SOA) Research Institute's final Long-Term Care Insurance Mortality and Lapse Study were last discussed during the Working Group's Oct. 17, 2022, meeting. Serbinowski said he has begun drafting language for VM-25 and Appendix A-010, Minimum Reserve Standards for Individual and Group Health Insurance Contracts of the *Accounting Practices and Procedures Manual* (AP&P Manual) to incorporate the tables. He said the Working Group will schedule a meeting soon to discuss this draft language and work towards exposing changes to incorporate the tables from the Academy and SOA Study into VM-25 and Appendix A-010.

3. Discussed a Referral from the Health Risk-Based Capital (E) Working Group

Lombardo said the Working Group has received a referral (Attachment XX) through the Health Actuarial (B) Task Force from the Health Risk-Based Capital (E) Working Group regarding *Actuarial Guideline LI—The Application of Asset Adequacy Testing to Long-Term Care Insurance Reserves* (AG 51). He said the Health Risk-Based Capital (E) Working Group is developing criteria for insurers that file their annual statements on Life/Accident/Health & Fraternal Blanks to potentially file on Health Blanks in the future, and concerns were raised that it needs to be made clear that a move to the Health Blank does not remove an insurer's obligation to submit an AG 51 filing if the criteria for filing under AG 51 is still met. He said the Working Group will discuss the referral at its next meeting.

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4. Heard a Presentation on Public/Private LTC Funding Solutions

Steve Schoonveld (FTI Consulting) gave a presentation (Attachment XX) on public/private collaborations to increase consumer access to long-term care (LTC) financing, services, and support.

5. Heard an Update on a Single LTCI Multistate Rate Review Approach

Andersen said the Working Group has discussed developing a single LTCI rate increase review methodology for use in MSA filing reviews at its past few meetings. He said the MSA Team does not want to continue to use the Texas and Minnesota approaches if they produce illogical results and result in untimely rate increase approvals, and the Working Group wants to have a single methodology in use soon. He said Serbinowski provided a draft of a proposed methodology that builds on the Minnesota approach structure that allows an insurer to receive a rate increase in earlier product years that gets the insurer closer to its original economic expectations, and then in later product years ensures that policyholders do not pay more than the value of their expected claims and related expenses. He said the proposed methodology would diverge from an increase that returns the insurer to its original expectations more quickly than the Minnesota approach, and it would result in a lower rate increase. He said he modeled modifications to the Minnesota approach that will produce higher rate increases than it yields as is but does not grade down from the insurer's original expectations as quickly as Serbinowski's proposal. He said the MSA Team examined the Texas approach and found that it does not work well for older blocks of business, especially those that have had rate increases that predate the use of the Texas approach.

Andersen said members of the MSA Team agree that older policyholders that have experienced past rate increases should have lower future rate increases than shorter-duration policyholders that have not experienced as many rate increases. He said large rate increases for older policyholders do not seem appropriate, as they have fewer remaining premiums to be paid than younger policyholders, and the effect of large increases on few remaining premiums does not create much of a financial impact on the insurer.

Andersen said he wants the Working Group to discuss the following issues, which need to be addressed in order to develop a single methodology to present to the Long-Term Care Insurance (EX) Task Force in a timely fashion: 1) whether adjustments to the Minnesota approach's cost-sharing formula can result, generally, in older age/higher duration/higher past rate increase policyholders having their future rate increases be more limited than under the current approach; 2) whether such an adjusted Minnesota approach would align with key principles such that it could be considered a candidate for the single actuarial approach; and 3) whether interest rate history and expectations should be a part of a single actuarial approach like it is with the Minnesota approach.

Andersen asked if members of the Working Group, interested state regulators, or interested parties share the concern for a need for limiting future rate increases for older age/higher duration/higher past rate increase policyholders. Lombardo said he and Connecticut, and he imagines all of the states, do not have an expectation that a policyholder who has paid 20 to 25 years of premium already and is not expected to pay a significant number of future premiums should receive as high of a rate increase as a policyholder who is expected to pay future premiums for 25 to 30 more years. He said he understands that different insurers have different distributions of policyholder attained ages within their blocks, and any formula to reduce increases for older policyholders would depend on these distributions. Trexler said he agrees with Lombardo, and he wants to see if such a formula can be integrated into Serbinowski's proposal.

Serbinowski asked how a closed block of policies should be defined. He asked if a block is considered closed after the last policyholder dies or lapses, or if it is when a specified percentage of total premiums have been paid. He

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said with few remaining policyholders, a 50% rate increase may only result in a loss ratio decrease of 0.1%. He said his proposal for a single approach does not require there to be a definition of when a block is closed.

Lombardo said he has seen a growing support from insurance department commissioners for the use of a single approach in MSA reviews. He said a single approach is easier to explain, and more supportable. The weighting of the Minnesota and Texas approaches that varies depending on characteristics of the block does not translate well to commissioners. He said he believes having a single approach will allow the MSA Team to reach better outcomes more quickly than with the current blending of approaches.

Birny Birnbaum (Center for Economic Justice—CEJ) said the CEJ supports a single approach. He said it may be better to consider the dynamics of small, closed blocks of business rather than differences within a block. He asked how likely it is that a particular block of policies will have age differences of 30 years, as well as how many blocks of business and consumers will be affected. He asked how the age where rate increases would be reduced will be determined, whether it will be a specified age or if the age would be determined based on a percentage impact on premium. Lombardo said the Working Group has been considering these issues as they relate to how a single approach will treat reduced increases for older policyholders. Birnbaum asked if the reduction in increase formula will be applied consistently from state to state and if there is a risk of legal action being taken for unfair discrimination against certain classes of policyholders. Andersen said he does not believe there is a risk of legal action, as the adjustment will only be a change to the slope of rates by attained age. He said ideally, all states will apply the formula consistently, but the final rate increase determination is at each state's discretion.

Jan Graeber (American Council of Life Insurers—ACLI) said any single approach recommendation needs to be grounded in actuarial science. She said ACLI members believe modifications to rate increases based on attained age and duration cannot be a one-size-fits-all solution due to the variance in block characteristics. She said the ACLI asserts that rate increases at older attained ages affect insurers' financial status. She said the ACLI reviewed a rate increase filing for a block with over 3,000 policyholders and grouped the seriatim data by whether a policyholder was on the claim, of policy issue age, and attained the age at the time of the claim. She said the ACLI found that almost 50% of premiums were attributable to policyholders over age 80, and roughly 25% of premiums were attributable to those over age 85. She said the present values of future premiums were calculated for attained ages 80 and 85. She said some of these policyholders may pay premiums for only two years, but some may pay premiums for seven to 10 more years. She said there was a 100-year-old active policyholder who was still paying premiums. She said many policyholders continue to pay premiums after a rate increase because they realize there is a potential benefit that is far greater than the cost of increased rates. She said the ACLI has concerns that administering rate increases that vary by attained age will be burdensome for insurers, as systems for policies that were sold on an issue-age basis will need to be modified to use attained age-based rating.

Ray Nelson (America's Health Insurance Plans—AHIP) said he agrees with Graeber that a one-size-fits-all approach is not appropriate.

Andersen said the Working Group will schedule a meeting dedicated to the discussion of the attained age rate increase modification issue. He said information that Graeber said the ACLI found for premiums attributable to older issue ages will be helpful for this discussion, as will similar information from any other interested parties. He said the Working Group will schedule another meeting to address removing the cost-sharing component of the Minnesota approach for consideration in using a modified Minnesota approach as a basis for the single approach.

Lombardo said there is a great sense of urgency in developing a single approach, and the Working Group is willing to dedicate a significant amount of time over the next few months to developing a single approach.

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Having no further business, the Long-Term Care Actuarial (B) Working Group adjourned.

SharePoint/NAIC Support Staff Hub/Committees/ ...

To: Long-Term Care Actuarial (B) Working Group Members, Interested Regulators, and Interested Parties

The Health Risk-Based Capital (E) Working Group established the Health Test Ad Hoc Group in 2018 to review the health test language within the Annual Statement Instructions due to inconsistencies in reporting of health business across the different blanks, as well as a significant amount of health business reported on the life and fraternal blank. Through the evaluation and discussion of changes to the health test, there was a question brought up as to whether an entity would still be required to comply with Actuarial Guideline LI—The Application of Asset Adequacy Testing to Long-Term Care Insurance Reserves (AG 51) requirements for long-term care insurance (LTCI) business if the entity moved from the life blank to the health blank. In consideration of the Health Risk-Based Capital (E) Working Group's request for a sentence to be added to AG 51 to clarify the applicability to insurers filing health blanks, the Long-term Care Actuarial (B) Working Group is considering the following wording that would indicate that regardless of the blank the entity files, AG 51 filing is required by the entity if the criteria stated in the Guideline are met.

Please review the proposed addition to Section 3 of AG 51 below and provide comments to eking@naic.org by Wednesday,, October 18:

3. Scope

This Guideline shall apply to a company with over 10,000 inforce lives covered by long-term care insurance contracts as of the valuation date, **regardless of which Annual Statement blank (Health, Life/Accident/Health & Fraternal, or Property/Casualty) the company files with its domiciliary state's insurance regulatory authority**. All long-term care insurance contracts, whether directly written or assumed through reinsurance are included. Accelerated death benefit products or other combination products where the substantial risk of the product is associated with life insurance or an annuity are not subject to this Guideline.

Thanks,
Eric

Minnesota approach to LTC rate increase reviews

Fred Andersen, FSA, MAAA

Chief Life Actuary, Minnesota Department of Commerce

Original 2015 Minnesota considerations

- Balance is key with LTC
 - Protecting individual policyholders
 - Help prevent further financial distress for LTC insurers
 - Recognition of severe insurer losses for most LTC blocks
 - Every aspect of our method is still grounded in that
- Cost-sharing is justified
 - Companies generally did not alert consumers that rates could double or triple over time
 - Companies had or should have had more information than consumers on the possibility of rates doubling or tripling
 - Continued theme of balance:
 - Not “no rate increases” but
 - Developed cost-sharing formula that lowers rate increases as otherwise approvable rates double, triple, or more from original rates

Original 2015 Minnesota considerations

- Avoid policyholders paying higher premiums over time than their expected claims and associated costs
 - Also known as “shrinking block” issue
 - Increasing rates on remaining policyholders to get company back to original loss ratio leads to an increasing burden on shrinking number of persisting policyholders
 - Blended makeup / if-knew aspect was developed to address this issue
 - Keeping in mind the desired balance, as well
 - Allowing only the if-knew premium as the maximum rate would cause too much financial distress to insurers, in our minds
 - The blended approach reduces financial distress while also ensuring policyholders get fair value from their policies even at increased rates

Minnesota method development & vetting

- Goal in 2015: develop an objective method that incorporates these principles and will be approvable by the commissioner
- Vetting, documentation, application:
 - Public vetting by the NAIC LTC Pricing Subgroup several years ago
 - Public vetting by the NAIC LTC (EX) Task Force
 - The method is documented in the NAIC LTC Multistate Rate Review Framework
 - The method has been applied to 247 rate increase filings since 2015 and seems to be working / incorporating the principles
 - Balance seems to be applied
 - Mitigates extreme rate increases
 - Mitigates extreme financial losses for the blocks
 - The method has been applied to each MSA team recommendation
 - No negative feedback on report comment periods or in webinars

Other application issues

- Phase ins
 - Goals:
 - Lessen the shock of a steep rate increase
 - Informed consumers re: RBC decision
 - We will pre-approve an x-year phase-in
 - The policyholder notification letter will state each increase related to the phase in
 - We believe this provides more complete information for policyholders faced with RBO decisions
 - Phase in maximums:
 - 15% for typical case, moderate total rate increase approvals
 - 20% for higher total rate increase approvals
 - 20% or higher annual phase-in possible if solvency concerns would be exacerbated by lower phase-in amount
 - Phase-in period tends to be 4 years or less
 - Another area where we try to apply balance

Other application issues

- Waiting periods between rate increase requests
 - In Minnesota, waiting periods are aligned with the phase-in period
 - Don't want too long of a waiting period, potentially leading to delayed reflection of adverse experience and spiked subsequent rate increases
 - The next filing can be made before the end of the phase-in period
 - Implementation must wait until the end of the phase-in period

Potential improvement

- Experience in Minnesota and comments from other states:
 - Concern about extent of very high-age policyholders receiving additional rate increases
 - On top of very high rate increases that have already occurred
- Consideration for adjustment to Minnesota method
 - Adjustment to cost-sharing formula
 - Still maintain the “balance”
 - Reduce extent of further rate increases for very high-aged policyholders
 - Example:
 - Increase last cost-sharing threshold to 200%
 - Increase cost-sharing for cumulative rate increases in excess of 200%



Texas Department
of Insurance

Standalone Long-Term Care Texas Method

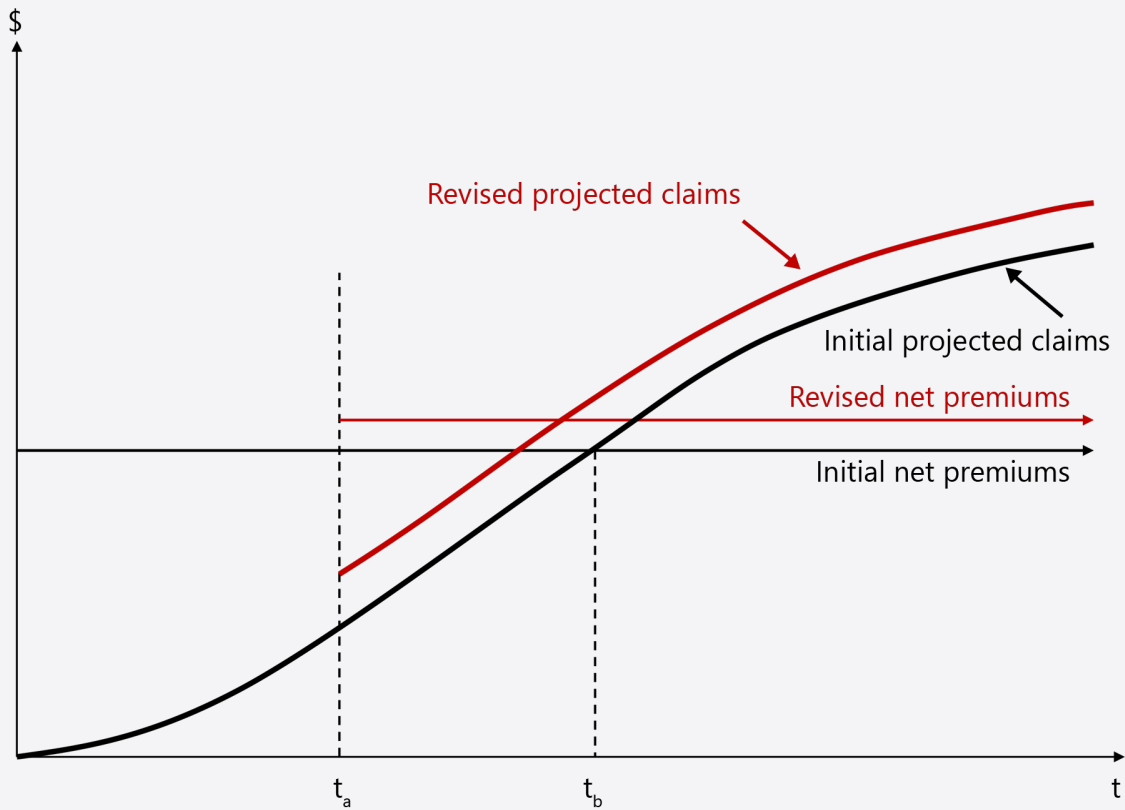
R. Michael Markham
Senior actuary and director



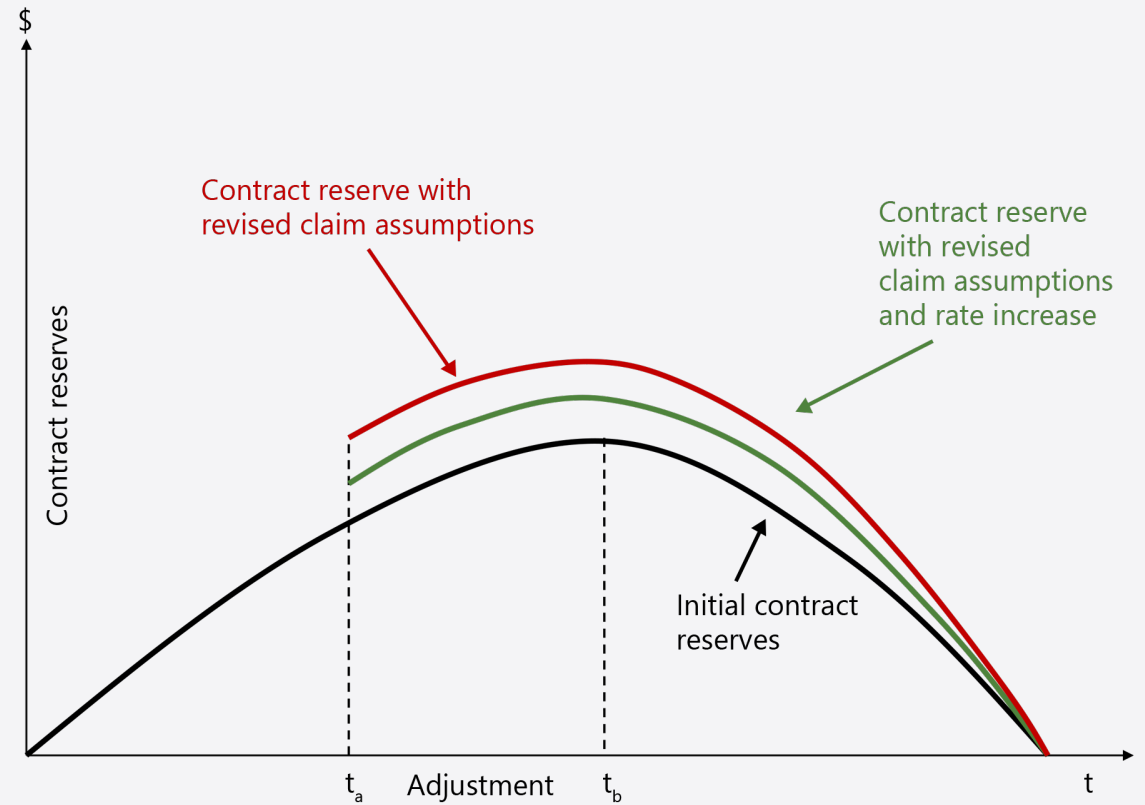
- The Texas Method takes a prospective present value (PPV) approach.
- It looks at the condition of a block of long-term care contracts from the position of the insurer at the time of the valuation.
- When reviewing rate increases, regulators should consider:
 - Sustainable premium (also known as “if-knew” or “marginal premium”).
 - Contract reserve deficiency.

TDI | Rate adjustment with revised assumptions

Sustainable premium



Contract reserve



TDI | Why do we need contract reserve?

- Claims occur in later years, so the needed premium increases substantially in those years.
- A contract reserve is required to ensure the adequacy of premium. (Health Insurance Reserves Model Regulation MDL-10, Section 4).
- The contract reserve acts as a “savings account” to offset higher premiums in later years.

TDI | Contract reserve development: The k factor

Understanding the k factor is key to understanding the Texas Method.

- The k factor is the expected lifetime loss ratio.
- The k factor is multiplied by the gross premium to determine the net premium.
- This is how contract reserves are calculated on a Generally Accepted Accounting Principles (GAAP) basis and the basis for the Texas Method.
- Contract reserves reported to states are less than those reported in GAAP.

Why the difference?

The first year premium covers acquisition costs, then the contract reserve begins.

TDI | Annual gross premium valuation (GPV)

- MDL-10 requires an annual review of held contract reserve to make sure reserves are adequate.
- This review is an early warning of the impact of adverse experience. The insurer must take action to make sure reserves are adequate.
- Held contract reserves are determined by prior assumptions.
- Necessary contract reserves are determined by the new assumptions that are adjusted to reflect experience.

TDI | Projected future experience

The NAIC Sample Texas Method spreadsheet shows these cash flows:

Year	Prior assumptions		Current assumptions (no rate increase)	
	Earned premium	Incurred claims	Earned premium	Incurred claims
2022	\$ 60,578,415	\$ 27,309,224	\$ 60,746,338	\$ 32,401,667
2023	59,201,682	30,604,632	59,503,152	36,370,288
2024	57,840,378	34,267,151	58,248,857	40,788,845
2025	56,468,810	38,377,302	56,963,775	45,756,001
2026	55,066,488	42,998,290	55,631,763	51,347,917
...
2070	12,137	103,039	11,216	109,978
PV 2022+	719,763,774	1,327,992,853	728,218,955	1,578,668,871
4.00%				

TDI | Texas Method: Prospective formula

Rate stabilized formula

Rate increase %

$$= \frac{\Delta PV \text{ (future claims)} - \left(\frac{.58 + .85C}{1 + C} \right) \Delta PV \text{ (future premiums)}}{.85 * PV_{\text{current}} \text{ (future premiums)}}$$

Pre-rate stabilized formula

Rate increase %

$$= \frac{\Delta PV \text{ (future claims)} - \left(\frac{.60 + .80C}{1 + C} \right) \Delta PV \text{ (future premiums)}}{.80 * PV_{\text{current}} \text{ (future premiums)}}$$

TDI | Texas Method: Prospective formula

Formula components:

- **ΔPV (future claims)** – Additional future claim liability based on revised assumptions.
- **$\left(\frac{.58+.85C}{1+C}\right) \Delta PV$ (future premiums)** – ΔPV (future net premiums) based on revised assumptions where C is the cumulative percentage rate increases to date.
- **$0.85 * PV$ current (future premiums)** – Remaining available premium to which the rate increase will be applied. That is prior premium rate with current assumptions.

TDI | What the Texas formulas calculate

- Premiums are adjusted based on the new assumptions so that the necessary contract reserve is the same as the held reserve.
- The contract reserve shortage with the new assumptions is passed to policyholders in future premiums.
- Premiums are adjusted so that the insurer doesn't suffer a loss due to a contract reserve shortage.
- The policyholder takes the full brunt of the contract reserve shortage.

The Texas Method passes contract reserve shortages to policyholders:

- rate increase % =
$$\frac{\Delta PV(\text{future claims}) - \left(\frac{.58+.85C}{1+C}\right) \Delta PV(\text{future gross premiums})}{.85 * PV_{\text{current}} (\text{future gross premiums})}$$

- $\left(\frac{.58+.85C}{1+C}\right)$ is the k factor converting gross premiums to net premiums.

- rate increase % =
$$\frac{\Delta PV(\text{future claims}) - \Delta PV(\text{future net premiums})}{.85 * PV_{\text{current}} (\text{future gross premiums})}$$

- rate increase % =
$$\frac{PVFB_C - PVFB_P - [PVFNP_C - PVFNP_P]}{.85 * PV_{\text{current}} (\text{future gross premiums})}$$

- rate increase % =
$$\frac{PVFB_C - PVFNP_C - [PVFB_P - PVFNP_P]}{.85 * PV_{\text{current}} (\text{future gross premiums})}$$

- rate increase % =
$$\frac{\text{ContractReserve}_C - \text{ContractReserve}_P}{.85 * PV_{\text{current}} (\text{future gross premiums})}$$

Note: Contract reserves reflect pricing. Actual statutory reserve will likely be lower due to a higher k factor and less materially required statutory assumptions.

TDI | Texas Method example

- NAIC's Sample Texas Method spreadsheet will automatically adjust if the cumulative rate increase is changed.
- In this example, no prior rate increase is assumed. This makes the k factor 58%.

The justified rate increase will be:

$$\frac{\Delta PV(\text{future incurred claims}) - \left(\frac{.58 + .85C}{1+C}\right) \Delta PV(\text{future earned premiums})}{.85 * PV_{\text{current}}(\text{future earned premiums})} =$$

$$\frac{(250,676,018) - (.58)(8,455,181)}{.85 * (728,218,955)} = 39.7\%$$

TDI | Contract reserve deficiency

Texas Method from a contract reserve deficiency perspective.

Prior assumptions:

<u>Heading</u>	<u>Amount</u>
PVFB	\$ 1,327,992,853
PVFP * K factor	417,462,989
Contract reserve	\$ 910,529,864

Texas Method equal to the contract reserve deficiency/future net premium:

- Deficit in contract reserve - \$245,772,013
- 85% of future premium - \$618,986,112
- Needed rate increase - 39.7%

Current (revised) assumptions:

<u>Heading</u>	<u>Amount</u>
PVFB	\$ 1,578,668,871
PVFP * K factor	422,366,994
Contract reserve	\$ 1,156,301,877

Current assumptions with rate increase:

<u>Heading</u>	<u>Amount</u>
PVFB	\$ 1,578,668,871
PVFP * K factor	668,139,007
Contract reserve	\$ 910,529,864

TDI | Texas Method limitations

- Doesn't determine the marginal premium.
- If prior increases result in premium being below the marginal premium, the justifiable rate increase might not be enough to sustain the block of contracts.
- The contract reserve deficit will be greater in states with larger gaps from the marginal premium. This results in larger justifiable rate increases.
- As future premiums shrink in later years, the formula would support an excessive rate increase. But this would be the case with any formula.

TDI | Texas Method strengths

- Enhances the ability to maintain the marginal premium as the life of the block progresses if it's used when the first policy is sold.
- Identifies when a company relaxes contract reserve assumptions while requesting a rate increase by giving a negative result.
- Ensures that approved rate increases result in strengthened contract reserves over time instead of company profits.
- Prevents companies from recouping past losses.

TDI will continue to:

- Use the Texas Method.
- Incorporate other analysis (such as the lifetime loss ratio) to better ensure that revised premiums meet or exceed the marginal premium.

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TX Method
NAIC - Sample
Projected Future Experience
Demonstration of the Texas PPV Approach

Experience Year	Prior Assumptions		Current Assumptions	
	Earned	Incurred	Earned	Incurred
	Premium	Claims	Premium	Claims
2022	60,578,415	27,309,224	60,746,338	32,401,667
2023	59,201,682	30,604,632	59,503,152	36,370,288
2024	57,840,378	34,267,151	58,248,857	40,788,845
2025	56,468,810	38,377,302	56,963,775	45,756,001
2026	55,066,488	42,998,290	55,631,763	51,347,917
2027	53,612,835	48,132,102	54,235,921	57,563,708
2028	52,087,817	53,767,075	52,759,336	64,386,957
2029	50,486,521	59,793,399	51,196,524	71,678,697
2030	48,805,487	66,040,569	49,543,609	79,225,567
2031	47,043,003	72,429,665	47,798,642	86,929,908
2032	45,198,634	78,834,172	45,961,098	94,633,537
2033	43,273,368	85,069,287	44,032,064	102,108,126
2034	41,269,936	90,980,259	42,014,600	109,164,346
2035	39,193,335	96,359,875	39,914,250	115,549,715
2036	37,051,522	101,064,948	37,739,801	121,093,796
2037	34,855,076	105,030,734	35,502,867	125,723,359
2038	32,616,362	108,138,153	33,216,956	129,296,721
2039	30,349,444	110,305,395	30,897,491	131,719,995
2040	28,069,623	111,435,280	28,561,194	132,879,618
2041	25,792,540	111,372,656	26,225,080	132,588,781
2042	23,534,997	110,036,521	23,907,387	130,761,459
2043	21,315,292	107,474,806	21,627,857	127,464,413
2044	19,151,830	103,758,089	19,406,238	122,789,519
2045	17,062,569	98,961,762	17,261,736	116,832,678
2046	15,065,156	93,177,620	15,213,189	109,712,411
2047	13,175,944	86,545,605	13,277,973	101,609,452
2048	11,408,768	79,232,572	11,470,658	92,730,672
2049	9,775,192	71,488,073	9,803,285	83,384,391
2050	8,283,562	63,587,590	8,284,347	73,907,663
2051	6,938,305	55,686,738	6,918,059	64,480,935
2052	5,740,703	47,873,862	5,705,307	55,203,915
2053	4,689,397	40,364,278	4,644,231	46,334,006
2054	3,779,826	33,366,976	3,729,579	38,117,413
2055	3,004,557	27,030,301	2,953,089	30,722,249
2056	2,354,239	21,481,092	2,304,557	24,289,240
2057	1,817,780	16,781,831	1,772,031	18,879,762
2058	1,382,369	12,842,725	1,341,879	14,378,805
2059	1,034,787	9,628,369	1,000,169	10,731,746
2060	761,850	7,070,581	733,166	7,848,364
2061	551,130	5,078,493	528,051	5,615,157
2062	391,373	3,559,362	373,322	3,919,930
2063	272,714	2,435,533	258,982	2,671,268
2064	186,489	1,632,292	176,322	1,782,767
2065	125,071	1,074,926	117,747	1,168,961
2066	82,181	697,676	77,050	755,500
2067	52,830	448,502	49,336	483,760
2068	33,167	281,570	30,858	302,571
2069	20,321	172,516	18,840	184,737
2070	12,137	103,039	11,216	109,978
PV 2022+	719,763,774	1,327,992,853	728,218,955	1,578,668,871

4.00%

Cumulative Rate Increase to date:	0%
(0.58+0.85C)/(1+C) prem adjustment:	4,904,005
PPV Indicated Rate Increase%:	39.7%

TX Method
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2025	56,468,810	38,377,302	56,963,775	45,756,001
2026	55,066,488	42,998,290	55,631,763	51,347,917
...
2070	12,137	103,039	11,216	109,978
Total	1,070,865,813	2,574,183,470	1,083,689,778	3,048,381,269
PV 2022+	719,763,774	1,327,992,853	728,218,955	1,578,668,871
4.00%				

Cumulative Rate Increase to date: 0%
(0.58+0.85C)/(1+C) prem adjustment: 4,904,005

PPV Indicated Rate Increase%:	39.7%
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Prior Assumptions	
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PVFP * Kfactor	\$417,462,989
Contract Reserves	\$910,529,864

Current Assumptions	
PVFB	\$1,578,668,871
PVFP *Kfactor	\$422,366,994
Contract Reserves	\$1,156,301,877