

The 2023 Waiver Reserve Table

MICHAEL KROHN, FSA, CERA, MAAA ; PATRICK WALLNER, FSA, MAAA

JUNE 9 | 2023

SOA Antitrust Compliance Guidelines

Active participation in the Society of Actuaries is an important aspect of membership. While the positive contributions of professional societies and associations are well-recognized and encouraged, association activities are vulnerable to close antitrust scrutiny. By their very nature, associations bring together industry competitors and other market participants. The United States antitrust laws aim to protect consumers by preserving the free economy and prohibiting anti-competitive business practices; they promote competition. There are both state and federal antitrust laws, although state antitrust laws closely follow federal law. The Sherman Act, is the primary U.S. antitrust law pertaining to association activities. The Sherman Act prohibits every contract, combination or conspiracy that places an unreasonable restraint on trade. There are, however, some activities that are illegal under all circumstances, such as price fixing, market allocation and collusive bidding.

There is no safe harbor under the antitrust law for professional association activities. Therefore, association meeting participants should refrain from discussing any activity that could potentially be construed as having an anti-competitive effect. Discussions relating to product or service pricing, market allocations, membership restrictions, product standardization or other conditions on trade could arguably be perceived as a restraint on trade and may expose the SOA and its members to antitrust enforcement procedures.

While participating in all SOA in person meetings, webinars, teleconferences or side discussions, you should avoid discussing competitively sensitive information with competitors and follow these guidelines:

- **Do not** discuss prices for services or products or anything else that might affect prices
- **Do not** discuss what you or other entities plan to do in a particular geographic or product markets or with particular customers.
- **Do not** speak on behalf of the SOA or any of its committees unless specifically authorized to do so.
- **Do** leave a meeting where any anticompetitive pricing or market allocation discussion occurs.
- **Do** alert SOA staff and/or legal counsel to any concerning discussions
- **Do** consult with legal counsel before raising any matter or making a statement that may involve competitively sensitive information.

Adherence to these guidelines involves not only avoidance of antitrust violations, but avoidance of behavior which might be so construed. These guidelines only provide an overview of prohibited activities. SOA legal counsel reviews meeting agenda and materials as deemed appropriate and any discussion that departs from the formal agenda should be scrutinized carefully. Antitrust compliance is everyone's responsibility; however, please seek legal counsel if you have any questions or concerns.

Presentation Disclaimer

Presentations are intended for educational purposes only and do not replace independent professional judgment. Statements of fact and opinions expressed are those of the participants individually and, unless expressly stated to the contrary, are not the opinion or position of the Society of Actuaries, its cosponsors or its committees. The Society of Actuaries does not endorse or approve, and assumes no responsibility for, the content, accuracy or completeness of the information presented. Attendees should note that the sessions are audio-recorded and may be published in various media, including print, audio and video formats without further notice.

About the Academy



- The American Academy of Actuaries is a 19,500-member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 years, the Academy has assisted public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues.
- The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

For more information, please visit:

www.actuary.org

Information About This Webinar

- The presenters' statements and opinions are their own and do not necessarily represent the official statements or opinions of the Actuarial Board for Counseling and Discipline (ABCD), Actuarial Standards Board (ASB), any boards or committees of the American Academy of Actuaries, or any other actuarial organization, nor do they necessarily express the opinions of their employers.
- The Academy operates in compliance with the requirements of applicable law, including federal antitrust laws. The Academy's antitrust policy is available online at <https://www.actuary.org/content/academy-antitrust-policy>.
- Academy members and other individuals who serve as members or interested parties of any of its boards, councils, committees, etc., are required to annually acknowledge the Academy's Conflict of Interest Policy, available online at <https://www.actuary.org/content/conflict-interest-policy-1>.
- This program, including remarks made by attendees, may be recorded and published.

AGENDA

- The 2023 Table Development: Objectives, Approach, and Application
- Analysis of Change in Expectations vs. 2005
- Illustrative Reserve Comparisons
- Updates to NAIC *Actuarial Guideline XLIV* (AG 44)

Acknowledgments

- The Society of Actuaries Research Institute (SOARI), specifically:
 - Patrick Nolan
 - Pete Miller
 - Erika Schulty
 - Cindy MacDonald
- The Group Life Waiver Valuation Table Work Group:
 - Chairperson: John Murphy
 - Jeremy Fleischer
 - Michael Krohn
 - Stephen Rulis
 - Patrick Wallner
- Special Thanks
 - Susan Sames
 - Matthew Piccolo
 - Jerry Holman
 - John Kaspar
 - Matthew Williams

2023 Table Development

Objectives

1. Incorporate more recent Group Life Waiver experience, as documented in the 2019 Experience report,* into an industry table to be used for Statutory Valuation.**
2. Evaluate and revise margins from the 2005 Table, as appropriate.
3. Assess additional dimensions to add to 2005 Table structure.

* <https://www.soa.org/resources/experience-studies/2019/group-life-waiver/>

** The final 2023 Tables are located here: <https://content.naic.org/sites/default/files/actuary-acadamy-soari-glwp-table-rates.xlsx>

Data

- 2006–2015 study years were selected as most recent and relevant.
 - Consistent with other industry table development experience period length: Individual Disability (IDI), and Long Term Disability (LTD)
 - 3x the amount of data used to develop the 2005 Table.
- Data was aggregated by 14 variables of interest:
 - Claim Characteristics: Disabled Age, Duration, Attained Age, Sex, Diagnosis, Face amount band,
 - Policy Characteristics: Benefit Period, Elimination Period, Definition of Disability, LTD status, Own Occupation Period
 - Other: Calendar year, Carrier size, Case size

Process

- **2019:**
 - Review and scrub experience data
 - Analyzed credibility and Safe Harbor considerations
 - Propose approaches for table modeling/graduation
- **Spring 2020:** Can't quite put my finger on it....
- **Late 2020:**
 - After reviewing table structure proposals, decided to keep 2005 Table structure (select/ultimate), with additional dimensions to be included as durational modifier tables.
- **2021:** Worked to finalize table structure and rates with new diagnosis dimension
 - Many thanks to Jerry Holman who did robust regression modeling and table rate creation!
- **2022:** Finalized AG44 updates and margin recommendations
 - May–December—Approval process with the National Association of Insurance Commissioners (NAIC) Health Actuarial (B) Task Force (HATF)



Enhancement & Application

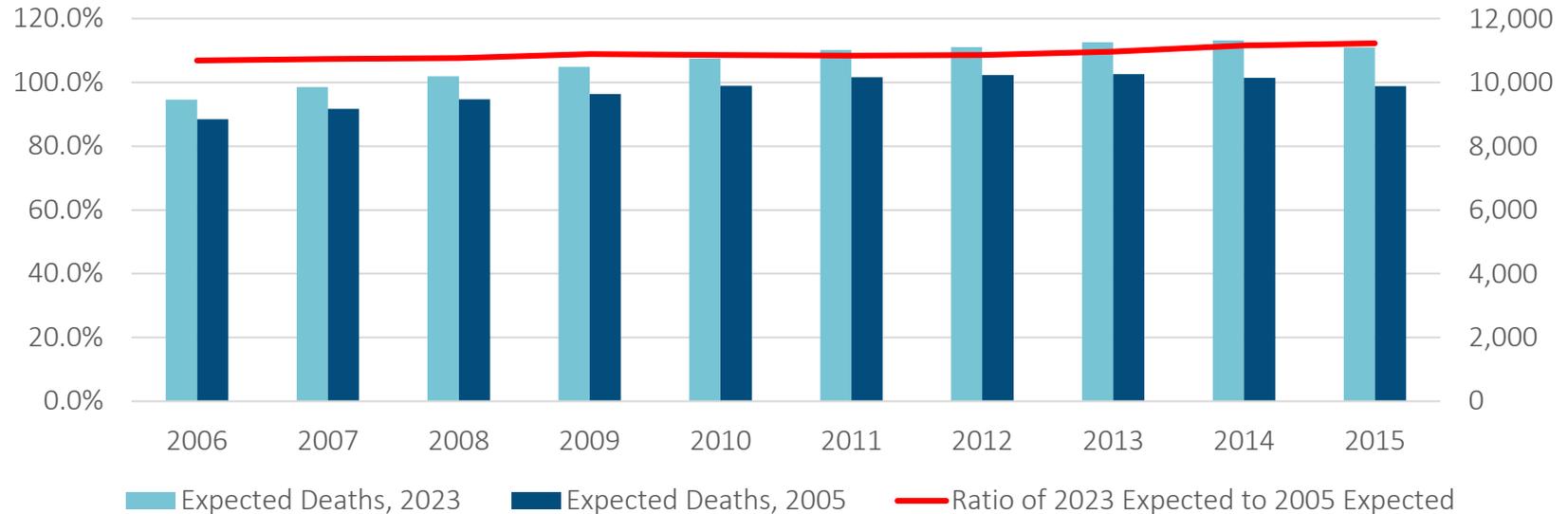
- Death experience re-sloped (lower mortality than 2005 at younger ages)
- Recovery experience reflects changes in industry claim management (More than double the 2005 Table expectations)
- Diagnosis/duration modifier tables added, with separate diagnosis groups assigned for death and recovery
 - Example: Cancer has highest death rates, but “average” recovery rates
 - Unlike IDI and LTD, where a termination is a termination... Waiver is different!
- Refined own-company experience blending by duration with reduced prescribed margins (15% for both mortality and recovery)
- Applies to all incurred waiver claims in 2023 and beyond for Statutory Valuation.
 - Can do a one-time election to use the 2023 Table for all claim incurrals.

2023 Table: Analysis of Changes in Expectations vs. 2005 Table

Mortality Comparison: Study Year

- Slight upward drift in expected mortality vs. 2005 table across study years

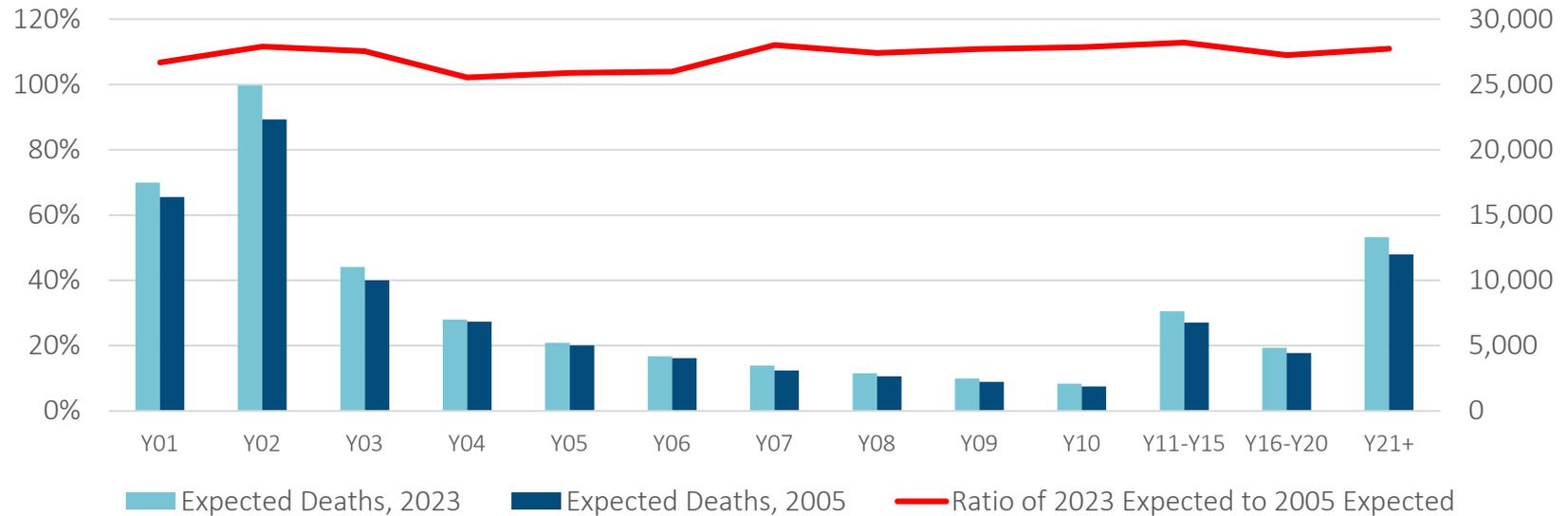
Expected Death Counts and Ratios by Study Year



Mortality Comparison: Duration

- Total expected mortality up 9% overall vs. 2005 Table
 - Range: +2% to + 13% depending on duration

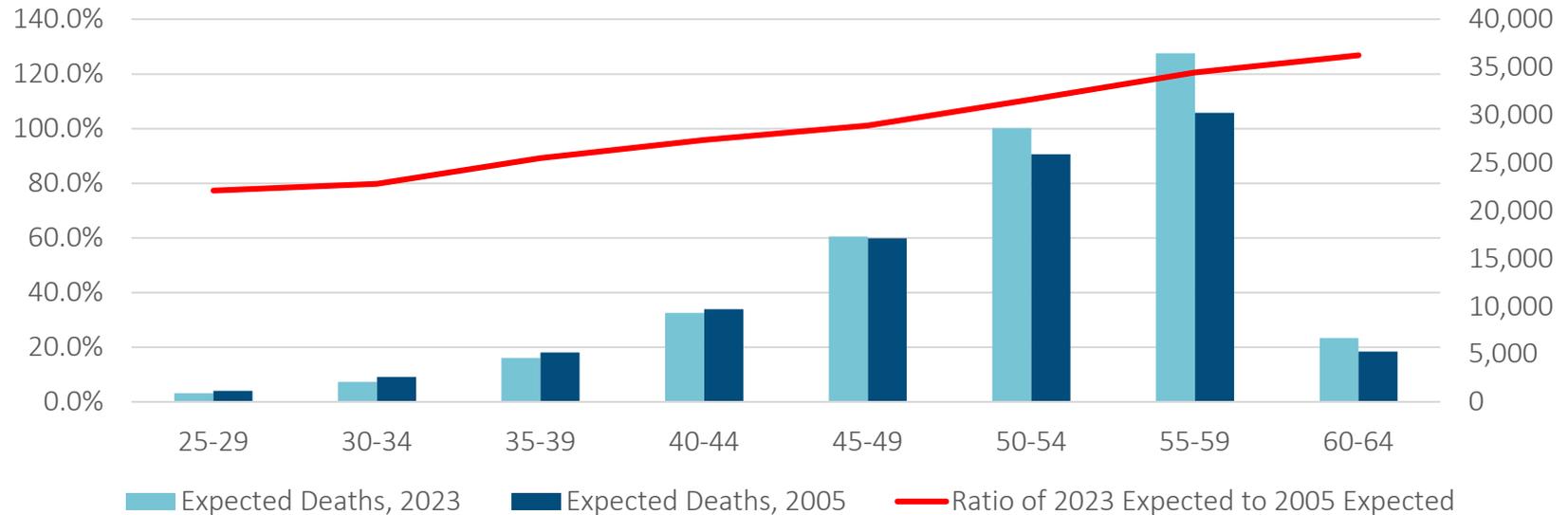
Expected Death Counts and Ratios by Year of Disability



Mortality Comparison: Disabled Age

- Expected mortality down for disability ages <45, Up for ages 45+

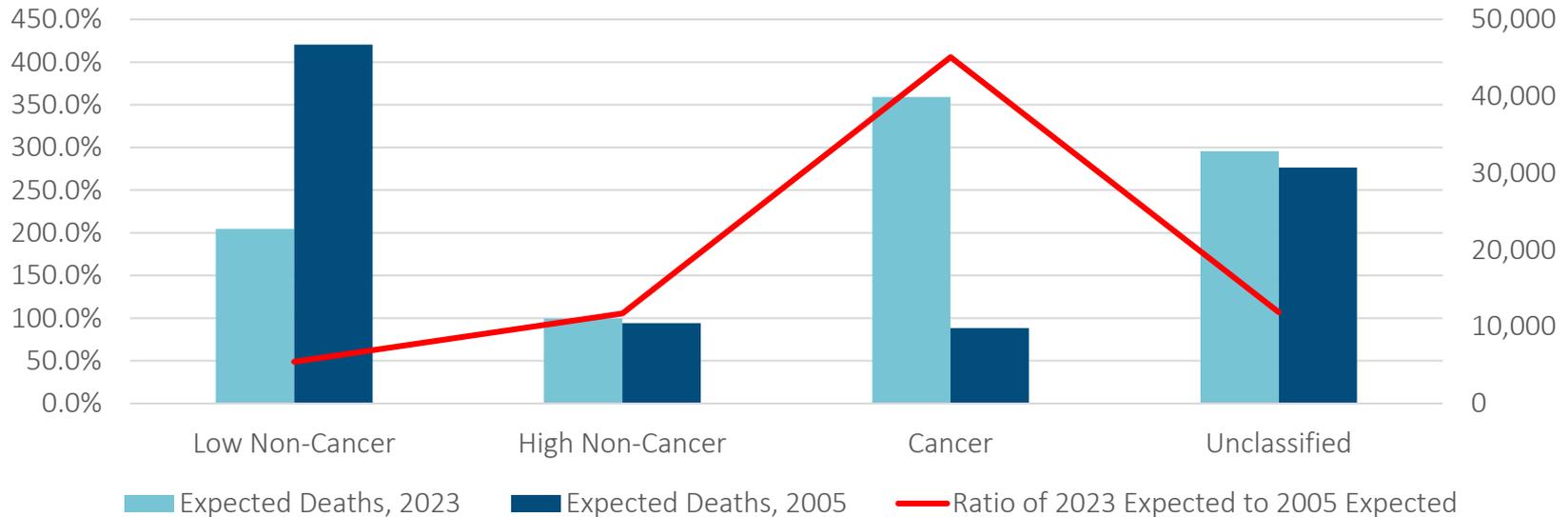
Expected Death Counts and Ratios by Disability Age Group



Mortality Comparison: Diagnosis

- Cancer expected mortality 400% of 2005 Table
 - High Non-Cancer 100% of 2005 Table; Low Non-Cancer = 50% of 2005 Table

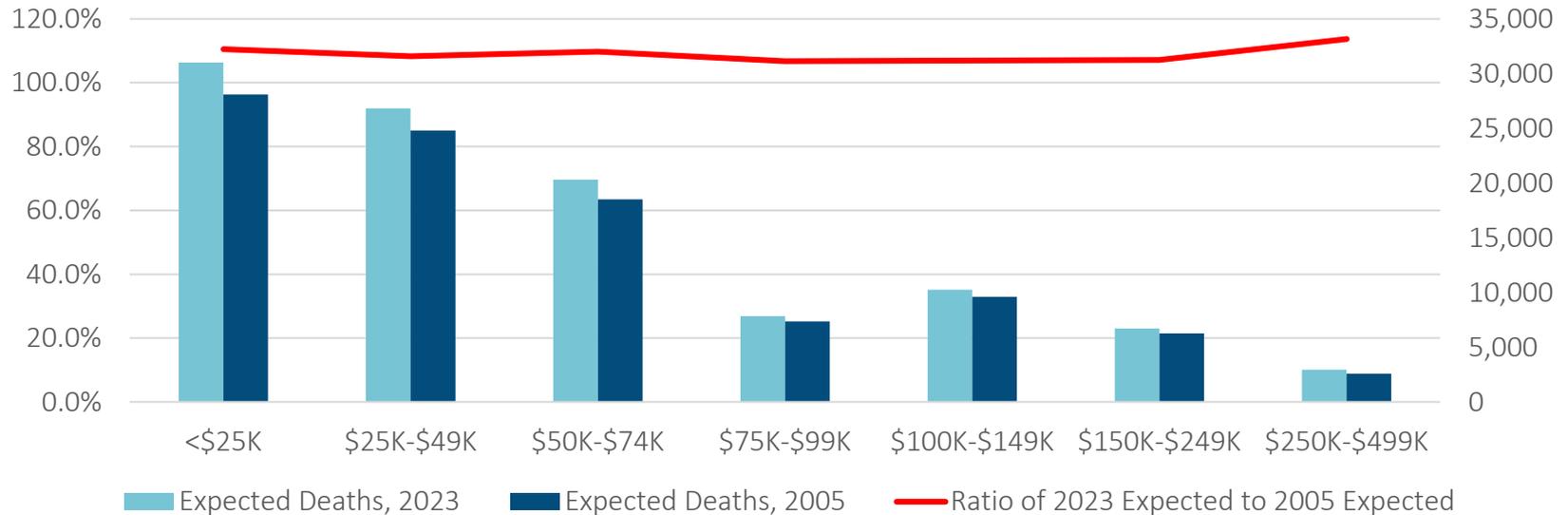
Expected Death Counts and Ratios by Diagnosis Group



Mortality Comparison: Face Amount

- Consistent change in mortality expectations vs. 2005 Table
 - *Not a 2023 Table dimension, but a consideration for the next table*

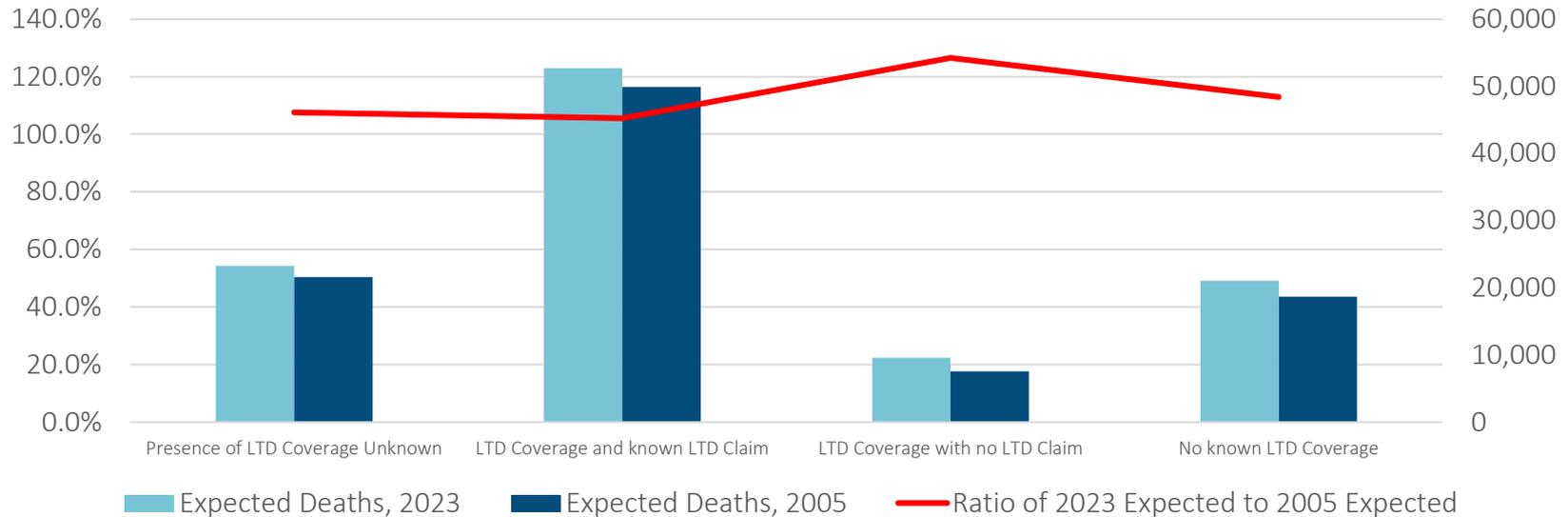
Expected Death Counts and Ratios by Initial Face Amount



Mortality Comparison: LTD Status

- Some variation in mortality expectation change by LTD coverage status
 - *Not a 2023 Table dimension, but a consideration for the next table*

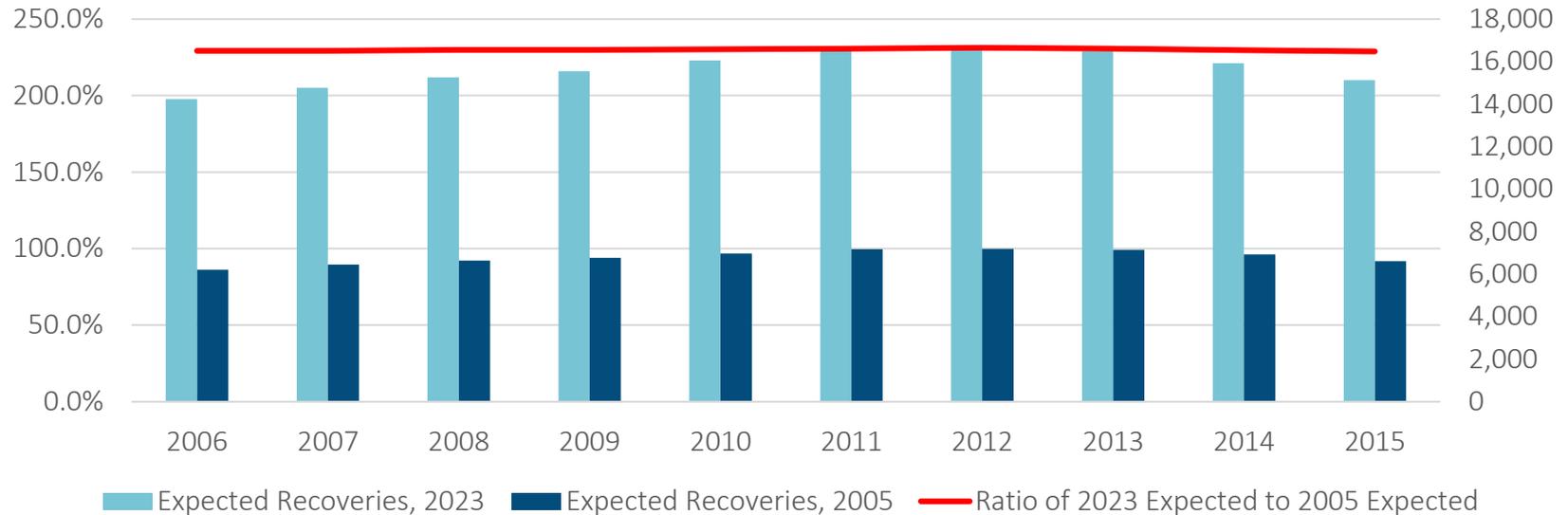
Expected Death Counts and Ratios by LTD Coverage Status



Recovery Comparison: Study Year

- Relatively constant % increase in recoveries vs. 2005 Table across study years.

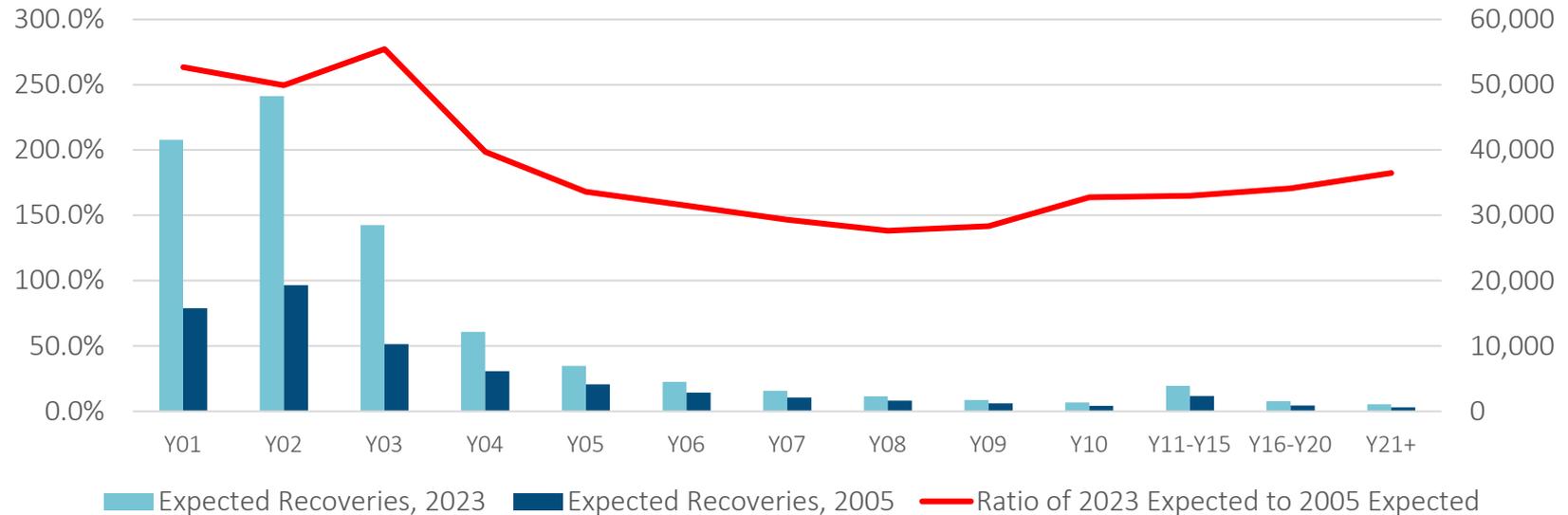
Expected Recovery Counts and Ratios by Study Year



Recovery Comparison: Duration

- Expected recoveries up significantly across all durations
 - 250%+ in early durations, ~150%+ in years 4+

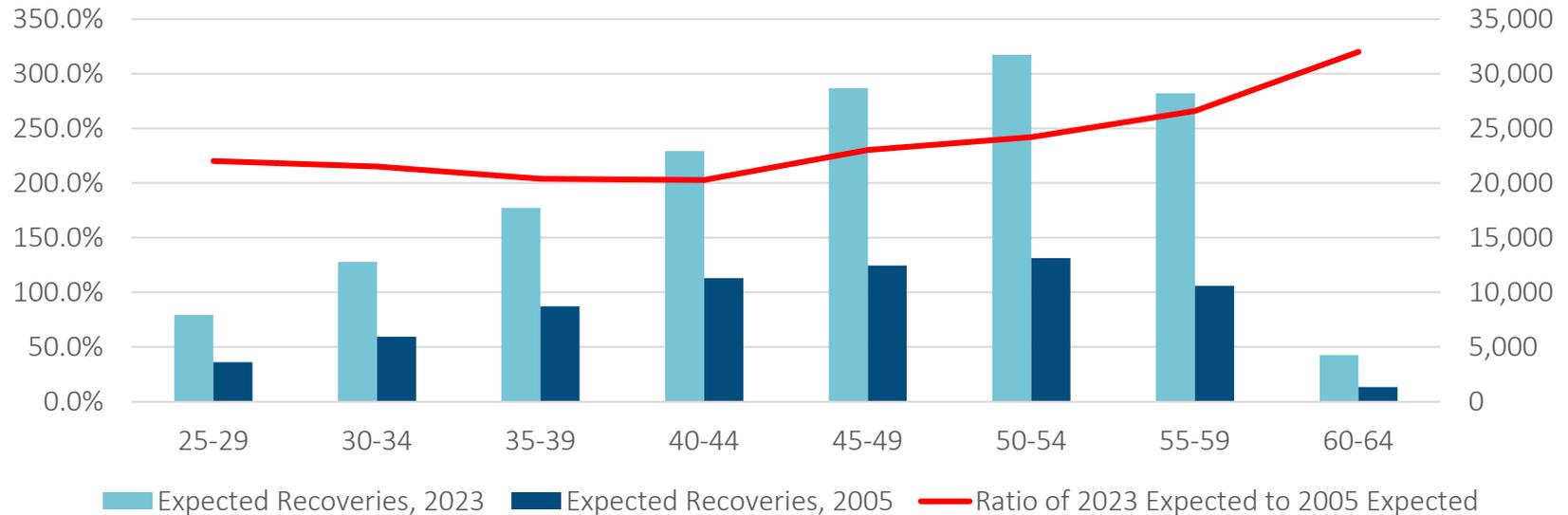
Expected Recovery Counts and Ratios by Year of Disability



Recovery Comparison: Disabled Age

- Expected recovery increases more significant for disability ages 50+

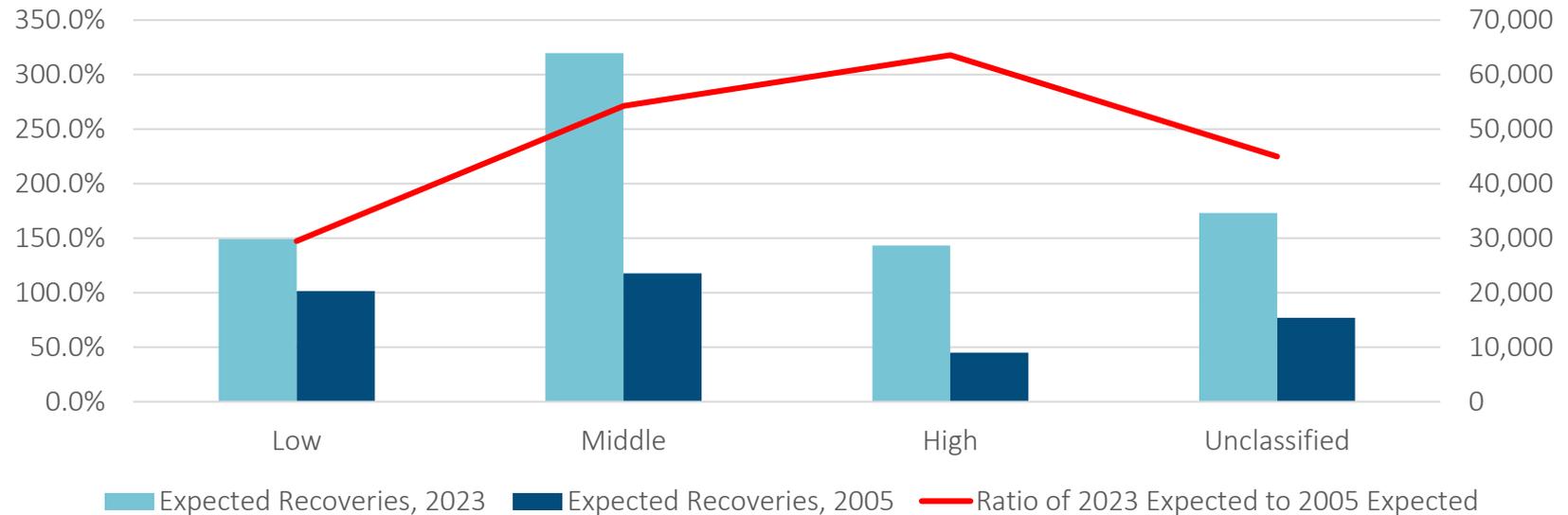
Expected Recovery Counts and Ratios by Disability Age Group



Recovery Comparison: Diagnosis

- High category expected recoveries are ~315% of 2005 Table
 - Middle and low categories are 270% and 150% of the 2005 Table, respectively

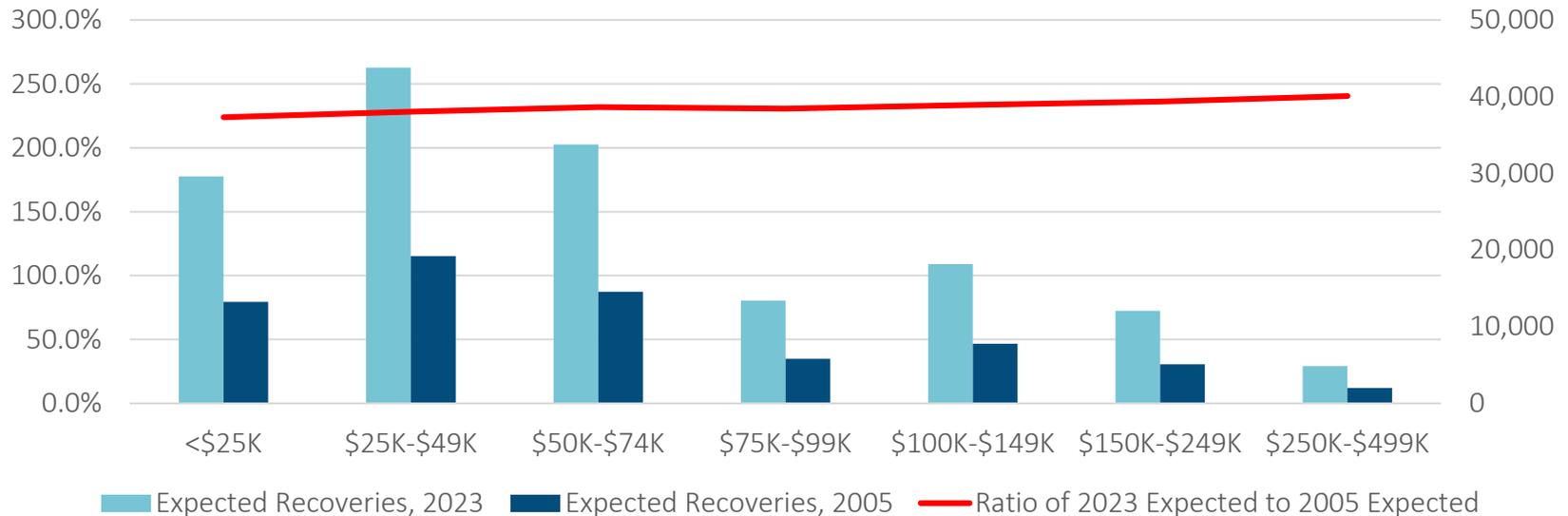
Expected Recovery Counts and Ratios by Diagnosis Group



Recovery Comparison: Face Amount

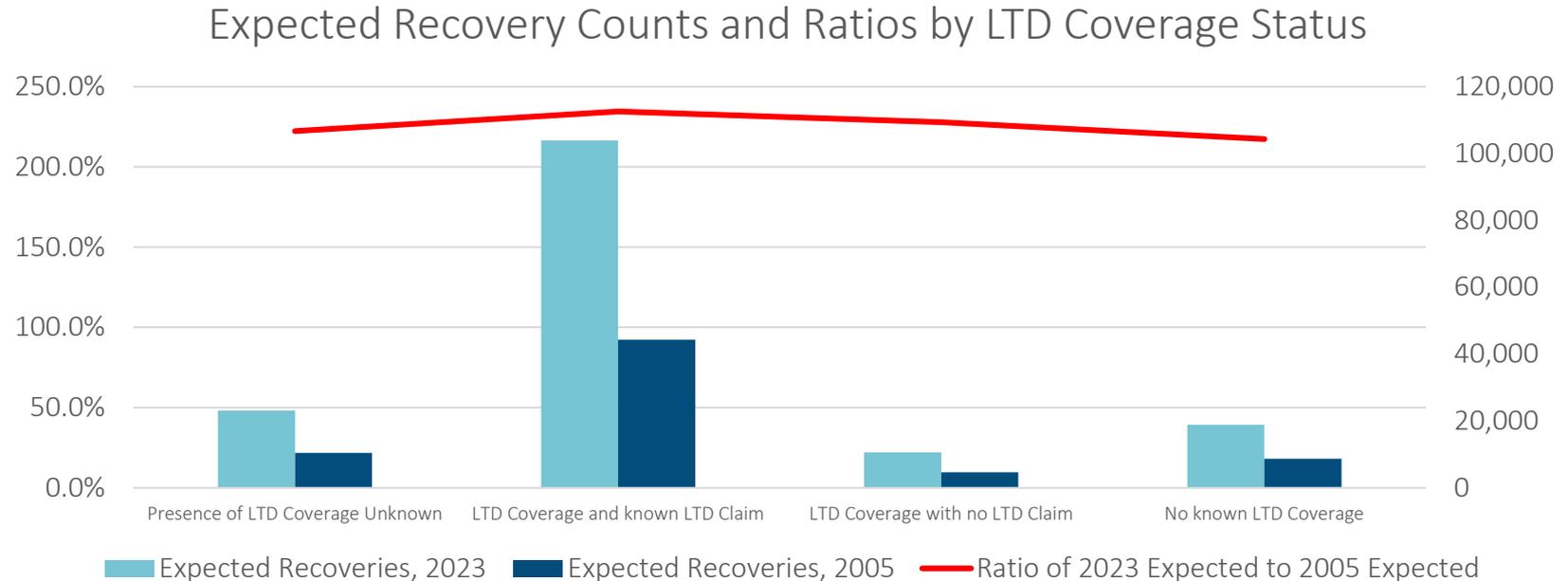
- Consistent change in recovery expectations vs. 2005 Table
 - *Not a 2023 Table dimension, but a consideration for the next table*

Expected Recovery Counts and Ratios by Initial Face Amount



Recovery Comparison: LTD Status

- Consistent recovery expectation change by LTD coverage status
 - *Not a 2023 Table dimension, but a consideration for the next table*

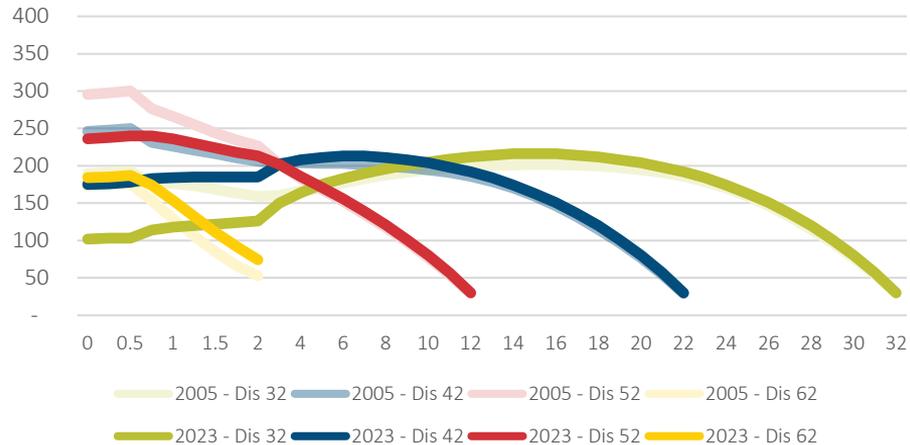


Reserve Comparisons: 2023 Table vs. 2005 Table

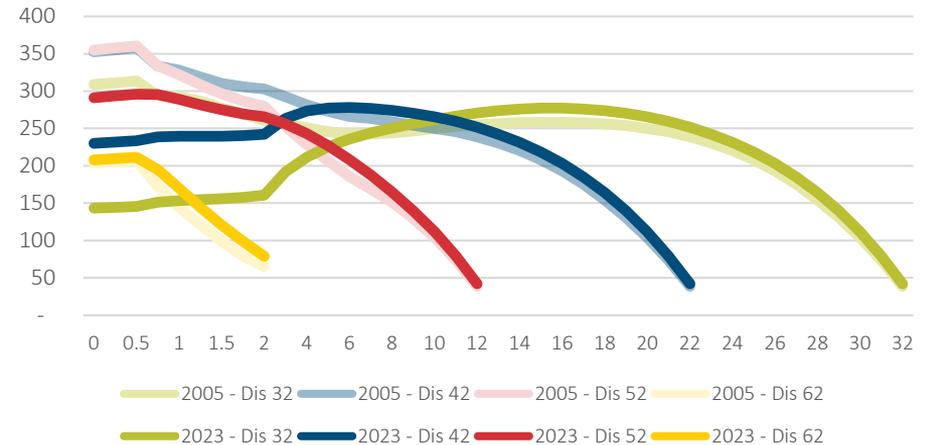
To Age 65 Benefit Period

- Initial reserve values, except disabled ages 60+, are lower for the 2023 Table than the 2005 Table.
 - ~50% lower for age 32, 30% lower for age 42, and 20% lower for age 52
 - The two tables' reserves are fairly consistent after year 3, due to lower recovery rate impact.

Female – Reserve per 1,000 by Duration Year



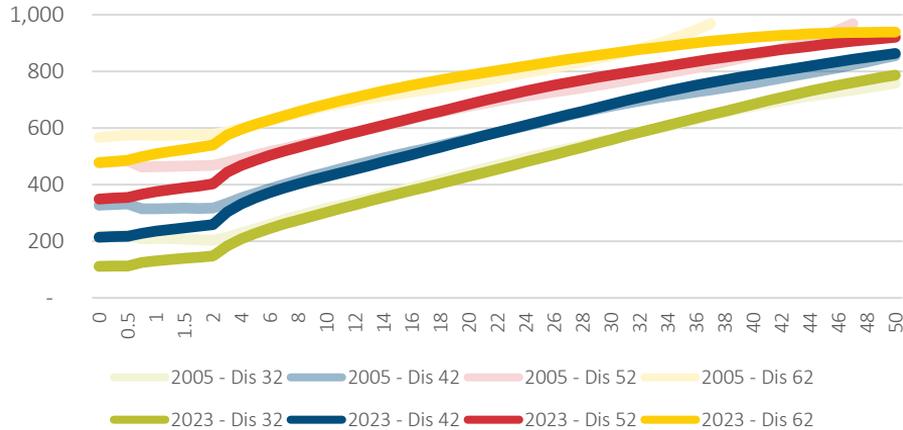
Male – Reserve per 1,000 by Duration Year



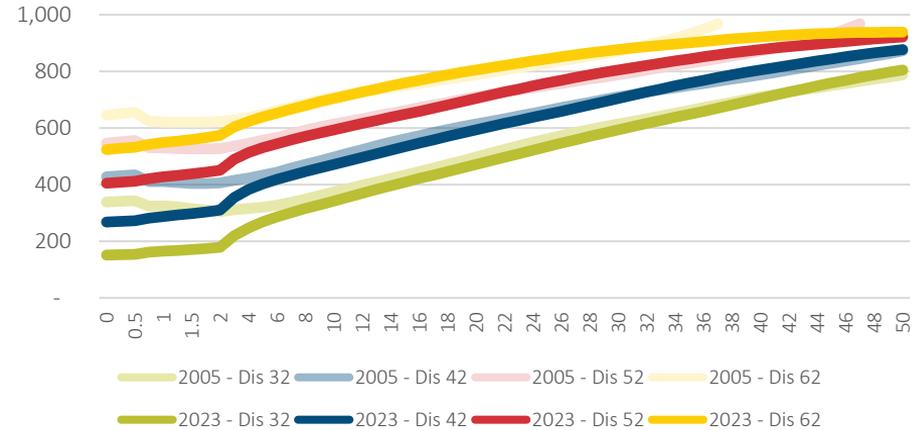
Lifetime Benefit Period

- Initial reserve values are lower for the 2023 Table than the 2005 Table.
 - ~50% lower for age 32, 35% lower for age 42, 25% lower for age 52, 15% lower for age 62
 - Age 62 result is driven by higher recovery rates in the first several years of duration

Female – Reserve per 1,000 by Duration Year



Male – Reserve per 1,000 by Duration Year



Age 62 Aside: Survivorship Comparisons (1)

- The high recovery rates in the 2023 Table outweigh the elevated mortality rates for the lifetime liability projection, compared to the 2005 Table.

Female - To Age 65

Duration	2023 Survivorship	2023 Tabulated Deaths (discounted)	2005 Survivorship	2005 Tabulated Deaths (discounted)
0.5	100%	0.03	100%	0.03
0.75	93%	0.03	96%	0.03
1	86%	0.03	91%	0.03
1.25	80%	0.02	87%	0.02
1.5	75%	0.02	84%	0.02
1.75	71%	0.02	82%	0.01
2	67%	0.05	80%	0.04
3	0%	0.03	0%	0.03
Total		0.22		0.21

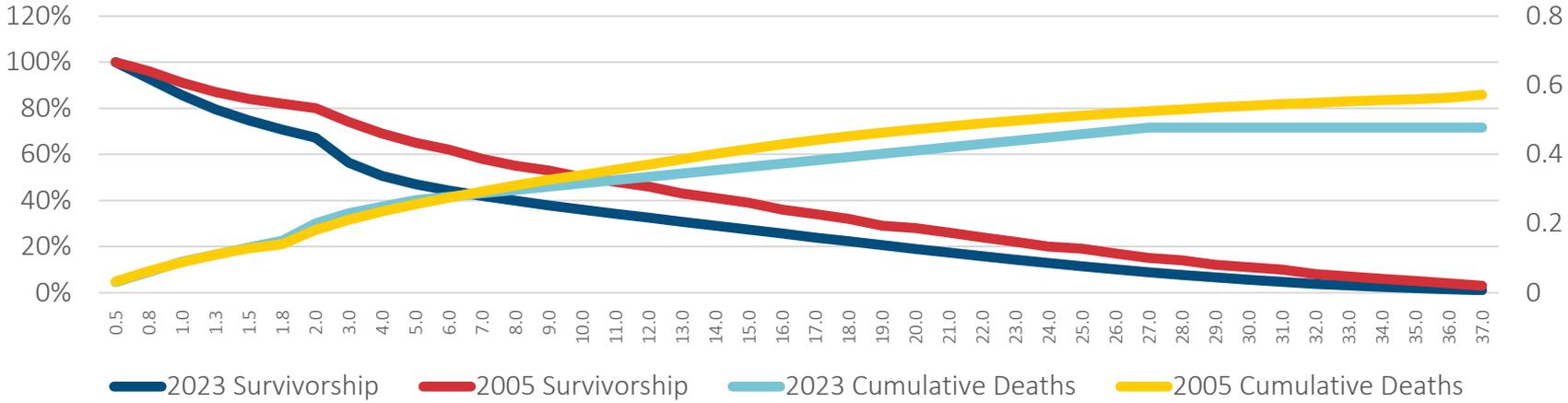
Female - Lifetime

Duration	2023 Survivorship	2023 Tabulated Deaths (discounted)	2005 Survivorship	2005 Tabulated Deaths (discounted)
0.5	100%	0.03	100%	0.03
0.75	93%	0.03	96%	0.03
1	86%	0.03	91%	0.03
1.25	80%	0.02	87%	0.02
...		0.20		0.24
10	36%	0.01	50%	0.02
...		0.15		0.20
37	0%	0.00	3%	0.01
Total		0.48		0.57

Age 62 Aside: Survivorship Comparisons (2)

- The high recovery rates in the 2023 Table outweigh the elevated mortality rates for the lifetime liability projection, compared to the 2055 Table.

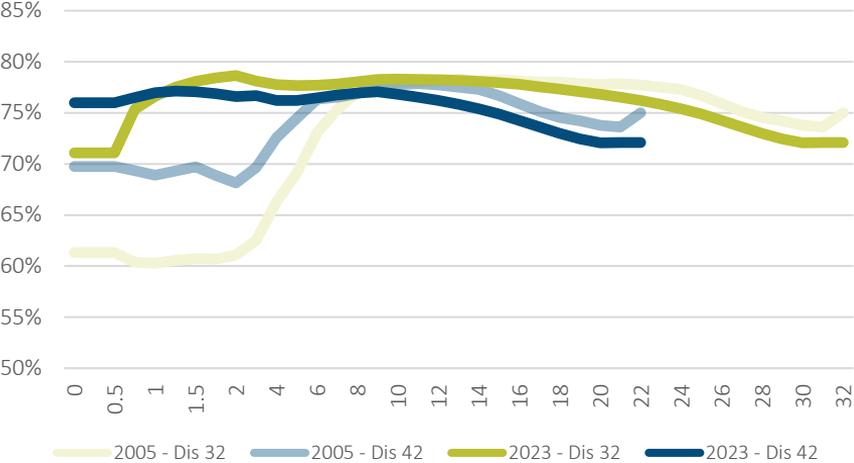
Female – Disabled 62 – Lifetime Benefit – by Duration year



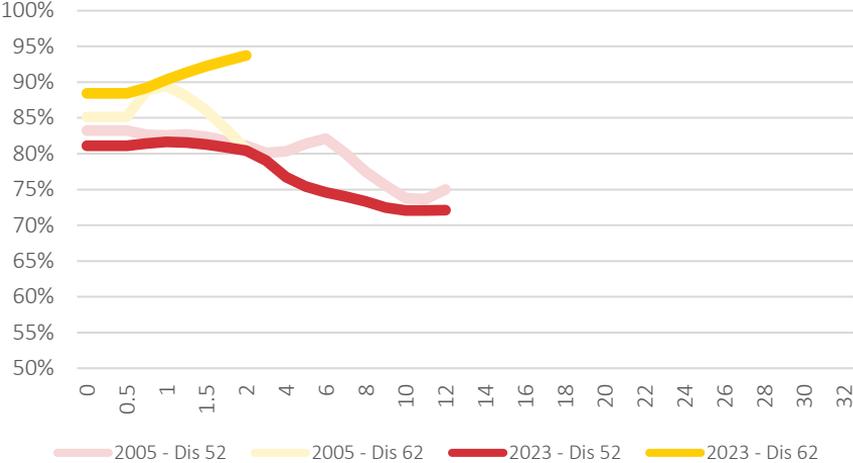
Comparison by Sex

- There is a slightly smaller gap between female and male initial reserve values in the 2023 Table, except for age 62.

Female vs. Male Reserve values – To age 65



Female vs. Male Reserve values – To age 65



Diagnosis Group Comparisons (1)

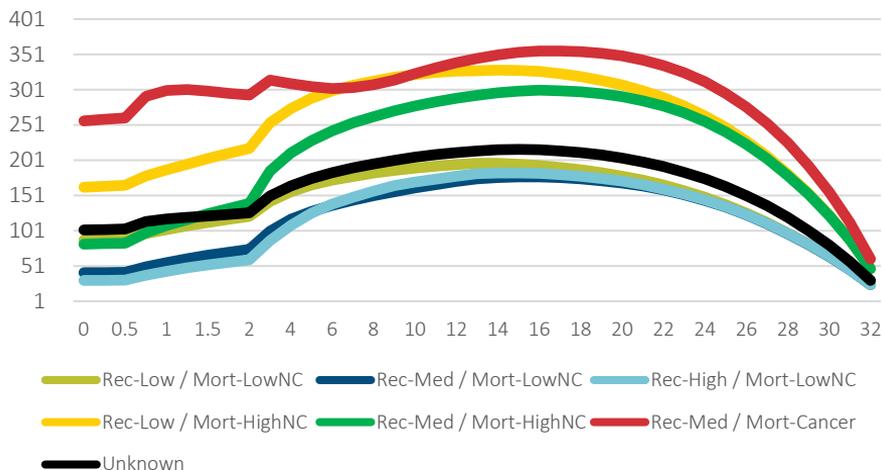
- An example of a diagnosis category and its respective recovery and mortality grouping, for all 7 unique combinations, are provided below.

Diagnosis Category	Recovery Grouping	Mortality Grouping
Mental & Nervous	High	Low Non-Cancer
Back	Medium	Low Non-Cancer
Circulatory	Low	Low Non-Cancer
Digestive	Medium	High Non-Cancer
Diabetes	Low	High Non-Cancer
Cancer	Medium	Cancer
Invalid	Unknown	Unknown

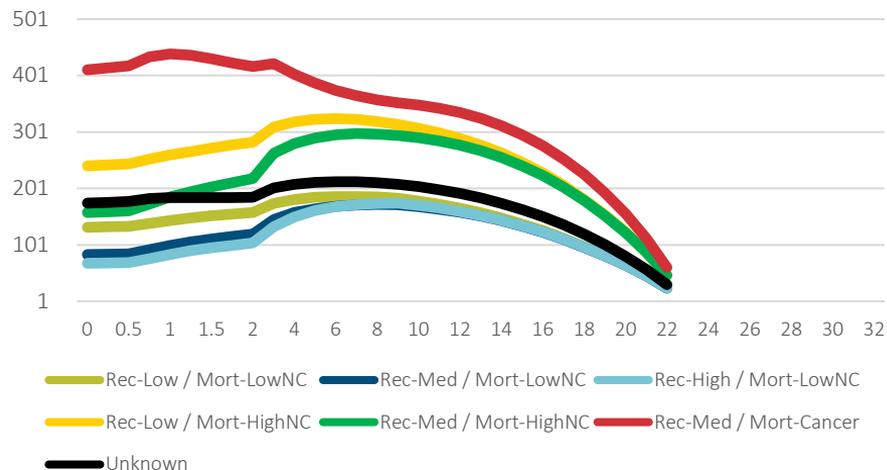
Diagnosis Group Comparisons (2)

- Cancer claim reserves have a range of 2X-8X of the lowest reserve group (e.g. mental nervous) for disabled age 32; 2X-6X for disabled age 42.

Female – Disabled Age 32 – To Age 65



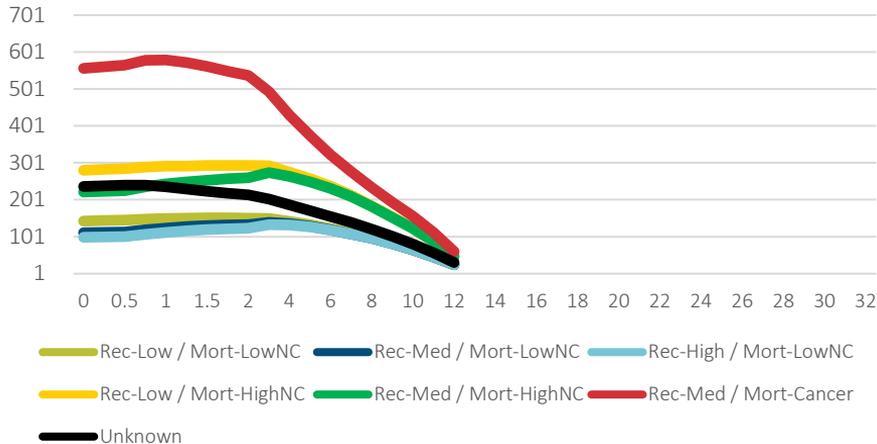
Female – Disabled Age 42 – To Age 65



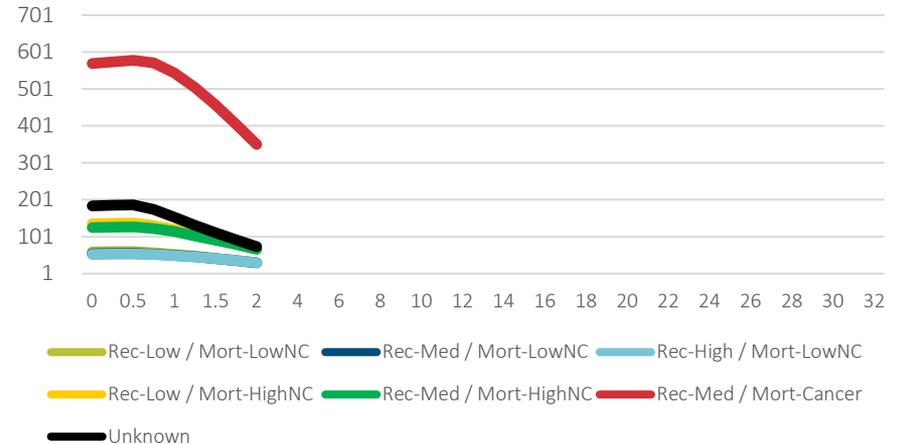
Diagnosis Group Comparisons (3)

- Cancer claim reserves have a range of 5.5X to 2.5X of the lowest reserve group (e.g. mental nervous) for disabled age 52; 10X for disabled age 62.

Female – Disabled Age 52 – To Age 65



Female – Disabled Age 62 – To Age 65



NAIC AG 44 Updates

AG 44 Updates

Section	Previous AG 44	Revised AG 44
Section I (Background)	<ul style="list-style-type: none"> • Set minimum reserving standard • Recognize 2005 Tables • Rationale for a Disabled Life Reserve 	<ul style="list-style-type: none"> • Set minimum reserving standard • Recognize 2005 & 2023 Tables • Rationale for a Disabled Life Reserve • <i>Mentions Retrospective Provision Applying Section VI Procedure to Pre-2023 Disabilities at Insurer's Election.</i>
Section II (Scope)	Effective with 1/1/2009 Disabilities, Retrospective Application with Commissioner Approval	--->>> (same)
Section III (Definitions)	Defined 2005 Tables	Defines 2005 & 2023 Tables

AG 44 Updates

Section	Previous AG 44	Revised AG 44
Section IV		<ul style="list-style-type: none"> • Calculation • Valuation Interest Rates
Section IV (A)	<ul style="list-style-type: none"> • Calculation • Use of 2005 Tables • Valuation Interest Rates 	
Section IV (B)	<p>Recognition of Company Experience to Modify 2005 Tables</p> <ul style="list-style-type: none"> • IV(B)(3) Company-Specific Tables • IV(B)(4) Credibility-Weighting <ul style="list-style-type: none"> • Silent on Credibility Approach 	
Section V		2005 Tables and Procedures for Disabilities 1/1/2009-12/31/2022
Section VI		2023 Tables and Procedures for Disabilities 1/1/2023 +

AG 44 Updates

Section	Revised AG 44
Section V	<ul style="list-style-type: none">• Disabilities 1/1/2009-12/31/2022• This is the Old Section IV(B) 2005 Table, etc.• <i>But with a Retrospective Application Provision:</i><ul style="list-style-type: none">• <i>Can Apply Section VI to these Claims at Insurer's Option</i>• <i>Once Elected, these Claims Cannot Go Back to Section V</i>
Section VI	<ul style="list-style-type: none">• <i>Disabilities 1/1/2023 +</i>• <i>2023 Tables with Company Experience Recognition Provisions Modeled After GLTD AG 47</i>

AG 44 Updates

Sub-Section	Guideline Topic
Section VI (B) <ul style="list-style-type: none">Algorithm for Company Experience Recognition	<ul style="list-style-type: none">Credibility WeightingClaim Duration Groups for Credibility WeightingCredibility LevelsExperience MeasurementMarginsMortality Floor
Section VI (C) <ul style="list-style-type: none">List of Considerations	<ul style="list-style-type: none">The Actuary May Take These into Account when Measuring Company Experience and Setting Assumptions According to Section VI(B)
Section VI (D) <ul style="list-style-type: none">Small Company Exemption	<ul style="list-style-type: none">Size of Claim BlockValuation Assumptions

AG 44 Updates

- Section VI(B): Algorithm for Company Experience Recognition

Item	Specific Guideline
Credibility Weighting T_M, T_R	<ul style="list-style-type: none">• Must Use Credibility-Weighting of Company Experience with 2023 Tables Except for Companies Under the Small Company Exemption• Blending Formula Also Includes a Term for Margin• Results<ul style="list-style-type: none">• T_M = Multiplier to 2023 Table, Mortality• T_R = Multiplier to 2023 Table, Recovery• Each Will Vary by Claim Duration Groups
Claim Duration Groups <ul style="list-style-type: none">• Set Credibility-Weighted Assumptions for each Duration Group	<ul style="list-style-type: none">• "Group 1" = Durations After Elimination Period Satisfaction Through 24 Months of Disability• "Group 2" = Months 25-60 of Disability• "Group 3" = Months 61+ of Disability• Durations During the Elimination Period:<ul style="list-style-type: none">• Actuary's Discretion or Follow the Procedures for Other Duration Groups Above.• Measure and Set Mortality and Recovery Separately

AG 44 Updates

- Section VI(B): Algorithm for Company Experience Recognition (continued)

Item	Specific Guideline
Credibility Levels Z_M, Z_R	<ul style="list-style-type: none"> • Credibility Levels for Mortality and for Recovery, by Duration Group, Are Each Specified by Formula and Key on the Expected Death (Recovery) Counts According to the 2023 Tables • Mortality: Full Credibility at 800 (*) Expected Deaths • Recovery: Full Credibility at 1,700 Expected Recoveries • Limited-Fluctuation Credibility Approach <ul style="list-style-type: none"> • (*) 829 Expected Deaths Would Achieve Full Credibility with the Objective of Having an 85% Probability that the Observed Outcome Does Not Differ from the Expected Outcome by More Than 5% • Full Credibility is Higher for Recoveries to Allow for Additional Variance Coming from Operational Changes, External Factors, etc. • Partial Credibility, (capped at 100%) <ul style="list-style-type: none"> • Mortality: Square Root of (Expected Death Count/800) • Recovery: Square Root of (Expected Death Count/1700)
Experience Measurement F_M, F_R	<ul style="list-style-type: none"> • Company Experience Mortality and Recovery A/Es Are Each Measured, by Duration Group, Typically on a Count Basis Unless Otherwise Justified

AG 44 Updates

- Section VI(B): Algorithm for Company Experience Recognition (continued)

Item	Specific Guideline
Margins M_M, M_R	<ul style="list-style-type: none"> Margins Are Applied to Company Experience, By Duration Group, According to a Formula (Mortality Rates Increase, Recovery Rates Decrease) and Key on Actual Death (Recovery) Counts Formula Minimum 5%, Maximum 15% Note the 2023 Tables Do Not Have Margin Margins Larger Than Indicated by the Formulas May Be Set If There Are Reserve Adequacy Issues
Mortality Floor	<ul style="list-style-type: none"> Mortality Floor After Margins = 75% of 2023 Table Mortality Rates

Actual Deaths	Margin	Actual Recoveries	Margin
< = 189	15.0%	< = 378	15.0%
500	10.4%	500	13.4%
1,000	8.2%	1,000	10.4%
2,000	6.7%	2,000	8.2%
4,000	5.6%	4,000	6.7%
6,806+	5.0%	10,000	6.3%
		13,613+	5.0%

AG 44 Updates

- Section VI(B): Mortality Example for a Given Duration Group

(1) Actual Death Counts	(2) Expected Death Counts	(3) $F_M = A/E$	(4) $Z_M = \text{Credibility}$	(5) $Z_M \times F_M$ + $1 - Z_M$	(6) $M_M = \text{Margin}$	(7) $T_M = [Z_M \times F_M$ + $1 - Z_M]$ $\times (1 + M_M)$
100	125	80.0%	0.40	92.1%	15.0%	105.9%
200	250	80.0%	0.56	88.8%	14.7%	101.8%
500	625	80.0%	0.88	82.3%	10.4%	90.9%
1000	1250	80.0%	1.00	80.0%	8.2%	86.6%
xx	xx	xx	xx	xx	xx	xx
150	125	120.0%	0.40	107.9%	15.0%	124.1%
300	250	120.0%	0.56	111.2%	12.5%	125.1%
750	625	120.0%	0.88	117.7%	9.0%	128.3%
1500	1250	120.0%	1.00	120.0%	7.3%	128.7%

AG 44 Updates

- Section VI(C): List of Considerations the Actuary May Take into Account

Item	Specific Guideline
Segmentation	<ul style="list-style-type: none">• Segmentation of Experience into Different Subgroups
Combination or Separation of Experience	<ul style="list-style-type: none">• Combine Experience Under Common Claim Management Structure<ul style="list-style-type: none">• (Statutory Companies, Assumed Reinsurance Blocks)• Separate Experience Under Distinct Claim Management Structures or with Different Risk Characteristics
Experience Periods and Lag Period	<ul style="list-style-type: none">• 5 Years of Experience if Possible,• More Years (Up to 10) if Relevant, < 5 Years if Some of the 5 Years are Irrelevant - *• Suitable Lag Period
A/E Weightings	<ul style="list-style-type: none">• Claim Count Based A/Es Unless Using a More Appropriate Weighting Under Section VI.B(ii)(b)(5)
Others	<ul style="list-style-type: none">• Use of Unclassified Diagnosis Rates if Information is Unreliable• Do Not Count as Actuals Claims Closed Due to: Settlement, Expiry, Any Other Contractual Limit• Use of Experience Otherwise Relevant in Actuary's Professional Judgment

** - for any duration band where there is compelling logic and when the company's experience to be used is at least 90% credible - or - the shorter experience period produces higher reserves than using five years*

AG 44 Updates

- Section VI(D): Small Company Exemption

Item	Specific Guideline
<ul style="list-style-type: none">• Size of Claim Block	<ul style="list-style-type: none">• < 50 open claims disabled \leq 2 years, and• < 200 open claims disabled > 2 years
<ul style="list-style-type: none">• Valuation Assumptions	<ul style="list-style-type: none">• Mortality = 115% of 2023 Table• Recovery = 85% of 2023 Table • When Meeting Claim Block Size Conditions Above

Questions?

Thank you!

For more information, please contact:

Erika Schulty, Research Administrator

SOA Research Institute
Email: eschulty@soa.org

Matthew Williams, JD, MA, Senior Policy Analyst, Health

American Academy of Actuaries

Email: williams@actuary.org



Please remember to complete the webcast
evaluation:

https://soa.qualtrics.com/jfe/form/SV_7Nx0eUB38ysfMkC



Upcoming Events

SOA Health Meeting

June 25-28

Seattle, WA

July 11-13

Virtual

2023 Underwriting Innovations Symposium

July 16-18

Rosemont, IL

SOA Life Meeting

August 20-23

New Orleans, LA

September 12-14

Virtual

View the full calendar at
[SOA.org/Calendar](https://www.soa.org/Calendar)