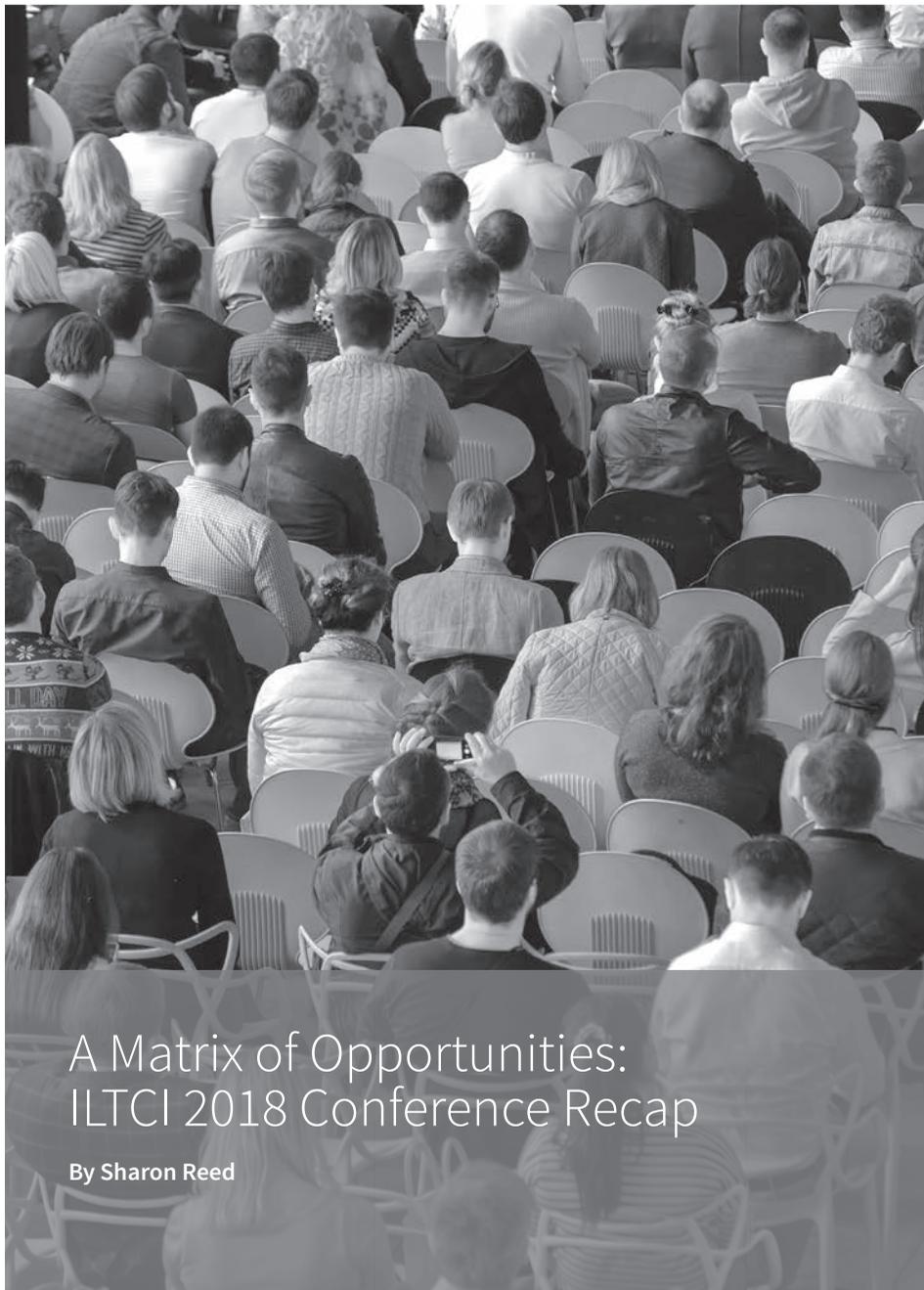


Long-Term Care News



**SOCIETY OF
ACTUARIES**

**LONG TERM CARE
INSURANCE
SECTION**



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Chairperson's Corner

By Robert Eaton

This has been an eventful year in the long-term care insurance (LTCI) industry. LTCI actuaries have always focused on assumptions, and those assumptions are increasingly placed under the microscope. This heightened attention comes from company management, regulators, and industry analysts, among others.

Assumptions form the basis for many important company actions: new product pricing and product development, re-pricing, reserve setting, etc. Some companies have the volume of data and resources that allow them to capture the trends in assumptions and the interactions between them. For instance, companies may assume that the trend in morbidity (which is related to policyholder healthiness) correlates with the trend in mortality, and they may see this in their own data. Other companies may not have the benefit of credible data, and have to rely on other industry sources to develop these assumptions.

An NAIC subgroup has reviewed LTCI company Actuarial Guideline 51 (AG51) submissions from year-end 2017. That subgroup is scheduled to release a public report the same month that this newsletter is published. The focus of that report will be on the assumptions that companies have used in determining asset adequacy.

... times are ripe for collaboration between actuaries of different disciplines.

In 2018 many investment firms and Wall Street analysts have published reports discussing companies with LTCI liabilities. My read of these reports is that they usually fail to look at LTCI risks with the same nuanced perspective that trained LTC actuaries do. Nevertheless the reports are the basis of investment decision-making. To that end, it is imperative for actuaries to communicate our assumptions and our methods coherently and clearly to each of our stakeholders.

I expect the SOA, with the heavy assist of LTC actuaries, to increase efforts to collect and analyze data to inform the LTCI



industry's critical actuarial assumptions. Additional information and analysis will help LTC actuaries to better understand what it is they're assuming when testing cash flows, pricing traditional and combination products, and estimating future morbidity.

These times are ripe for collaboration between actuaries of different disciplines. I think there are many lessons that we may learn from our friends in the SOA's Health Section about morbidity, e.g., we should be eager to learn how a Medicaid actuary understands nursing home stays for long-term care claimants. There are also emerging predictive analytical techniques that we need to learn to better understand interactions between assumptions, and the change in assumptions over time.

The SOA and this section have always focused on providing the education and practical tools necessary to help LTC actuaries succeed in their job, and I expect that focus to strengthen in the coming years. ■



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Editor's Corner

By Linda Chow

I have dedicated my career to private long-term care (LTC) insurance, providing services to clients since 2007 on a wide array of LTC topics including in-force management issues, new business development, LTC reform proposals and government funded LTC programs. Through these projects, I witnessed the ups and downs and the rapid evolution of the LTC industry. Outside of work, I had hands-on experience with caring for a close family member and handling her LTC coverage. LTC has become more than just a job for me, it's my personal aspiration. I am determined to help carriers with in-force blocks find remediation solutions and be part of the team that makes the future happen.

I want to thank Robert Eaton and Paul Colasanto for giving me the opportunity to co-edit the LTC section newsletter. It's been a fascinating experience reading various articles and learning how many ideas can be part of the LTC solutions of today and tomorrow.

In this newsletter, a wide variety of topics are included, with a common theme that these articles all cover industry hot topics, changes and innovations. There is a synopsis of the sessions held at the 2018 Intercompany Long-Term Care Insurance (ILTCI) Conference held in Las Vegas. This article provides a summary of session topics that cover leading industry practices, what's happening today and what's trending for tomorrow.

There are two articles that provide a deep dive into two actuarial technical subjects, including an analysis of the Texas Department of Insurance's prospective rate increases formula and the emerging predictive analytics techniques.

The industry recognizes the need and demand for new and sustainable LTC solutions and many people have devoted efforts to search for and create these solutions. In this issue, you will find two articles, one provides insight about risk mitigation frameworks for next generation products and the second introduces two new product ideas of the LTC Think Tank.

One of the operational challenges that LTC carriers are facing is to retain dedicated LTC talent. In coming issues of *Long-Term Care News* we will feature articles from authors who are "New to LTC." First up, Wajahat Abdullah from New York Life shared his experience as a new entrant to the LTC family.



Lastly, there are two articles providing an overview of how the two latest macro policy changes, Tax Reform and Immigrations Reform will or may potentially affect the LTC industry and its caregiver communities.

Again, I want to thank all of the writers who have contributed to this edition of the newsletter. Your effort and ideas will help shape the future of the U.S. LTC insurance industry.

Our next submission deadline is at the beginning of September for the December 2018 issue. Please continue to share your great LTC related experience and ideas (work or personal). I look forward to seeing your articles in the next publication. ■



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Up Front with the SOA Staff Fellow

By Joe Wurzburger

If I were to rank underrated cities in the U.S., Nashville would be near the top. As someone who appreciates warm weather, good music, and barbeque, I'm one happy guy when I get to visit the Music City. So you should know that, as a long-term care professional, you have not one but two excellent opportunities to mix business with pleasure in Nashville over the next 12 months.

The 2018 SOA Annual Meeting & Exhibit takes place in Nashville on October 14–17. The SOA's Annual Meeting is the largest annual collection of actuaries in North America, and it never fails to disappoint. This year you can expect to find several sessions dedicated to LTC topics, including:

- Long-Term Care for the Next Generation
- The Expansion of Combination Products
- Long-Term Care Rate Increase Alternatives for Policy Holders
- Deep Dive into LTC First Principles Modeling

This highly engaging and interactive event will improve your presentation skills.

In addition to compelling and relevant continuing education sessions, you should be sure to take advantage of networking opportunities. A reception on the first evening provides an opportunity to mingle with the roughly 2,000 attendees who span all practice areas including LTC. If you would prefer a more intimate, LTC-centric opportunity, then wake up early the next morning and join us for the LTC Section Hot Breakfast, where you can hear directly from section leaders and break bread (and guzzle coffee) with other like-minded long-term care professionals.

When you make your travel arrangements for the annual meeting, be sure to arrive early enough to participate in the Influence Training for Actuaries Seminar on Sunday, Oct. 14. While not focused specifically on long-term care insurance, this highly engaging and interactive event will improve your presentation

and communication skills, no matter how highly skilled you may already be. The seminar is facilitated by Andrew Sykes, an actuary-turned-professional-speaker who will simultaneously entertain and challenge you. The testimonials from last years' attendees speak for themselves; you will not be disappointed.

Here is one such testimonial:

After attending Andrew Sykes' excellent "Influencing for Actuaries" seminar at the SOA's 2017 Annual Meeting, I put into practice what I learned for an important presentation at an offsite managers' meeting. I burst right out with a great short and relevant story, gave three clear objectives, had folks briefly interact with each other a few times to keep everyone moving, delivered on the objectives, and practiced beforehand—it went so well. Without question, the reason it went well was solely due to what I learned at Andrew's Influencing for Actuaries seminar. -Bill Leslie, FSA

Space for the seminar is limited due to its hands-on interactive format, so be sure to register now if you haven't already.

Finally, if your 2018 travel plans are already complete, then turn your attention to 2019. Next year's Supplemental Health, DI & LTC Conference will also be in Nashville on August 5–7, 2019. This event is co-sponsored by the SOA, LIMRA, and LOMA and features continuing education for professionals who work with the following products: accident, critical illness, hospital indemnity, disability, and long-term care. Attendees will span across company functions—not just actuaries, but also folks who work in underwriting, marketing, claims, etc. With a dedicated long-term care track, you will be sure to find a relevant session in each time slot, not to mention engaging general session speakers and plenty of networking opportunities. This annual event is a bit of a hidden gem among continuing education opportunities, but if you're serious about expanding your long-term care knowledge, you won't want to miss it.

I hope to see you at one if not both of these upcoming events, as I certainly plan to be in attendance. My schedule will be packed as I aim to take advantage of all that each event has to offer. That said, let me know if you have a stellar restaurant recommendation—I've always got time for some Nashville BBQ. ■



Joe Wurzburger, FSA, MAAA, is staff fellow, health, at the Society of Actuaries. He can be reached at jwurzburger@soa.org.

A Matrix of Opportunities: ILTCI 2018 Conference Recap

By Sharon Reed

The 2018 Intercompany Long Term Care Insurance (ILTCI) Conference was held from March 18–21 at the Paris Hotel & Casino in Las Vegas. Conference Chair Sharon Reed from Penn Treaty and Co-Chair Peggy Hauser from PwC worked diligently with the Executive and Organizing committees to produce seven tracks of educational content.

Now, more than ever, interest is focused on private sector solutions to the growing issues pertaining to long-term care. Planning choices for consumers are growing at a rapid pace. Insurance companies are developing new innovative approaches to provide long-term care liquidity at various life stages and insurance agents and financial advisors are showing renewed interest in talking to consumers about their long-term care planning needs.

This year's conference brought together over 1000 attendees who had the opportunity to meet and learn with industry thought leaders, get in-depth insights, and information as they attended more than 40 breakout sessions. Networking with more than 60 exhibitors and sponsors provided solutions, insight and collaboration opportunities for attendees.

KEYNOTE SPEAKER VINH GIANG

Vinh Giang opened the conference with an engaging journey using stories, remarkable insights into human psychology and business, and the wonderful art of magic. Attendees saw close-up magic that challenged their perspective and encouraged them to remember that the greatest opportunity exists in what everyone else thinks is impossible. Those of us in the LTC industry can certainly relate. Vinh has devoted himself to understanding the ways in which people are fooled by illusions and by the tricks we play on ourselves. During his presentation, he demonstrated how this occurs.

A positive tone resonated from the conference opening session as Vinh discussed perspective, influence and beliefs. These presentations are available on YouTube to share with your team. Some attendees remarked that the power of influence was a

reminder that you are the direct reflection of the top 5 people you spend time with, meaning you get to choose who you become in the future by who you spend time with today.

ILTCI RECOGNITION AWARD

The Board of Directors of the ILTCI presented the inaugural Special Recognition Award at the opening session of the conference. Nominations were solicited by website, email and throughout the industry. The purpose of this award is to recognize those persons and organizations that have made significant, long term contributions in attaining the ILTCI vision to “create an environment for aging in America that includes thoughtful, informed planning that takes into account the most effective and efficient use of resources in addressing the risks and costs of long term care for all levels of American society.”

Multiple nominations were received from throughout the industry and nominees represented many different areas of long-term care. The board evaluated the nominees using this criteria: 1) Be engaged in the long-term care industry, as a long-term care service provider or financier, as a regulator or legislator involved in governance of long-term care or these entities, or as a research or policy expert in long-term care issues; and 2) Exhibit an extraordinary commitment to the industry through ingenuity, length of service and dedication.

It was truly my honor as the chairman of the board and chair of the ILTCI to award Marc Cohen with this special recognition.

CLOSING SESSION

The theme of this conference was “Change and Opportunity.” We are on the verge of transformative change in long-term care delivery driven by technology. Huge investments are being made in R&D focused on robotics and smart home technology to help close the expected caregiver gap and enable an unprecedented ability for people to age in place more independently. The closing session provided a glimpse into this future—which is not very far away—and explore its impact on our industry as it explored the implications of robotics and technology on the future of caregiving. Jeremy Pincus, director of research and strategy at IsoBar kicked off this session by explaining who the key players are in this field who see opportunity in filling the caregiver void—particularly the financial aspects motivating firms to invest in the development of robotics. He explained the Gartner Hype Cycle for Emerging Technology in robotic caregiving, how robotics are being used in long-term caregiving in other countries and when these innovations may reach our shores. Caregiving robots are already present in other countries like Japan who are challenged with a high percentage of seniors and a dearth of caregivers. Experts believe caregiving robots will perform many elder-care tasks here in the United States within the next decade. Dr. Marjorie Skubic, director, Center



for Eldercare and Rehabilitation Technology in the College of Engineering at the University of Missouri-Columbia demonstrated her team's work using passive sensor networks to monitor the physical and cognitive health of elders through gait analysis for early problem identification and mitigation. The session concluded with a panel discussion to briefly ponder the implications of robotics and technology on claims administration—with a particular emphasis on the benefit eligibility triggers, taking into consideration the need for “human assistance.” This is certainly a topic we've only just begun to scratch the surface of; there was much interest in continuing to explore this topic in the future.

ALZHEIMER'S ASSOCIATION POST-CONFERENCE WORKSHOP

Over 40 people attended the post-conference workshop on Wednesday that was delivered in two parts by the Alzheimer's Association. We were privileged to have two directors join us to present the latest research relating to Alzheimer's disease. Two sessions were presented:

Managing Alzheimer's Disease: Resources and Support for All Stages of the Disease. This topic included facts and figures on the financial impacts of Alzheimer's and dementia on the U.S., as well as the financial, physical and emotional impacts on families. The session explored the benefits of early detection, stages of the disease and best practices for families dealing with the disease. Excellent resources and programs available from the Alzheimer's Association to help individuals were reviewed by Ruth Kolb Drew, director of information and support services at the Alzheimer's Association.

Understanding the Latest in Alzheimer's Research. There is always something in the news about new research, treatments and prevention. James A. Hendrix, Ph.D., director, Global Science Initiatives at the Alzheimer's Association presented the latest in what is real and promising in the fight against Alzheimer's.

CONFERENCE WORKSHOPS

The following is a synopsis of the educational content and key learnings from the conference breakout sessions. These summaries were prepared by the 2018 ILTCI Organizing Committee.

Actuarial and Finance

The Actuarial and Finance track was pleased bring together experts in the industry to sponsor eight informative sessions covering closed block management, alternative solutions, and risks and trends. The sessions were well attended and very engaging.

Exploring the world of innovative solutions, “Don’t Hesitate to Innovate” brought to the table representatives from Milliman, PwC and Thrivent to update the audience on activities from the NAIC LTC Innovation Subgroup and some emerging innovative concepts, including opportunities and challenges of offering an LTC benefit as part of Medicare Supplement policies. A representative from VSee engaged the audience with her presentation on how telemedicine and technology can be incorporated into LTC in home health care.

Several sessions were designed to cover risk management and reporting. In “Preparing for Changes: LTC Actuary Views on Financial Reporting,” a panel from PwC, Prudential and John Hancock examined changes in financial reporting standards. The session particularly focused on how companies are planning for Targeted Improvements, IFRS 17 and updates to Actuarial Guidelines. “LTC Risk Management: Understanding Capital Needs and Reporting” covered ORSA requirements with a focus on risk measures, and considerations for LTC insurance as well as stress testing approaches, and economic capital techniques, and was presented by speakers from CNO, PwC and Milliman. As the title implies, “Mortality and Morbidity Trends and Other Assumption Topics” covered current trends in morbidity and mortality and how assumptions have changed over time within actuarial modeling. Representatives from RGA, Milliman and GE reviewed total mortality, active mortality and disabled mortality, and the major components of morbidity and morbidity trends.

In “Treatment of Past Losses for LTC Blocks,” panelists from John Hancock, Milliman and the State of Nebraska tackled the questions surrounding older LTC blocks, including defining past losses, the new model regulation’s handling of past losses, and how company or regulator delays should impact the level of rate increases. The session entitled “LTC Closed Blocks: Old Business, New Complexities” focused on various hot topics relevant to closed blocks. Presenters from Nassau Reinsurance, Milliman and the State of Nebraska discussed NAIC activity affecting closed LTC blocks, a consumer-friendly rate increase approach, and challenges and opportunities in LTC transactions.

On the Alternative Products side of the spectrum, “Combination Product Assumption Setting and Modeling Implications—Deep Dive” provided perspective into the combination product assumption setting and related modeling implications. The presenters from Milliman, Lincoln Financial, and Moody Analytics Hong Kong discussed experience

analysis and baseline assumption development, key assumption application considerations (including stochastic modeling as the industry moves to PBR), and the importance of robust actuarial models to validate the assumptions and offer more realistic sensitivity testing of potential financial impacts.

“Predictive Analytics” explored the bias-variance trade-off. Speakers from Genworth, BYU and Milliman covered the importance of bias-variance trade-off as a fundamental concept in data analytics, how various methods traverse the bias-variance trade-off, and provided some predictive analytics concepts. As well, the use of holdout data and cross validation were explored as ways to avoid over- or underfitting data. This session was complemented by a post-conference workshop on predictive analytics.

CLAIMS AND UNDERWRITING

Genetic Testing

In the first session for the track, “Genetic Testing: What it is and the Actuarial Impact”, industry experts provided insights regarding direct-to-consumer genetic testing. The presentation explored the capabilities of the increasingly available genetic tests that consumers are using to both explore their own genealogy and predisposition towards certain diseases. The presentation also highlighted the concerns that such information in the hands of consumers has caused insurers. Session participants had an opportunity to provide their thoughts and ideas with the industry experts along with providing their own stories from genetic tests that they had previously taken.

Rolling the Dice: Point/Counter-Point Debate on Claims Risk Areas

For the second year in a row, ILTCI attendees were treated to a dynamic discourse between experienced industry experts addressing critical issues currently facing LTC insurers, who are looking to create efficient processes while effectively managing risk. In the session, “Rolling the dice: Point/Counter-Point debate on claims risk areas,” attendees enjoyed an informative and stimulating debate between two skilled advocates for either side of challenging questions regarding eight different claims practices. During the debate, the panelists looked to address challenging topics including technology-enabled vs. paper invoicing processes, handling identified provider fraud, communicating denials to policyholders, requiring proof of payment, handling assignment of benefits, and claims practices vis-à-vis state-specific prompt pay requirements. The session audience also had a chance to weigh in and vote on which side of each question they felt yielded a better outcome. While the attendees’ votes predicted a clear industry preference in most cases, the experts were able to make clear, compelling and well-presented points on both sides—demonstrating why claims “best practices” are typically a blend of approaches designed to yield the best overall result.

Party On, Party Over ... Alcohol Use from Underwriting through Claim

This session was an in-depth look at the impact and risks associated with alcohol use and abuse, the implications that Alcohol Use Disorder has in underwriting the LTC risk and the claims experience resulting from underwriting this impairment. The session addressed updated definitions, statistics of alcohol usage in the senior population, theories about the development of Alcohol Use Disorder, risk factors involved, stages of the addictive cycle and a typical course of alcohol dependence. Discussion took place concerning the complications associated with Alcohol Use Disorder and how applicants with this disorder should be underwritten (including a list of “functional” disorders that could offer clues to the underwriter as to its severity). Illustrated by several case studies, the final portion of the presentation on claims concluded that there are very few claims to which Alcohol Use Disorder is attributed because alcohol use is rarely acknowledged as the mechanism for disability and dependency but heavy use could be a co-morbid factor in many debilitating disorders and likely contributes to dementia in many unrecognized cases.

Navigating the Winds of Change in Underwriting and Claims

In a panel discussion with live polling and active audience participation, “Navigating the Winds of Change in Underwriting and Claims,” industry experts explored various topics related to recruiting, employee engagement and workflow practices to drive efficiency and reduce expenses. Participants engaged in discussions regarding recruiting, engaging and motivating top talent and good employees. The use of unconventional workplace models and flexible work arrangements was explored. The session wrapped up with exploring critical skills needed in the workforce, productivity workflows and monitoring and the impacts to cost reduction and efficiency while maintaining focus on improved customer service.

Stump the Chump—Medical Directors Forum

This wildly popular session was well attended again this year. Dr. Wayne Heidenreich from Northwestern Mutual and Dr. Stephen Holland from LTCG led an interactive audience participation session on a variety of medical conditions and the mortality and morbidity risks for both claims and underwriting. The attendees had a chance to review a case study about anxiety and depression and the use of various classes of medications including benzodiazapines and hypnotics and risks associated with use. In addition, the impact of family history of dementia and memory issues as related to claim processing was discussed. The session wrapped up with a question and answer session on numerous other medical topics trending today.



MANAGEMENT AND OPERATIONS

The Management and Operations track featured six sessions focused on managing change in light of the technological and emerging trends in the industry. The overall mission of the track was to engage senior leaders in the long-term care insurance business and impart knowledge in the areas of strategy, technology and management fundamentals. Sessions were designed to appeal to a broad group of leadership including operations, legal, actuarial and finance.

The first session focused on strategy development and implementation. The session was structured to provide actionable insights for all audience participants whether they are a closed block insurer or a vendor new to the industry. The session focused on how to develop a competitive advantage, identifying the forces that shape competition, adjusting operating models to align with strategy and implementing a strategy once it is defined. Panelists provided real-life examples of how strategic initiatives are developed and how strategies must be



flexible to meet the changing dynamics of the industry and competitive landscape.

Given the nature of the LTC product, there have been some recent challenges in the industry, focused on maintaining policyholder benefits while navigating an uncertain financial future. Panelists in the second session walked audience members through the implications of insolvencies. Topics covered in the session included the interactions between regulator and carrier, relationships between state commissioners, guaranty associations and NOLHGA. The implications of a recent insolvency were also discussed; the panelists provided insights on the process, impacts to policyholders and the industry and the emergence of a new structure, LTC Re, to help manage the administrative aspects of insolvencies.

The third session focused on attracting and retaining top talent in the industry. Panelists representing four companies participated in one of the more dynamic sessions of the week. Each company represented was in a different stage of the product lifecycle which led to a diverse and engaging session. Topics covered in the session included: retaining top talent in an industry that has been in a state of flux, motivating employees with non-financial incentives and creating cultures that reward employees for their dedication. This management session shed light on one of the more important topics in the industry because there is a need to recruit, develop and retain talent in the industry.

A topic that has been prevalent in many industries—but has yet to make a large impact within LTC—is artificial intelligence. Leaders from PwC, Colab and TriPlus Services led a discussion that featured industry readiness and insight into how AI may play a factor. Panelists—while keen on the advantages of

AI—cautioned that the implementation of AI must be well thought out and must align with the overall objectives of the business. For those companies willing and ready to implement it, AI has many advantages including enhancing the customer experience, processing claims at a faster rate and providing companies faster insights into their business.

Keeping with the theme of advancing technology within the industry, panelists from Nationwide and Pypestream led a discussion on the changing landscape of the product and how to engage with future customers. The session began with a discussion on how the product is changing from a traditional standalone LTC policy to an asset based and combination product. Scenarios were presented to outline the benefits of each type of product and the target demographic. Once a solid demonstration of the types of products completed, a discussion focused on how to engage and deliver these products to a customer segment heavily reliant on social media and mobile apps. The discussion focused on how the legacy way of selling insurance is rapidly being taken over by an on-demand economy that encourages “frictionless” interaction and direct-to-consumer sales. While there are benefits for the customer, including a more personal experience and targeted products, there are also benefits to providers including streamlined payment process and the ability to mine data to enhance future products.

The final session built off one of the most talked about sessions at the 2017 ILTCI conference related to the future of care. Panelists in the “Robots are Coming: Now What?” session provided an update on the current view of robotic care and explained that challenges still remain with respect to the adoption of robotic care. It’s no secret that the Baby Boomer population is aging rapidly which is widening the gap between the number of people requiring care and the number of caregivers available. This gap, as explained by Dr. Jeremy Pincus of Isobar, can be filled using robots. Conceptually, robotic care fills the void, but challenges still remain as pointed out by the panelists. While the concept of robotic care is gaining traction as seen through the Gartner Hype Curve, there are operational and potential legal challenges with its implementation.

Whether attendees wished to learn about the basics of strategy, attracting and retaining talent or learning about the potential disruptions in the industry, the Management and Operations track delivered a diverse program at the 2018 ILTCI conference.

LEGAL, COMPLIANCE AND REGULATORY

Interstate Compact Update

Jeanne Daharsh, a Compact actuary, Tomasz Serbinowski, an actuary with the Utah Department of Insurance, Marie Roche, AVP at John Hancock, and Karen Schutter, a Compact ED, provided a general update on the Interstate Compact, as well

as LTCI-specific Compact issues. Generally, the Compact participants focused on the efficiencies offered by the Compact approval process over state-by-state approval, their efforts to make the submission and approval process as transparent as possible, and their desire to streamline the compact approval process to ensure its palatability within the marketplace. To those ends, the Compact is in the process of developing uniform standards that will be used in the approval process. The standards are being developed with input from the Legislative, Consumer Advisory, Industry Advisory, and Compact Product Standards Committees, as well as the insurance Compact member regulator and non-compacted states, members of the industry, and other interested parties. The development process is very similar to a state rulemaking review process. With respect to LTC products, the Compact presenters highlighted the Compact's ability to evaluate and approve true LTC products, as well as combination product filings, including life insurance products that offer LTC riders. Substantive amendments made to LTC-specific submission forms were discussed, as well as a change in the due date of the Annual/Triennial Rate Certification submissions to May 1. vs. Dec. 31. Additionally, changes have been made to the core standards and rate submissions to bring them in line with Model Regulation #641 and clarify other areas of confusion.

Claim Litigation

Sandy Jones of Drinker Biddle, Doug Morrissey of CNA and Amy Kline of the Saul Ewing Arnstein & Lehr LLP law firm presented on litigation issues in the long-term care insurance space that relate specifically to claims. The panel focused on the largest greater areas of issue (specifically (1) issues related to policy language [with a focus on the “continual v. continuous” conundrum]; (2) provider eligibility issues; (3) alternative care provisions; (4) benefit eligibility issues; and (5) fraud). The panel also touched upon emerging risks surrounding continuing care retirement communities, waiver of premium, and other policy language-related issues and concerns. For each larger subtopic, the panel's focus was on current litigation, updates to pending litigation, and a role-play scenario where the audience was asked to participate as either plaintiff or defendant to advise the “client” on what he or she would do. The panel's goal was also to provide real-life examples of difficult claims decisions that either led to litigation or could lead to litigation and assess, with the audience, what the best course of action would have been with regard to that claim.

Litigation over Rate Increases

Hosted by Steve Serfass of Drinker Biddle & Reath LLP and Kristen Weil and Kenneth Pfaehler of Dentons US LLP, this session focused specifically on LTC rate increase litigation—both historically and currently—and provided attendees with a full picture of the landscape and struggles facing LTC insurance carriers in the courtroom and beyond. Specifically,

and most interestingly, this session spent a great deal of time focusing on rate increase litigation that is currently pending in the court system around the U.S., including the recent matters Toulon, Newman, and DiRito. In doing so, the speakers were able to bring real-life experience to the audience as to what this litigation is like in the trenches of the courtroom and where, based on recent decisions, insurance carriers might face difficulties in the future. Separating rate increase litigation from general claims litigation proved beneficial, as the speakers had ample time to take questions and comments from a very inquisitive audience.

Liquidation and Guaranty Association Issues

Panelists for this very current and informative presentation included Mark Backe, vice president and insurance and operations counsel for Northwestern Mutual, Peter Gallanis, president of NOLGHA, James Kennedy of the Texas Department of Insurance, and Richard Bowman, associate general counsel for New York Life Insurance Company. In the wake of the insolvency of Penn Treaty/ANIC, other LTCI carriers were able to learn what caused the insolvency, what role the Guaranty Association system plays in such insolvencies, LTC's historical assessment by the Guaranty Associations as health insurance, and the resulting challenges to the Guaranty Association system by health insurers. There was considerable focus on how the industry got to this point, and the developments that drove the new NAIC Model Guaranty Association Law treatment of LTC and health insurers. The speakers also gave their well-reasoned opinions on how to prevent future failures of additional LTC insurers and how to adapt in the changing health market.

How Kindergarten Prepared Me to be a Compliance Officer: Hot Compliance Issues

This panel was hosted by Shawn Britt, director of long-term care initiatives at Nationwide, Angela Shire, vice president of compliance & regulatory affairs at MedAmerica, and Steven Brogan of Drinker Biddle & Reath LLP. The panel discussed key compliance issues in the world of long-term care insurance and combination products, such as product design, reporting requirements, marketing and disclosure challenges, sales practices, and privacy and security. Shawn Britt's expertise surrounding combination products dovetailed well with Angela Shire's experience and expertise involving closed blocks of traditional LTCI products and Steve Brogan's perspective as outside counsel, as the panel offered the audience diverse perspectives on some of the most difficult and trending compliance issues.

2018 Regulatory Roundtable

The 2018 Regulatory Roundtable featured a panel of senior regulators, including Rhonda Ahrens, life and health actuary for the Nebraska Department of Insurance, Perry Kupferman,

chief life actuary for the California Department of Insurance, and Weston Trexler, product review chief for the Idaho Department of Insurance. The panel was moderated by Michael Gugig, associate general counsel at Transamerica. The regulators offered their insight on current issues impacting LTCI at the NAIC and in the states, including issues related to product and rate increase filings and insolvencies, among other issues. The session offered a standing room only audience the opportunity to ask questions on a broad range of topics and obtain insights in an informal setting.

ALTERNATIVE SOLUTIONS & PUBLIC POLICY

The Alternative Solutions and Public Policy track produced seven sessions this year, with several focused on furthering concepts which emerged from the Society of Actuaries (SOA) Long-Term Care Think Tank project convened in fall 2015. The objectives of both the Think Tank and the sessions at this year's conference are to expand thinking on new ways to pay for long-term care, improvements in how care is provided, and interventions that can lessen the need for care.

Three of the sessions focused on innovations with regard to how to pay for long-term care. In "The Case for Variable LTC Insurance," speakers presented a new product concept that allows benefits to fluctuate in a pre-determined manner as economic circumstances change, rather than necessitating premium fluctuations to make up for shortfalls. This concept builds on variable benefit payouts population with other products such as life insurance and annuities.

In "Consumer View of New LTC Combination Products," results of extensive consumer testing for two new finance concepts were presented and discussed. LifeStage—a term-life insurance product that transitions to LTC coverage after one's working years—is a more affordable option for the middle market. Retirement Plus also targets the younger middle income market and combines LTC with pre-tax retirement savings. The consumer testing revealed strong market potential and consumer interest in both products. Efforts to build stakeholder support to enable these concepts to move forward is currently underway.

In the "Tax and Regulatory Considerations for LTC Innovative Financing Approaches," an industry tax expert explored potential tax and regulatory issues for three new LTC finance options—LifeStage and Retirement Plus from the Think Tank effort, as well as a third option called "Within Plan" that is emerging from work undertaken by America's Health Insurance Plans (AHIP). The session provided regulatory pathways for moving forward on these products and in addition, provided preliminary results of a modeling effort undertaken as part of the SOA Think Tank research project that projected

both foregone tax revenues and potential Medicaid savings for LifeStage and Retirement Plus.

Another alternative methodology in the category of paying for LTC needs is consideration of home equity. "Home as a Strategic Asset for Retirement and Long-Term Care Needs" explored the amount of home equity older adults have in their home and the opportunities and challenges they face in leveraging this important resource to help them pay for LTC needs while they remain in their homes. Home equity represents 60 to 80 percent of the net worth for adults ages 55 and older. So having safe and appropriate methods for tapping into that resource is increasingly important. But recent research shows that both consumers and financial advisors lack the awareness and understanding of the home equity release products that might be available to consumers. Finally, the session discussed the need for taking a new look at revising Medicaid policy with regard to home and home equity to better enable leveraging the equity that is available for LTC.

While most of us hope to age in place—in our own homes—there are two important obstacles to our being able to do so. One is the fact that today's housing stock is largely inadequate to meet the mobility and functional limitations of an aging population. "Aging in Place" presented data on the extent of the problem and some new creative ideas for incentives that would bring consumers, insurers, builders, policymakers, payers, and others together in aligned support for making suitable home modifications to enable aging in place. The other significant impediment is the lack of appropriate resources to meet people's need for in-home caregiver support. "Enhancing Caregiver Resources" explored the issues in both the existing capacity of in-home caregivers and future trends that suggest even greater challenges in the future.

Finally, the track's seventh session, "Getting Insureds to Healthier Futures" featured experts from the Harvard Medical School illustrating new programs and medical protocols that hold promise for mitigating future long-term care claims by enabling and encouraging healthier lifestyles. The Harvard program will provide evidenced-based consumer education, medical information and self-management approaches that can favorably impact future health and that even positively impact brain cognition. In addition the session discussed the experiences of the South African company Vitality and their work successfully incenting healthy behaviors and lifestyle changes in insurance situations throughout the world.

PRODUCER & SALES

The Producer & Sales track of workshops was dedicated to the long-term care insurance producer/advisor. The objective was to offer practical insights to help grow their individual businesses. The workshops were created for producers and



practitioners by producers with the goal of presenting ideas and techniques that can readily be learned, integrated, and immediately provide a wide range of solutions in meeting the long-term care needs of clients. This year there was a renewed emphasis on the producer and sales with a significant increase in attendance.

The Right Combination: Unlocking Your Future Through Marketing

Participants were taught how to build a network of strategic alliances and individual relationships with estate planners, wealth managers, attorneys, CPAs, and other insurance producers. More than just providing them with set appointments and the opportunity of tapping into other professionals' books of business and offering their clients a wide range of long-term care protective products, this truly is a turnkey marketing approach for these professionals to bring these protective products to their clients. Participants heard what to say, how to say it, when to say it in a dynamic and interactive format.

You've Got Mail: The Technology of Selling in the 21st Century

The days of driving two hours each way to an appointment are quickly declining. So too are the days when we sat knee to knee at the kitchen table. It is time to fast forward your LTC practice into the 21st century and embrace the art of remote selling. From screen-sharing to the electronic application, this session explored the methods utilized by the top remote-selling

producers to build need, urgency and value while communicating with clients via screen sharing, telephone, email, and text.

Return of the Jedi: Best Practices of the Masters

This panel discussion of leading producers and Jedi Masters shared the business practices that have allowed them to build large books of business and to maintain a steady flow of new business. When not fielding questions from the audience they shared tried and true closing techniques, as well as the elements of a successful placement rate ranging from effective field underwriting and solidifying the sale to client communications and referral generation.

Which Product for Which Client?

Should you sell traditional LTCL, Asset-Based LTC coverage, Life with Acceleration riders, Individual Plans, Group Plans, Short-Term Care, Annuity/LTC plans, etc.? With the many types of products available in today's LTC funding market, how do you decide which one to offer? There is a private LTC funding solution for virtually everyone. Participants heard from an expert panel that understands the benefits of each type of coverage and how to match each type to a prospect or client.

Effective Sales Techniques

Whether you are selling face to face or virtually, clients today are more often than not in their 50s, requiring a different approach to create the urgency to buy now, and the manner in which we handle objections and effectively close the sale. Our expert panelists compared and contrasted their own one-call and two-call sales methodologies and debated the benefits and detriments of each method.

Building YOUR Brand

In today's world, everyone is connected to others electronically and your life is very visible. So, YOU have a brand that your client will see. Is it what you want? Participants learned from marketing experts how to create a positive brand that will attract clients. Also covered were the latest methods of creating/utilizing a website, generating new leads and referrals, utilizing social media, and general effective marketing techniques.

MARKETING AND DISTRIBUTION

The Marketing track focused on interdisciplinary topics in order to broaden the audience's knowledge base in ways that could help them grow their business and thus the industry.

The track began with "Field Underwriting Made Easy," which focused on how sales success and underwriting success are tied together. The session brought underwriters and marketers together to discuss best practices and opportunities for collaboration between producers, distributors, and carriers.

“Creating Action for your LTC Business by Partnering with Banks, Broker Dealers, RIAs, P&C Firms, and Benefit Brokers” covered a lot of ground from both the BGA perspective and the agent perspective. The panel presented best practices for business development for LTC specialists who want to broaden their business in their community, and offered ideas for BGAs on how to develop resources and coach their producers on doing the same.

“Who Says Worksite is Dead?” provided an annual check-up on the worksite and group market places. An all-star panel surveyed the state of the market, discussing the opportunities available to those who have the capabilities to specialize in that unique space.

The track also explored opportunities in the combination products space from both a product design and target marketing perspective. “What’s New in Combo Products Marketing” sought to highlight the middle market and mass affluent market segments and product features that can be leveraged to effectively target those segments in a way that is scalable.

Another interdisciplinary session focused on risk management and compliance, and what to look out for going forward. “Protect Your Flanks and Lawyer Up” discussed the status of current legal topics that affect distributors, from the DOL and copycat state-level regulation to producer liability and filial responsibility.

Finally, the track approached the perennial topic of social media from a different perspective. Rather than the typical “Social Media 101” style seminar, “Amplifying ‘The Talk’ Through Social Media” focused on how to codify a process for curating and disseminating content. Participants were asked to share the challenges they face in keeping up with the need for continuity in content and ideas while balancing their other businesses, and share their best practices. The panel weighed in on tools that they use, and how to leverage them to succeed. ■



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Exploring New Long-Term Care Financing Options: Results from a Society of Actuaries Consumer Research Study

By Eileen J. Tell, John V. O’Leary and Cindy Malone

There is a critical need for new long-term care (LTC) finance products that specifically address the needs and price points of the middle income market. Traditional LTC insurance product sales are in a significant downturn, and have become less affordable over time. And while combination products (such as whole life with a LTC rider or an annuity and LTC combination) are showing strong sales momentum, they are often priced beyond the reach of many middle-income buyers. In addition, there is unquestionably room for a wide array of product solutions to meet the differing tastes and price points of various buyers. One estimate suggests there is an untapped market potential—based on those who would be both income and health eligible for an LTC insurance product of some configuration—at close to 53 million adults.¹ So instead of debating which product type is “better,” a more fruitful strategy for the long-term care industry might be to continue to innovate and develop a variety of product options and identify the market segments best suited for each.

LIFESTAGE PROTECTION AND RETIREMENT PLUS

These two new LTC combination product designs emerged from work undertaken at the October 2015 Society of Actuaries’ (SOA) LTC Think Tank meeting. . That two-day meeting explored more than eighty possible product innovations to address the LTC financing crisis and prioritized two to be subjects of the research study funded by the SOA Research Expanding Boundaries (REX) pool.

Both of these concepts were designed to be simpler and less costly than the combination products available today, in order to appeal to younger buyers and to be suitable for a range of

distribution approaches including the employer group and online distribution to reduce distribution and product costs.

LifeStage Protection is an insurance policy that starts as term life insurance during one’s younger, prime income-earning years and then switches to a LTC insurance when one is older and at a point when life insurance is no longer as important but when the risks of needing long-term care are greater.

Retirement Plus is a tax-beneficial, 401 (k) type retirement account that has expanded contribution limits, allows flexible use of account funds and builds in insurance elements for LTC.

IMPORTANCE OF MARKET TESTING

A critical component in the development of new product concepts is to test their market potential with consumers. No matter how much the actuaries, marketing experts, policymakers and regulators might like a product and its features, that product has no real chance of meeting consumers’ needs and achieving market success if it does not also represent a realistic, attractive and affordable solution for perceived consumer’s LTC needs and concerns. Too often in the product development process, the voice of the consumer is overlooked. Product testing all too often happens as products are brought to market and the “test” is whether they succeed or fail after substantial dollars have already been invested in product development, regulatory approval, marketing and distribution.

This article summarizes an innovative approach undertaken by the SOA Think Tank and Maddock Douglas, a nationally renowned innovation consulting firm to test the market potential of these product concepts using what they call an “adjusted trial” model. Explained simply, the adjusted trial model translates self-reported expressions of product purchase intent from the survey data and adjusts it using a number of factors to develop estimates of expected product purchase rates in real market situations.

RESEARCH OVERVIEW

The concept presentations and key areas of questioning were fine-tuned through a series of focus groups which preceded the development of the survey questionnaire. A 20-minute, online survey was administered to a random nationally representative sample of 800 household decision-makers who fit the following qualification criteria:

- Ages 35–55
- Not employed in a competitive industry
- At least a high school graduate
- Employed or self-employed
- Household income between \$50,000 and \$499,999
- Self-reported health as fair, good or excellent

Qualifying respondents were randomly assigned to evaluate one of the two concepts. The survey was fielded in September and October 2017.

PERSPECTIVES ON LONG-TERM CARE RISKS AND COSTS

Survey respondents underestimated the risk of needing LTC and did not understand that most extended LTC needs will likely be paid for out of their own income and assets. Just over 60 percent of the sample acknowledged the possibility of someday needing care at home, and approximately 40 percent felt they will need care in a nursing home. And while consumers can expect to pay on average 50 percent of aggregate LTC costs out of their own financial resources, depending upon where care is received, survey respondents say they expect to pay only one-third of their future LTC costs on their own. As we typically see with an under-age-65 population, they are more likely to believe that their health insurance or HMO/health plan will pay for their future LTC needs.

PRODUCT INTEREST

Both products received high marks on a variety of measures of product interest after consumers reviewed a brief description of the product features and benefits. Interest was first evaluated based solely on the concept and design features of the product before price was introduced. Specifically, roughly 60 percent or more of those who evaluated the LifeStage Protection product found it easy to understand, believable, had an overall favorable impression and felt it was likely to meet future needs. Impressions for the consumer respondents who evaluated Retirement Plus responded with comparable levels of interest and product confidence (see Figure 1).

While value was perceived in both product concepts, as anticipated, after exposure to price, product interest declined. For both products, interest in investigating further declined from just under 50 percent saying they would be very or somewhat likely to just under 40 percent expressing this level of interest.

MODELING REAL-WORLD PURCHASE

While these are strong indications of a product's potential popularity, stated interest on a survey, by itself, is not viewed as a reliable measure of actual purchase intent. That said, Maddock Douglas has a proven methodology for translating stated purchase intent into reliable estimates of purchase intent or what they call "product trial" estimates. Their "adjusted trial" model is based on more than 20 years of normative forecasting data from a wide variety of consumer product categories and in addition takes into account their significant experience applying that model to the insurance industry.

Assumptions for products with similar attributes to LifeStage Protection and Retirement Plus were used to translate interest into purchase intent. For example, both products require significant emotional and financial investments and a long-term commitment to the product. These are not frivolously made product decisions, so the translation from purchase intent to adjusted trial estimates in this model must meet more rigorous thresholds than would be applied to more temporary or less costly product (e.g., an annual gym membership).

In addition, respondents' purchase intent in a survey setting is typically more optimistic than it is in a real world shopping experience. Since this optimism is more pronounced among respondents who are less certain in their likelihood to buy, a

Figure 1
Product Impressions Before Price

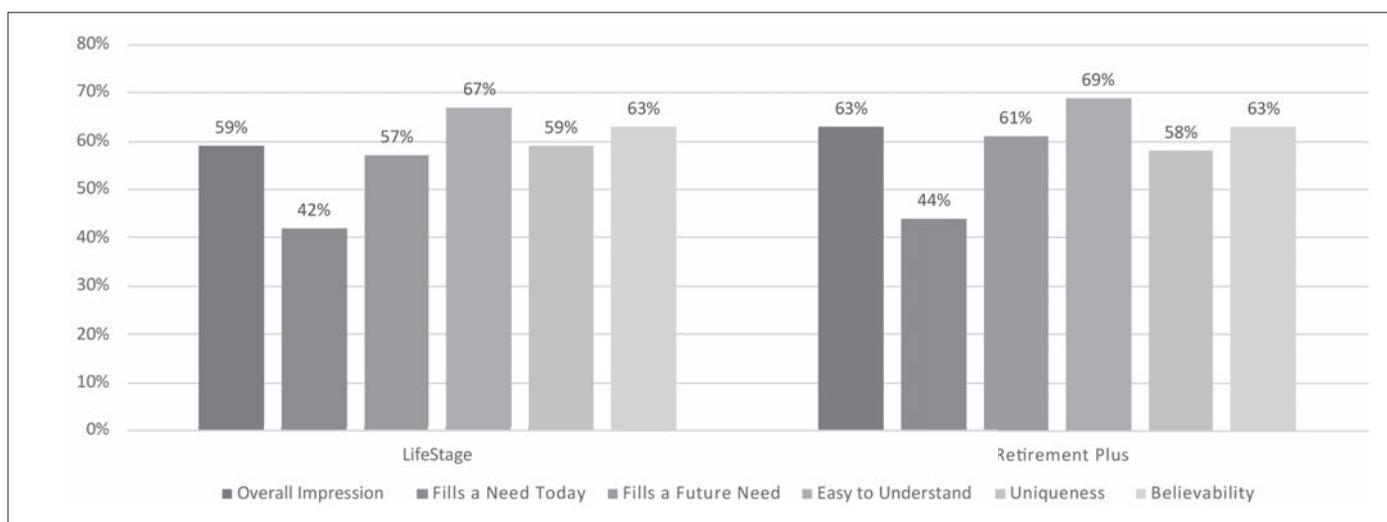
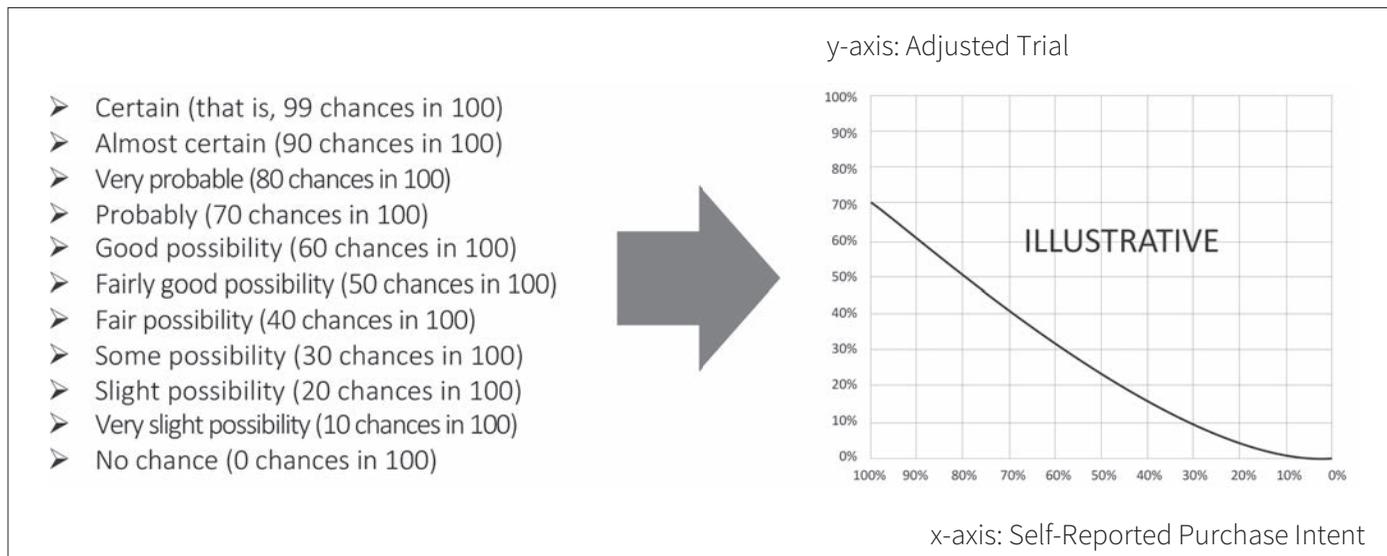


Figure 2
How Self-Reported Purchase Intent Responses Are Adjusted to Create Adjusted Trial



larger adjustment is made for those who report lower probabilities of purchase and smaller adjustments for those who expressed a higher likelihood to purchase. The Maddock Douglas “Adjusted Trial” process accounts for this relationship and adjusts according to the levels of intent to purchase, (as shown in Figure 2) rather than having a single adjustment for all respondents.

Once these adjustments are applied, the model arrives at the “Adjusted Trial” metric that represents the percent of consumers who are projected to purchase the product within the next two years, assuming a base population of consumers with sufficient product familiarity and access to the product.

Both concepts posted strong adjusted trial metrics: 21 percent for LifeStage Protection and 20 percent for Retirement Plus. These scores are above the average Maddock Douglas typically sees for concepts at this price point in the financial services categories, which is more typically in the high single digits to mid-twenties (see Figure 3).

Figure 3
Purchase Intent and Adjusted Trial Estimates

Product	Self-Reported Purchase Intent	Adjusted Trial
LifeStage Protection	49%	21%
Retirement Plus	48%	20%

MARKET POTENTIAL

The Adjusted Trial results from the survey analysis, including age- and income-specific rates for each product, were then used along with assumptions about product access, consumer awareness, and retention rates to model estimated market potential for both products.

Product access refers to the percentage of consumers who have access to the channel(s) where the product is available for purchase. In the model shown below, access is assumed at 100 percent, because it can be available in virtually all channels that distribute long-term care insurance—employers, agents, and directly from insurance companies via telephone or internet—meaning that anyone with the desire to purchase the product would have the access to do so.

Awareness, in this case, refers to the percent of consumers who know about the product and have a basic familiarity with its details and features. The requirements for a consumer to be considered aware are more stringent than simply having heard of the product through advertising or marketing. In the real world, this level of awareness is expected to start low and build slowly. In the initial forecasting, this is estimated at 0.25 percent in year one, 0.5 percent in year two, 0.75 percent in year three, 1.0 percent in year four and 1.25 percent in year five.

The assumptions in this forecast model can be adjusted to represent different possible marketing scenarios. An alternative example for how the assumptions (and resulting market forecast) could play out differently would be if the products were only offered through the employer channel. In this case,



we would assume access to build rather slowly as employers would need to learn about the products and then decide to incorporate them into their employee benefits offerings. Market access of 5 percent or less might be reasonable in the early years. However, awareness among those who have access would be orders of magnitude higher, as there would likely be an open enrollment campaign with educational meetings, websites and employer specific mailings and e-mails. In a situation

such as that, access among employees for an employer offering these products during open enrollment would likely reach close to 100 percent, and awareness levels of 60–75 percent or higher might be reasonable.

Figure 4 outlines the basic assumptions and calculations for determining the number of projected policyholders in the first two years under a broad universe scenario.

Figure 4
Calculations for Number of Policyholders

	LifeStage	Retirement Plus
Projected Universe	53,200,000	53,200,000
x Access	100%	100%
x Year 1 Awareness	0.25%	0.25%
x Adjusted Trial	20.6%	20.2%
X 50% will buy in Year 1	0.5%	0.5%
Year 1 Projected Policyholders x Year 2 Retention Rat	95%	95%
+ New Policyholders (50% of projected buyers made aware in Year 1 + 50% of projected buyers made aware in Year 2)	Year 2 Policyholders	Year 2 Policyholders

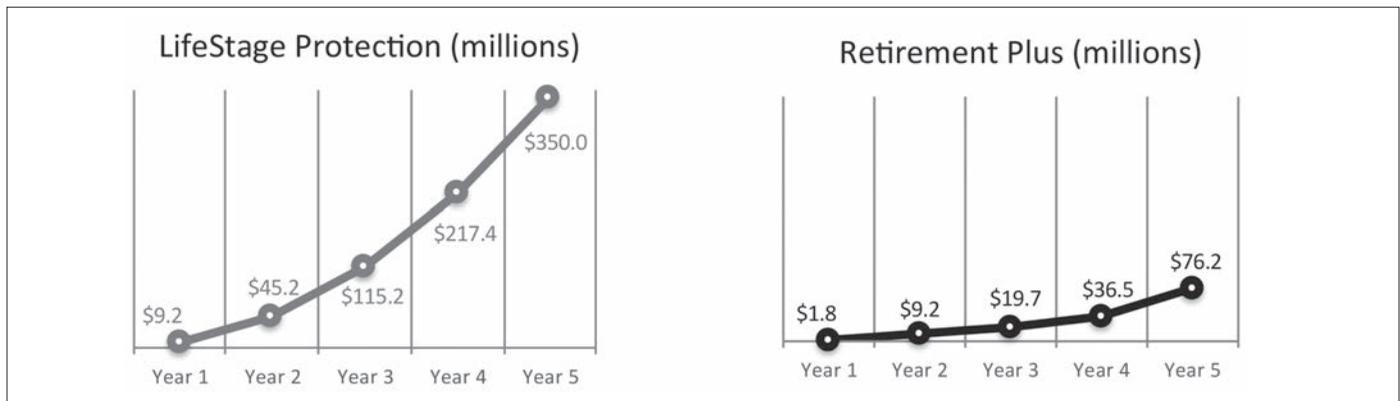
Assumptions based on real-world estimates determined in conjunction with the Project Oversight Group.

Figure 5
Number of Policyholders



	Year 1	Year 2	Year 3	Year 4	Year 5
Access	100%	100%	100%	100%	100%
Awareness	0.25%	0.5%	0.75%	1.0%	1.25%
Retention	N/A	95%	95%	95%	95%

Figure 6
Premium Revenue



The number of year one policyholders is derived by multiplying the number of people in the consumer universe × Access × Awareness × Adjusted Trial. That number is reduced by 50 percent as only half of the two-year projected purchasers would buy in the first year. Year two policyholders include new buyers among those who became aware in year one but didn't buy along with newly aware buyers at a higher awareness rate of 0.5 percent due to increased marketing efforts. It also takes into account retention rates from year one which we assume is 95 percent based on strong retention rates in both long-term care and life insurance industry products. Policyholders for remaining years are calculated in the same manner, acquiring

new policyholders assuming awareness that increases 0.25 percent each year and a steady 95 percent retention rate.

Figure 5 shows the projected trend in the number of policyholders for both products from years one through five. For LifeStage Protection, enrollment grows from 13,700 in year one to 319,800 in year five. For Retirement Plus, enrollment grows from 13,400 to 314,300 by the fifth year.

Using these projections, we can also estimate premium revenue. This is based on the age distribution and benefit selection of the “buyers” from among the survey respondents’ and their associated monthly premium amounts. Because the timing of purchase is spread throughout the year, revenue is assigned to

only six months per policyholder during their purchase year, and then to all 12 months for each subsequent enrollment year. Revenue projections through year five are shown in Figure 6. For LifeStage Protection, revenue starts at \$9.2 million and reaches \$350 million in year five. The projected premium revenue for Retirement Plus is \$1.7 million in year one and \$76.2 million in year five. It is important to note that the premium projects for Retirement Plus are lower, compared to LifeStage because of structural differences in how the products work. For Retirement Plus, the projections only show the LTC insurance add-on component of the contributions and do not reflect the higher retirement-component contributions which will be much higher.

CONCLUSION

The need for creative and affordable LTC care finance solutions that appeal to the middle income market is critical. The market research undertaken by the Society of Actuaries' Long-Term Care Think Tank, in partnership with Maddock Douglas, provides strong evidence that both LifeStage Protection and Retirement Plus have potential to fill that role. While both product concepts are still in the development phase and have regulatory and tax treatment issues to consider, the fact that there is solid consumer research to support their market potential should help move them more quickly from product concept to product offering. This project helps pave the way for insurers and sponsoring employers to more confidently pursue these products with confidence about their likely success with consumers. And perhaps more importantly, this project provides a viable pathway forward to evaluate the potential market success of other new product concepts currently on the drawing board.

The full report, *Long-Term Care and the Middle Market: Sizing the Opportunity for New Ways to Financing Long-Term Care* (May 2018) will be available at the Society of Actuaries' LTC Section webpage. ■



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ENDNOTES

- 1 Tell, EJ, Cutler, JA, and Spillman, B. "Private Financing of Long Term Care: Market Penetration and Market Potential." Academy Health ARM Conference. Boston, June 2010.

Strategic Approaches to Help Make Long-Term Care Risks More Manageable

By Linda Chow and John V. O’Leary

As baby boomers enter their retirement and the U.S. population aging continues, there is a huge foreseeable need to address future financing of long-term care (LTC). This creates promising opportunities for insurance companies to provide consumers with solutions to help them better manage their chronic conditions. However, as we think about the current LTC insurance industry, not a month goes by where we don’t hear news that another LTC carrier has had to take a substantial premium increase and/or a sizable hit to their balance sheet to cover future LTC liabilities. This has created negative publicity that unfortunately has dampened both carrier’s and consumer’s confidence in LTC insurance. As carriers’ management recognize the demand for new and sustainable private LTC insurance solutions and continue to look at ideas, an important question remains as to what product characteristics will help address the risk and value issues associated with current LTC policies.

To help management better identify and evaluate new product ideas, this article seeks to apply lessons learned from our experience to the next generation of LTC products. It focuses on how new products should address having acceptable carrier risks and at the same time enhance the product’s value to consumers to pave the way for broader acceptance.

In this article, we will reference several innovative LTC product ideas including: Combination products that add LTC riders to base life policies or base annuity policies; LifeStage Protection; LTC Retirement Approach e.g., Retirement Plus; Limited LTC coverage (short-term care and home health care (HHC)); and Medicare/LTC.

What will it take to build the next generation LTC products that will meet both the consumer and the carrier needs?

CARRIER AND PRODUCT RISK

The existing private LTC insurance is deemed to be a high-risk product from a carrier’s perspective as its profitability is highly sensitive to changes to a few of the key risk factors such as investment return from asset portfolios, consumers’ lapsing behavior and morbidity costs. The challenges of pricing products, the difficulty in getting rate increase approvals, and the complexity in managing the ongoing claims have inhibited carriers from recognizing potential losses in a timely fashion. Therefore, any new LTC product idea will only be appealing to carriers if it has lower risks both relative to the existing LTC products and at an acceptable level in the absolute.

We believe that new product offerings should have the ability to address the following key risk factors:

New products should address having acceptable carrier risks and at the same time enhance the product’s value to consumers to pave the way for broader acceptance.

Risk mitigation and management

The existing LTC product’s profitability is volatile and is highly sensitive to the changes in key risk assumptions (morbidity, morbidity improvement, mortality, mortality improvement, lapses, interest rates, and expenses). A small negative change to one of these key assumptions could potentially require increasing reserves by 5x+ or 6x+ or reduce profits by close to half or more.

Some new product concepts are proving to be more attractive to carriers (e.g., combination products and possibly retirement plans that include built-in LTC protection) by employing what’s known as “natural hedging” of risk. These products offer both morbidity and mortality protection and these different protections have different financial characteristics whose risks tend offset each other. For example, extended mortality tends to add risks for LTC policies (consumers staying alive longer represents more potential LTC claims), while it reduces the risks for the life insurance component of policies (consumers staying alive longer means the time of death benefit payout occurs further into the future allowing for the investment horizon to be extended).

In addition, the profit sensitivity to claim incidence and termination assumptions is significantly reduced as the insured uses



their own money to pay for LTC benefits and the company is at very little LTC risk.

Experience driven assumptions, corrective mechanics and risk prevention

Many existing LTC policies were priced with limited known information 20 or 30 years ago, when 8 to 12 percent interest rates were common, and lapse rate assumptions hovered around 8 to 10 percent. However, interest rates have dropped significantly and lapse rates have shown to be close to 0 percent. The experience for some key assumptions is starting to stabilize and become more conservative (e.g., how low can lapse rates be, given that carriers are using close to 0 percent lapse assumptions). Using conservative experienced based pricing assumptions to price new products naturally provides companies with an additional layer of assurance that the assumption volatility is being stabilized and mitigated.

In addition to having experience driven assumptions, it's important to have mechanics that would help mitigate risks to prevent the carriers from taking on an excessive amount of unhealthy risks. Such mechanics would allow correction if consumer behaviors turn out to be more adverse than expected. Some of these mechanics may include examples such

as having the right level of underwriting protocols, a deferral period before one can be eligible for coverage or automatic enrollment requirements. Experience has shown that carriers who utilize comprehensive underwriting protocols have experienced up to 50 percent reductions in the claims relative to carriers who do not use them.

Some Medicare/LTC product concepts being considered would impose automatic enrollment requirements on the LTC component. This would help mitigate severe anti-selection risks. Also, this product could be proposed with annually renewable premiums. That way, if the product was somewhat underpriced in year one, it could be corrected on an annual basis as with health insurance plans.

Up until this point in the industry, carriers typically have not proactively managed their insured populations to with the idea of mitigating potential claims costs. Inclusion of some form of preventive health care or wellness benefits could help early detection of conditions that could lead to claim and allow insurers to help consumers take actions that could manage or mitigate those conditions and potentially minimize resulting claims as well.

Limits to upside risk exposure

Existing LTC products often provided lifetime coverage, very rich inflation benefits or cash as opposed to reimbursement benefits. Historically, companies had anticipated potential high benefit utilization by consumers when benefits are rich and loaded their base assumptions significantly. These rich benefit features were therefore priced significantly higher than the less rich benefit features (e.g., cash benefit is usually priced 50 to 70 percent higher). However, despite the loaded based assumptions, emerging experience still shows rich benefits have introduced a much higher than expected consumer anti-selection and utilization of benefits.

What's even more concerning is that the experience will likely continue to deteriorate as the average LTC insured reaches their peak age to claim.

Recently, short-term care and HHC only coverage have gained sales momentum and attention. Short-term care policies provide insureds with up to one year of coverage. While these policies will not completely cover all of insured's LTC needs, they do provide comprehensive coverage to help cover the chronic care needs, especially if that care is delivered in the less expensive home setting. By limiting the maximum amount of benefit a company could potentially be exposed to, these types of products significantly reduce carrier risks.

BALANCING CARRIER RISK AND CONSUMER VALUE

The LTC industry has often proceeded under the assumption that actions to mitigate carrier risk will carry with them the unintended consequences of higher premiums and premium uncertainty and that in turn will lead to low perceived consumer value. The dramatically lower sales that we have recently seen with traditional LTC products suggests both a very dangerous downward spiral and the need for the industry to think differently about our LTC product offering. It turns out that different thinking may result in the opportunity to both enhance consumer value AND mitigate carrier risk.

While the number one reason that consumers state for not purchasing LTC, in study after study, is that the products are not affordable, we believe that the problem isn't just price. It's that consumers aren't convinced that the current LTC product benefits provide sufficient consumer value to justify the price and the long-term financial commitment required to maintain coverage.

In recent qualitative research conducted for the State of Minnesota, consumers stated: "I know I am going to die, but I don't know if I am going to need LTC. What happens if I pay premiums for years, but end up not needing LTC or die before I use it." These type of comments reflect the uncertainty that

consumers feel regarding the value of the traditional LTC product.

But there are product development strategies that have the potential to increase the value of the LTC product offering without necessarily adding substantially to either carrier or consumer costs

New Combinations

As noted above, the recent success seen with products that combine life or annuity with LTC **mitigate carrier risks**, but in addition provide significantly **enhanced consumer value and increase consumer appeal**. In recent quantitative research conducted by the LTC Think Tank, when consumers were exposed to both the LifeStage Protection concept (combining term life coverage during working years with LTC later in life) and the Retirement Plus concept (adding a built-in LTC benefit to their Retirement savings account), they reacted very positively to the idea of multiple product benefits in one product offering. The research indicated that both product concepts' projected trial scores were well above those typically seen in financial services products and both concepts were deemed to have significant market potential.

Creative opportunities to add consumer value by combining/adding benefits to LTC can go beyond these two ideas to include additional product benefits for other family members and caregivers, as well as adding healthy living benefits to the product.

More Health/Less LTC

Often we think of LTC events as an inevitable result of aging. But there is new medical thinking that 50 percent or more of the chronic conditions that are responsible for LTC claims are controllable by changes in lifestyle—better eating, more exercising, stress reduction, better sleeping, etc. There is even thinking by leading medical experts that many of these lifestyle changes can strengthen the brain to the point where it can ward off or mitigate dementia. A product offering with a benefit of "helping you stay younger, longer" will have broader consumer appeal than "helping you protect your assets." And, if the "healthier living" results in lower frequency and duration of claims that could mean that what we and consumers currently deem "adequate" protection could be significantly lower and less expensive in the future.

At the recent ILTCI conference, the session entitled "Guiding Insureds to Healthier Futures" explored both new medical protocols that can help consumers lead healthier lives, but also the kinds of incentives that can be offered to encourage them to undertake them. Carriers would do well to consider the positive potential of incentivizing healthy aging behaviors with the goal of mitigating those chronic conditions that are

Figure 1
Stay at Home Costs and Savings versus Nursing Home Care

Care Site	Average Daily Claim \$s HHC	Average Daily Claim \$s NH	Stay at Home Daily Difference	Monthly Savings at Home	Months to Pay Back \$1,000 Investment
\$100 available DMB	\$85	\$97	\$12	\$365	2.7
\$150 available DMB	\$114	\$137	\$23	\$700	1.4
\$200 available DMB	\$131	\$165	\$34	\$1,034	1.0
\$250 available DMB	\$151	\$212	\$61	\$1,855	0.5
\$300 available DMB	\$158	\$242	\$84	\$2,555	0.4

precursors to LTC claims, even for those insureds who have not yet reached claim status.

Encourage and support care at home

The vast majority of seniors want to stay in their own homes for as long as possible. The fear of going to a nursing home to receive care is one of the biggest fears that seniors have, as evidenced by the not infrequent promises enacted by parents from their children to do everything so they won't have to go to a nursing home. Developing new offerings that provide support for technologies and support services to enable people to safely stay at home longer—**even before they are on claim**, has the potential for a major win/win. It keeps people where they want to be for as long as possible, has the potential to keep people out of the institutional settings they want to avoid and most importantly is typically significantly lower in cost. Figure 1 is derived from Society of Actuaries claims experience data and suggests that monthly care savings realized by remaining at home versus going into a nursing home can range from over \$300 per month to well over \$2,500 per month depending on the available Daily Maximum Benefit.

Given the level of potential savings, carriers should consider use of technologies like emergency medical response systems, medication management and even tele-health programs for current claimants, insureds and older family members to provide the support that can enable consumers to remain healthier and in their own homes for longer.

Add Now Benefits

The LTC industry has, for years, investigated the idea of more “now” benefits. It's time to renew considerations for adding NOW benefits to LTC products so that consumers can realize some benefits today without the need to wait 20, 30 or 40 years,

if then, to benefit from the product. In the current environment, consumers are increasingly focused on the short term. They have a difficult time emotionally justifying expenditures that have high uncertainty associated with them, even when logic might say they should. Providing tangible benefits that they can access sooner rather than later can add significantly to the consumer perception of value for LTC offerings.

CONCLUSION

Two of the main problem areas for existing LTC product are the risks that it represents for insurance carriers and its failure, to date, to address consumer value issues. A successful next generation LTC product needs to address a significant portion of both the carrier risks and consumer value issues. With a careful design of LTC product solutions, that include both risk mitigation and consumer value adds, version 2.0 of LTC protection products can and should be able to be managed profitably. ■



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What It's Like To Be New To LTC

By Waj Abdullah

Honestly, it was scary at first. I didn't particularly want to be in the Long-Term Care (LTC) business, and if it weren't for the office location—Austin—and my desire to be near family, I would not have pursued it. I'm not an actuary, but I have been in insurance since graduating from college. My 14 years of experience in the industry spans individual life, annuity, and group disability businesses. Prior to joining LTC, I had thought the choice to be in the business was, quite frankly, misguided. This opinion was based on simple understanding of macro trends, notably the increased cost of care, improved mortality rate, and rise of chronic cognitive diseases like Alzheimer's. This belief was further reinforced by frequent news stories about reserve strengthening, rate increases, and the choice to exit the business. Nonetheless, the draw of my family and Austin was strong enough to compel me to look at the business more closely.

The time is now for those in the business to embody the passion they share with so many of their colleagues.

As I was considering the move to LTC, the first thing that jumped out at me were the people. They had passion for their work, but they also had battle scars that basic questions about the business quickly revealed. I was struck by the patience with which they took the time to educate me about the nuances of the issues plaguing LTC. For example, from the outside looking in, I never imagined that lapse assumptions could be a cause for mispricing in the business. From there, the conversation pivoted to advances in product design that better mitigate risk and address the concerns I had about the business. I must admit that my concerns were not fully alleviated, but I was encouraged by the passion of the people in the business.

It took a year in LTC and an appreciation of the problem to understand why people in the industry have such passion for their work. The problem LTC addresses is not simply a

business problem, but a societal one. A record percentage of the American population—the baby boomer generation—is expected to retire over the next decade, and 70 percent of them are expected to need some type of long-term care service. While one-third may never require long-term care service, 20 percent will need it for more than five years. Sure, the government will play a role in providing care, but a significantly larger burden is projected to be assumed by the family. This includes loss of income, which extends the problem well beyond those who need care or will need care. You are all well aware of these stats, and the problems the LTC industry has had in addressing the issues, so I need not say more. I now understand the sheer size of the problem, and see that the social call to address it is the driving force for many of you to be in the business. It is humbling and an honor to be part of such a group.

While in LTC, I have also come to realize that while many of the challenges facing the business are specific to it, some are not. The insurance business is complicated as a whole, and LTC is no exception. Relative to other insurance businesses, this one has not fully matured yet and is still learning from its early years. But this does not necessarily make the business more complicated than its older counterparts in the industry. There are certainly problems unique to LTC, such as locked-in assumptions for GAAP reporting. But others, like how we communicate to regulators and outsiders, are not specific to us. Perhaps, in this regard, the battle scars resurface and as a result, the industry is perceived as passive. If the industry participants let their passion drive them, they would take the lead and control the narrative. Sure, there have been examples of industry participants breaking through the fray to address its challenges, but their actions were generally short lived, and drowned out by the news of many carrier exits. I think the time is now for those in the business to embody the passion they share with so many of their colleagues. Industry participants need to aggressively engage not only with those who will need long-term care services, but also with their family members who will ultimately provide the care. There is a need for broader awareness of the problem our industry addresses that will only come from educating the public about LTC and how it fits in with government subsidized care and retirement planning. As a whole, the LTC business needs to look at itself more critically, beyond product lines. For starters, this means recruiting talent from outside in addition to harnessing ideas from within, all while being creative in our engagement with regulators, the public, and other insurance carriers. ■



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Immigration Reform and What It Could Mean for the Long-Term Care Insurance Industry

By Brian Ulery

Long-term care insurance (LTCI) provides financial protection to individuals facing debilitating health issues and requiring assistance with activities of daily living. That assistance relies heavily on a human workforce. Not enough has been accomplished in terms of automating the long-term support and services (LTSS) industry, and there are limits on how much those services could be automated.

We have all seen estimates of future demand for long-term support and services, and we are aware of the supply challenges in meeting those demands. This is a labor-intensive industry with generally inadequate pay. As a nation, we struggle to incent enough individuals to adequately staff the industry as we brace for a dramatic growth rate in demand. The nation's immigrant population is a considerable source for LTSS workers.

The news is full of stories about the increased focus on deportation, removal or return of unauthorized immigrants from the country. In January of 2017, an executive order was signed significantly broadening categories of unauthorized immigrants who are priorities for removal. And in September of 2017, the rescission of DACA (Deferred Action for Childhood Arrivals) was announced with a six-month wind-down.

These actions to increase enforcement of immigration and customs laws could directly impact the LTSS industry. This has sparked conversations regarding the potential financial consequences for LTCI carriers.

The demand for LTSS is projected to increase significantly over the next several decades. If the number of unauthorized immigrants begins declining at an escalated pace, more of those jobs will need to be filled by native U.S. citizens and authorized immigrants, both of whom earn higher wages on average.



Through several scenarios, this article is a study of what these changes could mean for those carriers managing large blocks of in-force long-term care insurance.

BACKGROUND ON UNAUTHORIZED IMMIGRANTS AND DIRECT CARE WORKERS

Reports indicate that there were almost 44 million immigrants living in the United States in 2016; 11 million of those were unauthorized. More than half of those live in four states (CA, FL, NY, and TX). There were 450,000 documented removals of unauthorized immigrants in each of 2015 and 2016. Conversely, new immigrants have been entering the country at a rate of almost 1.5 million per year.¹

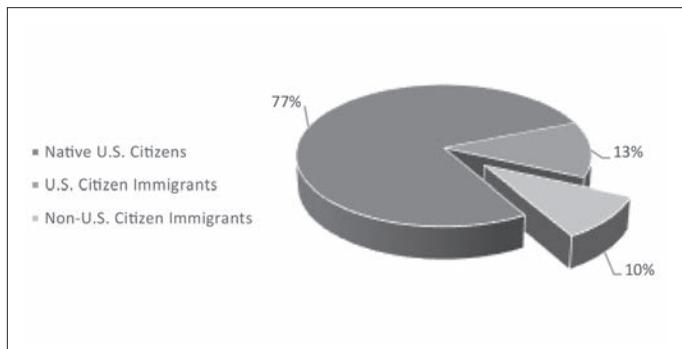
There are 4.4 million workers in the direct care industry (certified nursing assistants, home care and personal care aides). This number is projected to grow by 41 percent over the next ten years.² This article focuses on home care and personal care aides, as Certified Nursing Assistants are assumed to be either native U.S. citizens or authorized immigrants.

Immigrants comprise almost one million of those direct care workers (nearly 25 percent). Of those immigrants providing direct care, 44 percent are non-U.S. citizens. In other words, 10 percent of direct care workers are estimated to be non-U.S. citizen immigrants.³ Some portion of these non-U.S. citizens is authorized to work in the country. However, as 25 percent of all immigrants living in the United States are unauthorized, many of these non-U.S. citizens providing direct care are likely to be unauthorized. Furthermore, this number is likely significantly understated as there is a “gray area” in which much of the work provided by unauthorized workers goes undocumented.

For purposes of this article, I assumed that half of the non-U.S. citizen immigrants providing direct care are unauthorized. Sensitivity tests provided later show the impact of assuming only 25 percent or as much as 75 percent are unauthorized. Those tests show that the financial implications for long-term care insurers are relatively insensitive to this assumption.

While there are generally more safeguards in place to be an approved provider for qualified benefits from an LTCI policy, many policies have provisions through which the cost of services provided by unauthorized immigrants are currently being reimbursed. Examples of such provisions include an informal caregiver benefit or a cash benefit. Furthermore, services currently provided by unauthorized immigrants, but not reimbursable by long-term care insurance policies could become services provided by qualified providers and thus become reimbursable benefits if the cost of those services were to increase.

Figure 1
Direct Care Workers by Legal Status



While immigrant workers in total make up 23 percent of the direct care workforce, they provide 28 percent of the care. Again, this number is most likely underestimated due to unreported care provided by those unauthorized immigrants.

The annual median direct care wage in 2016 was \$22,192.⁴ This assumes that 60 percent of direct care is personal care and the remainder is provided by home health aides. The median for all immigrant direct care workers was \$19,000.⁵ Unauthorized immigrants earn less than authorized immigrants. Estimates put this differential at 20 percent when adjusted for similar functions. This puts the median direct care wage for authorized immigrants at \$20,833 and unauthorized immigrants at \$16,667.

From the 2017 Genworth Cost of Care Survey, the average hourly rate for direct care was \$23.28. Using the differences in median wages above along with the distribution of work among the three categories, one can estimate the average hourly rates for direct care by legal status. For native U.S. citizens, an average hourly rate of \$25.33 is implied. The rate for authorized immigrants is \$21.85. For unauthorized immigrants, the rate is \$17.48. Unauthorized immigrants earn an estimated 31 percent lower hourly wage than that earned by native U.S. citizens.

WHAT THE FUTURE DIRECT CARE WORKFORCE MIGHT LOOK LIKE

Today, 77 percent of direct care is provided by native U.S. citizens, at an average hourly rate of \$25.33. Only 10 percent is reported to be provided by unauthorized immigrants at an hourly rate of \$17.48.

Assuming enforcement of immigration and customs laws continues and increases, it is conceivable that in ten years 86 percent of direct care would be provided by native U.S. citizens at an average hourly rate of \$34.04 or higher. This assumes a continuing 3 percent average annual increase in the overall cost of home health care. However, as the demand increases for more native U.S. citizens in this workforce, it is plausible that the annual increase in the cost of care will be higher for those services. If it is only 1 percent higher, the average hourly rate in ten years would be \$37.50. If there is a 2 percent additional annual premium, the average hourly rate could be \$41.26. Further, if there is a 3 percent additional annual premium, the hourly rate could be \$45.37

All the same, ten years from now, 4 percent of direct care could be provided by unauthorized immigrants, at an hourly rate of approximately \$23.50.

In twenty years, 88 percent of direct care would be projected to be provided by native U.S. citizens, and only 3 percent would

be projected to be provided by unauthorized immigrants. At that point, the average hourly rate earned by native U.S. citizens could be as much as two and a half times that earned by unauthorized immigrants.

Figure 2
Projected Mix of Direct Care Workforce

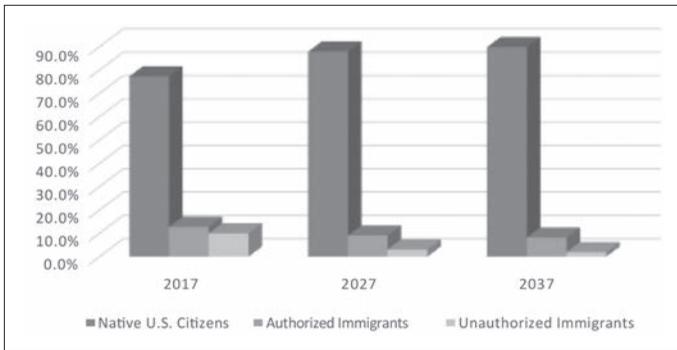
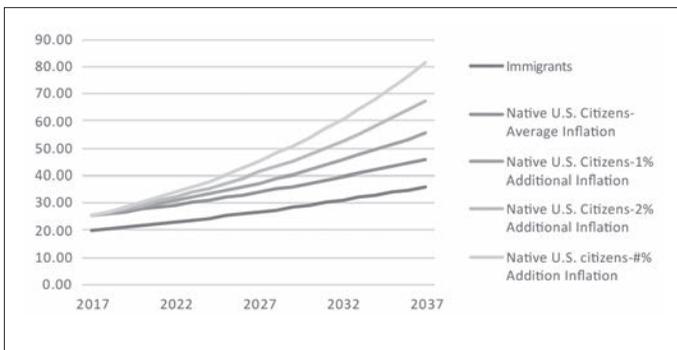


Figure 3 demonstrates the potential growth in hourly rates over the next twenty years.

Figure 3
Projected Hourly Cost of Direct Care



The increasing disparity in the average cost of services provided by native U.S. citizens versus those provided by unauthorized immigrants coupled with a decrease in the population of unauthorized immigrants and the corresponding increase in demand for native U.S. citizen direct care workers poses an interesting scenario for long-term care insurers. To understand the potential implications, I developed projections of future liabilities.

WHAT COULD THIS MEAN FOR LTCI CLAIMS?

In short, higher costs for long-term support and services will lead to higher claims. How much higher could claims be? To address this, I used a simple model based on a block of business with an average attained age of 80 and in force for 15 years, which is typical for the industry.

Using assumptions representative of experience with an average block of LTCI, the model projects nursing home, assisted living facility and home health care claims separately, assuming the direct care workforce continues as it has been. I then used the same model but reflected shifts in the future demographic makeup of the direct care workforce. The demographic shifts are a function of increased deportation and removal of unauthorized immigrants coupled with a slower future rate of overall immigration into the country. Furthermore, several scenarios were projected reflecting additional increases in the cost of services provided by native U.S. citizens to address potential increases in demand versus supply.

Benefits were assumed to be reimbursement, with an equal mix of inflation protection and no inflation. Utilization was adjusted to reflect the projected future benefits.

Figure 4
Projected Increase in Paid Claims

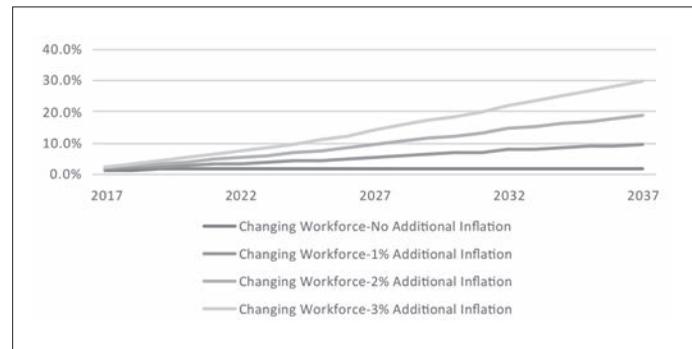


Figure 4 demonstrates the increase in projected paid claims for four future scenarios.

As can be seen in the chart in Figure 4, additional inflation in the average hourly cost of direct care services provided by native U.S. citizens has a significant impact on projected increases in future claims. If no additional wage inflation were to emerge, the increase in future claims remains relatively steady (approximately 2 percent). However, if the potential supply and demand imbalance were to add 3 percent annual inflation for wages of native U.S. citizen direct care workers, future claims could ultimately be more than 30 percent higher.

I studied the present value of future liabilities under each scenario over the next twenty years as well as over the remaining lifetime for the book of business that was modeled. Given the block has an average attained age of 80, the difference between the two results is minimal. The potential percentage increase in liabilities is presented in Figure 5.

Figure 5
Percentage Increase in Liabilities

Additional Wage Inflation	20 Year Increase	Lifetime Increase
None	2.0%	2.0%
1%	5.1%	5.2%
2%	8.6%	8.9%
3%	12.5%	13.0%

POTENTIAL LONG-TERM CARE INSURANCE MARKET IMPACT

In reviewing 2016 long-term care experience reporting for the just over 100 carriers who comprise the majority of the in-force business, the total reported reserves were \$117 billion. 74 percent of the total reserves, or \$86 billion, were reported by ten carriers.

Using reported reserves and earned premiums, I approximated the total industry anticipated future claims from \$150 to \$175 billion. For the top ten carriers, the estimated future claims are from \$110 to \$125 billion.

We could certainly debate as to the reasonableness or adequacy of these reported numbers, and recent industry news articles suggest that best estimate liabilities could be substantially greater. Nonetheless, the impact of increased enforcement of immigration and customs laws discussed in this article could easily add at least another \$3.4 billion to total industry claims under a more optimistic scenario, where there is no supply-and-demand influence on additional wage inflation. In worse scenarios, these actions could add \$22.6 billion or more. Figure 6 shows the potential industry impact by inflation scenario, using the upper bound of estimated liabilities based on reported reserves and earned premium.

Figure 6a
Potential Additional Liabilities (m)

Additional Wage Inflation	Total Industry	Top 10 Carriers
None	3,433	2,502
1%	9,075	6,613
2%	15,424	11,239
3%	22,578	16,452

Using the same approximations, and based on reported values, the average future anticipated claims are about \$12.6 billion per carrier for the top ten carriers. Given this, the scenarios discussed could consume from 3 percent to 20 percent of capital and surplus per carrier. Even the lower end of this range would be a significant challenge to a less capitalized carrier. The upper end of the range could be catastrophic.

Again, these numbers all assume that half of the non-U.S. citizens providing direct care are unauthorized. The following tables summarize sensitivities around that assumption.

Figure 6b
Total Industry Unauthorized Sensitivities

Additional Wage Inflation	25%	50% (Base)	75%
None	3,181	3,433	3,683
1%	8,728	9,075	9,419
2%	14,969	15,424	15,874
3%	22,002	22,578	23,150

Figure 6c
Top 10 Unauthorized Sensitivities

Additional Wage Inflation	25%	50% (Base)	75%
None	2,318	2,502	2,684
1%	6,360	6,613	6,863
2%	10,908	11,239	11,567
3%	16,032	16,452	16,868

CONCLUSION

The long-term care insurance industry is certainly not without challenges. The introduction of the topic of this article into future claims projections is something that most have not yet considered. Whether these changes materialize or not remains to be seen. Nonetheless, with all the media attention the topic is receiving, this is one more interesting factor for our industry to consider. ■

Disclaimer: The views expressed in this article are those of the author and are not necessarily those of the Society of Actuaries or the Long Term Care Insurance Section.



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ENDNOTES

- 1 Source: The Migration Policy Institute
- 2 Source: Bureau of Labor Statistics Occupational Outlook Handbook
- 3 Source: P.H.I. Research Brief – Immigrants and the Direct Care Workforce
- 4 Source: Bureau of Labor Statistics Occupational Outlook Handbook
- 5 Source: P.H.I. Research Brief – Immigrants and the Direct Care Workforce

Case Study Part 3: Improving Financial Projections for Long- Term Care Insurance with Predictive Analytics

By Missy Gordon and Joe Long

Predictive analytics has significant potential to help long-term care (LTC) actuaries develop more accurate projections via an automated robust process. In our previous articles on this topic, we discussed the importance of giving the “right” amount of weight to a company’s experience when adjusting an industry benchmark in order to produce a projection assumption that generalizes well to future data. Subsequently, we covered the use of penalized general linear models (GLMs) and gradient boosting machines (GBMs) to balance the trade-off between bias and variance without relying solely on actuarial judgment. In this article, we walk through an illustrative case study for one company (with its permission), call it Company Enlightened, that transitions from using traditional techniques (actual-to-expected studies) to using predictive analytics to develop a claim termination assumption.

Like most insurers providing LTC coverage, Enlightened did not have enough historical claim data to build an assumption completely from its own experience. Therefore, we used an industry benchmark as a starting assumption and adjusted it to better fit Enlightened’s experience. This benchmark was developed from the *Milliman Long-term Care Guidelines*, which reflects industry experience that is tailored to this particular block of business by adjusting for demographics, product design, claim adjudication, and underwriting. One of Enlightened’s initial requirements was that the new assumption be delivered in the same format as its existing assumptions to avoid modifying the projection system. This created a stepping stone approach, where progressing through the steps incrementally allows one to easily compare the approaches and gain comfort with using predictive analytics to develop the assumption. Furthermore, because of the flexibility that predictive

analytics offers, it sets the stage for future assumption updates that consider new variables and interactions.

As actuaries, we are interested in more than just the single projection estimate that the assumption produces. Often we are required to conduct sensitivity tests or determine the amount of margin that should be included in an estimate. Monitoring the emerging experience is also important because we need to determine if our estimate is within a reasonable range of fluctuation or if it is a deviation due to a systemic shift underlying the experience that warrants investigation. Determining thresholds of reasonable fluctuation can be subjective in nature. Fortunately, with predictive analytics, we are able to remove some of this subjectivity by using techniques that estimate the uncertainty underlying the projection.

METHODS

The existing assumption was developed using a traditional actual-to-expected (AtoE) approach—combining credibility theory and actuarial judgment to adjust the benchmark. All calculations were performed using an Excel workbook to allow for a transparent avenue to make adjustments based on actuarial judgment from a seasoned actuary. Claim termination tables were developed for three sites of care: nursing home (NH), home care (HC), and assisted living facility (ALF). Each table varied by gender as well as by lifetime and non-lifetime benefit periods. This resulted in a total of 12 tables, each representing the benchmark with adjustments based on Enlightened’s historical claim experience.

To isolate the incremental impact of shifting the assumption development following a traditional approach to one incorporating predictive analytics, we used the same historical data and benchmark. By using the same variables and assumption format, the new assumptions could be uploaded into the projection system for a direct comparison. After getting comfortable with the new predictive analytics approach, additional variables can easily be explored for the next assumption update.

Initially, we explored the use of a penalized GLM to update the projection assumptions. However, we found in this application, the parametric (user defined) formula for a penalized GLM created challenges due to the complex interactions underlying the data. For example, we would have had to make decisions concerning which claim duration months to band together or perhaps include higher-order terms to introduce a non-linear relationship. We also would have been required to determine the appropriate interactions among other driver variables in the starting assumption, such as incurred age, gender, claim situs, and benefit period. Given that one of our aims was to find a simpler, less time-consuming approach to expectations adjustment, we needed to identify an alternative method.

We decided to use a GBM algorithm. This allowed us to capture the complex interactions underlying the data in an automated fashion and also to determine the amount of credibility to give to the various data cuts. Although GBMs and machine learning models in general tend to have a “black box” quality—meaning it is not easy to parse exactly how the model arrived at a particular result—we were still able to produce an adjusted assumption that was in the same format as the current assumption. We did this by developing artificial observations for every cell in our base benchmark tables and then running them through the trained GBM model to produce the final adjusted assumption. As discussed in our prior article, we can gain more insight on how a model arrives at a prediction by looking at variable importance measures and partial dependence plots. There are emerging advancements and continuous research in this area, which is shedding light on these “black box” algorithms—making them more transparent.

COMPARING THE RESULTS

Figure 1 is an illustrative example for one of the 12 assumption tables we developed which compares the discounted average length of stay (ALOS) that is calculated from the benchmark, the traditional methodology (existing assumption), and the GBM approach (new assumption). As you can see, the traditional method and GBM produce a similar ALOS that is longer than the benchmark, which gives comfort that the

GBM assumption is in a reasonable range of our prior developed assumption.

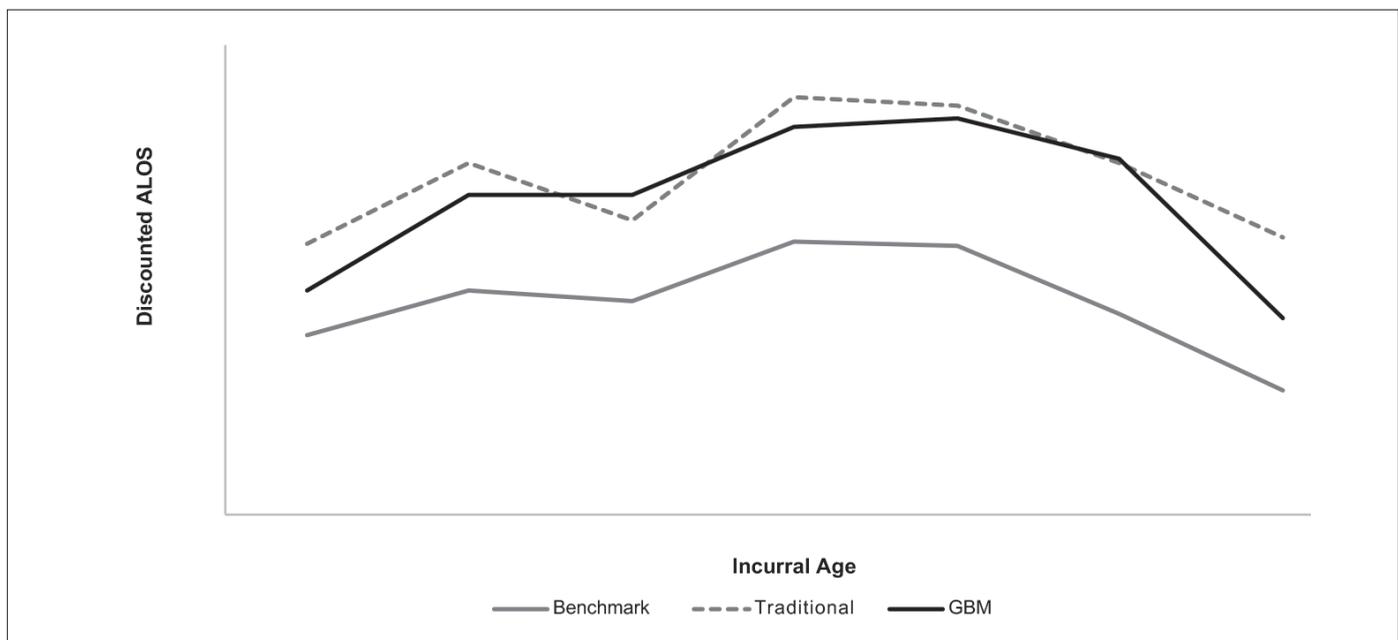
Figure 2 further illustrates the sensitivity of switching from using the traditional developed assumption to the GBM developed assumption shown with the calculation of future profit margin (as percent of premium). Again we see the GBM produced similar results with an impact of -0.3% from making the switch from the traditional to GBM method.

Figure 2
Comparisons of Different Approaches to Calculating Future Profit Margin

	Future Profit Margin		
	Traditional	GBM	Impact
Total	15.5%	15.2%	-0.3%

As we are only updating the claim termination assumption underlying the morbidity (i.e., no changes due to incidence or utilization), we would not expect wild deviations in future profits, but the impact is observable. This impact is for illustrative purposes and does not indicate the direction or magnitude that such a change might have for other companies and situations. Because the traditional study is highly dependent on actuarial judgement, the impact could be materially different for certain situations where the traditional approach is significantly over- or under-fitting the assumption.

Figure 1
Comparisons of Different Approaches to Calculating Discounted Expected Average Length of Stay



TESTING PERFORMANCE ON NEW DATA

The original study was performed on data gathered through 2014. Subsequently, new data was gathered, enabling us to test the predictive performance on the new two years of data. This allowed us to test how well each assumption development method performed on data that was not used to develop the original assumptions.

Figure 3 compares results on new claim experience data using the metrics of AtoE, mean squared error (MSE), and mean absolute error (MAE). The reason we use all three is that AtoE metrics can mask offsetting errors, which MSE and MAE measurements do not.

Figure 3
Actual-to-Expected Claim Termination Experience

Metric	Benchmark	Traditional	GBM
AtoE	0.90	0.93	0.93
MSE	72.4	63.6	54.3
MAE	6.5	5.5	5.2

The key takeaway from this table is that the GBM assumption produced similar results to the traditional assumption while having slightly better performance when looking at the MSE and MAE metrics. At first glance, it might seem that getting similar results is not that exciting. However, the important observation is that the GBM enables us to provide an automated process that does not demand the full labor of a seasoned actuary—making the results more reproducible (as opposed to many manual or judgement-based decisions).

It also produces a better projection estimate as shown by the predictive performance metrics.

As discussed in our first article of the series, the traditional method requires a lot of judgment and uses a cumbersome Excel workbook that is difficult to update. These updates are also prone to human error. Predictive analytics automates the updating of assumptions, saving valuable time that can be used to solve new challenges and deliver value-added insight. The similarity in results also provides decision makers with comfort that the use of predictive analytics is not going to produce wildly different results from what a skilled actuary would provide.

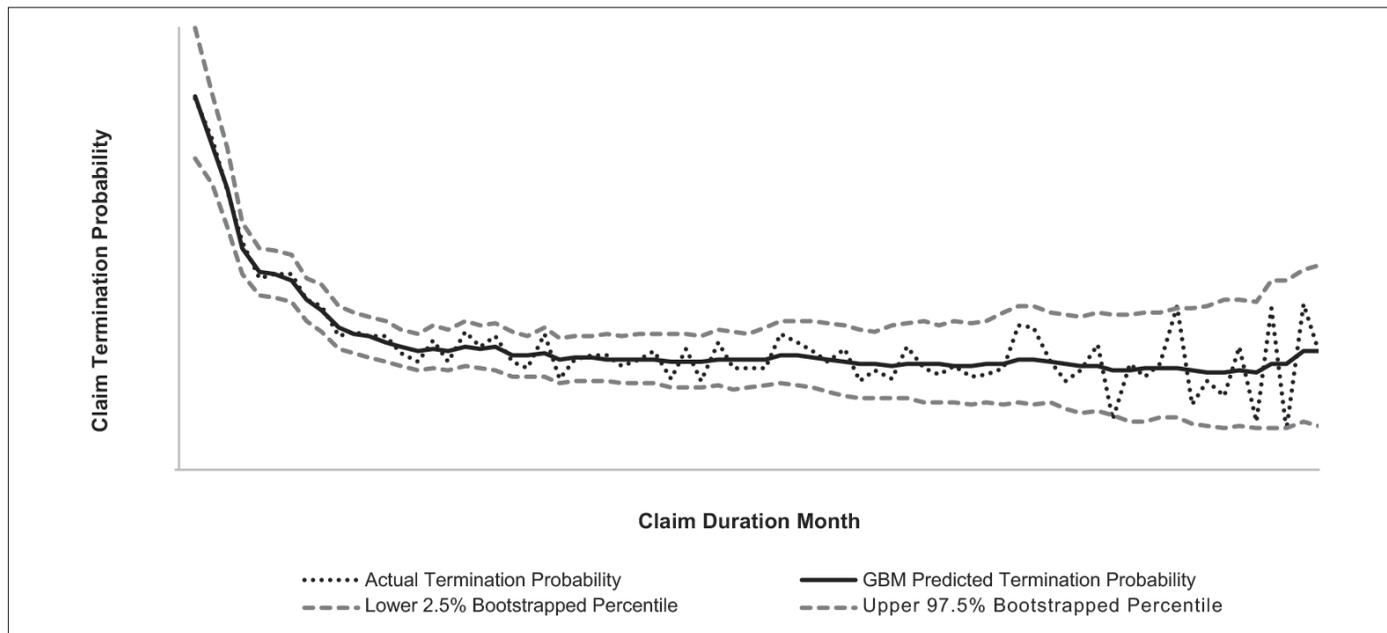
More broadly, the automated nature of the GBM makes it easier to broaden the variables and interactions one can reasonably consider. For example, actuaries can explore adding new driver variables that were not historically included in the projection system. Predictive analytics can be used to efficiently assess whether these variables produce meaningful differences in outcomes, even if it was not feasible to incorporate them into the original assumption setting process. Adding third-party data also becomes much easier as does analyzing complex interactions such as morbidity improvements.

UNDERSTANDING UNCERTAINTY

After becoming comfortable with predictive analytics, we can use them to explore answers to additional questions. As experience emerges and deviates from that assumed—we can say with absolute certainty that it will happen—we might want to know if the emerging experience is an early detection of a new pattern or if it is within “normal” fluctuation. Often, we want to know how much we can anticipate actual



Figure 4
95% Credible Interval for the GBM Using Bootstrapping with 1,000 Replicates



experience to fluctuate around the model’s estimate in order to aid in sensitivity testing or to determine how much margin to include in an estimate. With predictive analytics, we can do just that. There are techniques to estimate the amount of uncertainty in a model’s estimation that helps us understand how the statistical noise inherent in historical experience data (or missing driver variables) affects our projection assumption. With a GLM, there is a predetermined theoretical formula that underpins the calculation of confidence intervals based on an assumed statistical distribution. A GBM, by contrast, is a machine learning technique that combines a large number of decision trees that makes it impossible to calculate a direct formulaic solution for model uncertainty. In such a case, we can pull ourselves over the fence of impossibility by using bootstrapping¹ paired with parallel cloud computing to estimate model uncertainty.

Bootstrapping uses “random sampling with replacement” to measure model uncertainty by providing a direct estimate of the requested distribution as opposed to assuming a parametric distribution from the outset. For instance, to better understand the plausible statistical fluctuation underlying the claim termination assumption, we conducted a bootstrap analysis on the GBM that was used to develop the claim termination assumption.

Saving you from the full and highly technical details, we accomplished this by creating 1,000 simulated data sets that were randomly sampled (picked) with replacement (can be picked again) from the original claim experience data set. For

each simulated data set, we re-trained a GBM and used it to project claim terminations for the subset of original claim experience that was not picked for the simulated data set (i.e., out-of-bag² artificial terminations). These projections created a distribution of average claim termination rates by claim duration. From this bootstrapped distribution, we selected the 2.5 and 97.5 percentiles at each duration month to create the lower and upper bound for the 95% credible interval,³ respectively. Figure 4 provides a visual depiction of the 95%-credible interval of claim termination probabilities that was created via the bootstrap analysis.⁴ Other bootstrap analyses can be conducted to answer a variety of questions related to model uncertainty; this is only one example.

ADDITIONAL USES FOR PREDICTIVE ANALYTICS AND FUTURE EXPLORATION

These results point to a number of interesting areas for additional exploration in the field of predictive modeling for addressing the needs of the LTC community.

First, there is the possibility of updating additional assumptions. We have already used predictive analytics for morbidity incidence and incurred claims in developing the *Milliman Guidelines* industry benchmark and several company studies. Mortality also lends itself well to these techniques because one can use a standard table as the offset or starting expectation and then make adjustments to it. We have used predictive analytics to develop mortality assumptions for multiple companies. The

same process can also be used for utilization and lapse, whether starting from scratch or adjusting an earlier benchmark.

Besides assumption development, predictive analytics can also be used in the field of fraud, waste, and abuse detection. These tools could be used to flag claims that might be fraudulent based on false diagnoses, falsified reports of resource use, overpricing, or waste. As claims age and blocks become more expensive to service, the detection of fraud, waste, and abuse becomes critical to reducing or preventing rate increases and maintaining plan solvency.

Finally, predictive analytics may be used to understand which care management approaches and specific interventions help reduce the incidence and severity of claims. Much of the LTC industry is closed block and faces significant challenges in managing this business. Rate increases can only go so far due to limitations and lack of consistency in the regulatory environment. Underwriting manages the risk on the front end, but without many new issues, companies need to look at managing the back end of blocks. Prescription drug history is a component of underwriting, but may also be useful in later years on the back end to identify insureds that may be most at risk for claim and allow a company to actively manage them.

At present, the potential of predictive analytics in the LTC industry is still in the early stages of being realized. We hope this article series has helped demonstrated some of the possibilities and provided an incentive for further exploration. With LTC being one of the most challenging lines of business,

modern modeling methods provide great promise for better projecting anticipated performance and managing claims, enabling actuaries to provide greater value. ■



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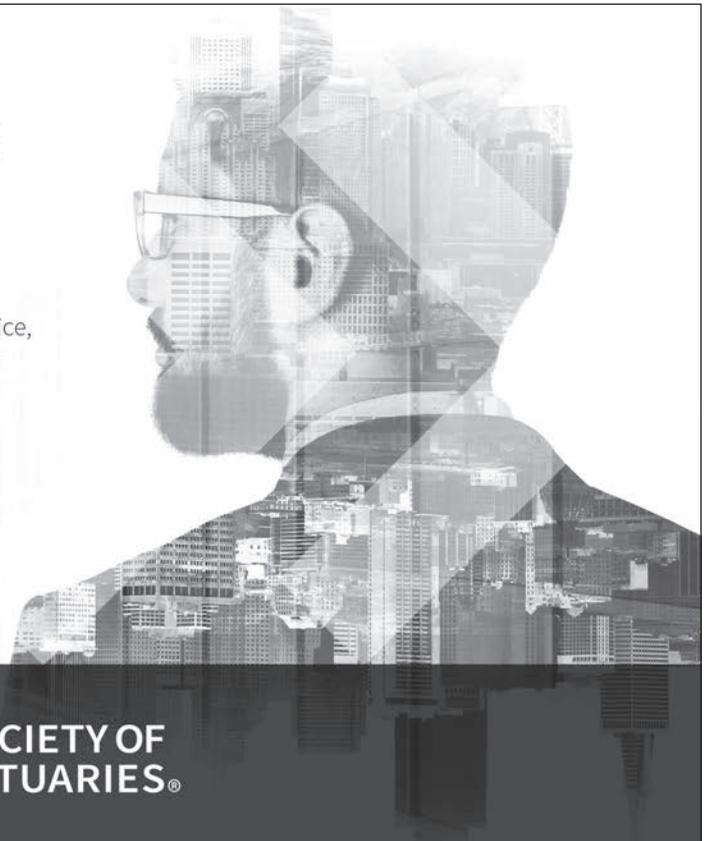
ENDNOTES

- 1 For more information on bootstrapping see section 5.2 on page 187 of the textbook *An Introduction to Statistical Learning*.
- 2 In resampling methods, out-of-bag refers to observations that were not selected in the resampled data. In this case, they were the observations that were not used to train the GBM within each bootstrapped replicate.
- 3 For more information on credible intervals see *CONFIDENCE VS. CREDIBILITY INTERVALS*. Retrieved Jun. 12, 2018, from <https://freakonometrics.hypotheses.org/18117>.
- 4 Special thanks to Shae Parkes, FSA, MAAA, a principal and consulting actuary at Milliman, for assisting us in the development of our methodology for bootstrapping a credible interval for a GBM.

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The Impact of Tax Reform on Federal LTCI Deductibility for Business Owners

By Marc Glickman

Editor's Note: This article was originally published in the Jan/Mar issue of CLTC Digest. It is reprinted here with permission and has been lightly edited and formatted for the newsletter.

The Tax Cuts and Jobs Act (Tax Reform) was signed into law in late 2017. It is complex and still being analyzed by tax experts and advisors. In this article, we will explore the possible impact of changes to the tax code and how those changes might affect long term care insurance planning. Since every situation has unique circumstances, and laws are subject to interpretation and change, your client should consult with their tax advisor to see how Tax Reform might affect them. While I'm not licensed to give tax advice, the following information is meant to give a general overview of the recent changes.

Tax Reform presents a unique opportunity to have a LTCI planning conversation with your clients. Business owners and tax advisors are focused on analyzing the many changes to the tax code. LTCI can be an integral part of that analysis.

WHAT HAS NOT CHANGED

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) was enacted to satisfy a number of different public policy objectives including: (1) classifying long term care costs as a medical expense thus providing taxpayers with some economic relief; (2) categorizing long term care insurance as accident and health insurance thereby providing clarity as to the tax treatment of premiums and benefits; and (3) providing the general public an incentive to purchase private long term care insurance.

As a result of treating LTCI similar to accident and health insurance, businesses began to provide this valuable benefit to their owners and employees. Businesses can “carve-out” LTCI plans for owners, select employees, their spouses and dependents. Tax-qualified LTCI reimbursement benefits received are generally not includable in income for the employee



despite the fact that premiums are deducted by the employer. This differs from other employer paid plans (i.e., Disability Insurance) where benefits can be taxable to the employee if the premiums were deducted by the business.

Businesses that file their taxes as C Corporations can generally deduct all LTCI premiums under the plan subject to the requirement that the total compensation is reasonable for services that the employee provides to the business.

Businesses that file their taxes as S Corporations can also deduct premiums paid for LTCI. Like accident and health insurance, LTCI premiums for a 2%-plus owner in an S Corporation may be claimed as an above-the-line (not itemized) self-employed health insurance deduction on line 29 of the 2017 IRS Form 1040. 2%-plus owners of an S Corporation have an annual dollar limit on the amount of the premium deduction based on the age of the owner during the calendar year when the deduction occurs—limited to the lesser of actual premium paid or eligible LTCI premiums.

This tax treatment not only applies to S Corporations, but also Sole Proprietors, Partnerships, and some Professional Service Corporations (i.e., doctors, lawyers, or accountants). The precise treatment of the LTCI deduction depends on the type of business entity.

WHAT HAS CHANGED

There are changes in Tax Reform that may have an indirect impact on the amount of tax savings related to LTCI deductions:

1. Changes to the overall tax rates for businesses and individuals.

Tax Reform changes both the Corporate and Individual Tax Rates. The highest C Corporation Tax Rate changes from 35% to 21% and the highest Individual Tax Rate changes from 39.6% to 37%. Later in this review, we will look at estimated after-tax costs of LTCI plans for a hypothetical client given these new tax rates.

2. Changes to other deductions that might affect LTCI tax savings.

The state and local tax itemized deduction for individuals on the federal tax return has been changed under the new law. This could increase federal taxable income especially for those in high income tax states. As such, LTCI deductions may be more desirable than before to take on state income tax returns.

3. Changes to the Consumer Price Index (CPI) methodology for the Age Eligible LTCI Premium limits.

The age based annual deductibility limits changed from CPI to “Chained CPI”. This is unlikely to have a major impact. Overall chained CPI has increased 2.11% annually since 2001 as compared to CPI, which has increased 2.33% annually. The Age Eligible LTCI limits are linked to the medical care component of CPI.

INSIDE THE NUMBERS

Different entity types will likely yield different estimated dollar tax savings for a business owner paying LTCI premiums using the corporate checkbook:

- Owner of a C Corporation = Premiums Deducted (not limited) x Corporate Tax Rate
- 2% plus owners of a S Corporation = An amount equal to the S Corporation’s deducted LTCI premiums is pass-through income to the owner’s individual tax return. The business owner can then deduct the premiums (limited by dollar amount based on age) x Individual Tax Rate.

The actual dollar tax savings will depend on many factors related to the owner’s overall individual tax return.

CASE STUDY

A 60 year old couple (business owner and spouse) are looking to implement a long term care plan after having just finished taking care of one of their parents. They learn from their advisor that LTCI can not only provide significant asset protection, but the benefits received are tax-free. Both individuals are very healthy and have been pre-qualified for the best underwriting class. After a conversation to learn about the client’s needs, budget and desires, the advisor designed a long term care insurance plan that will cost approximately \$2,500 per person, or \$5,000 combined.

Let’s see how much tax savings they could achieve by deducting the LTCI premiums. First, let’s assume they own a C Corporation. As a result of Tax Reform, the highest federal corporate tax rate is 21%. Their premiums are fully deductible and they could save \$1,050 (\$5,000 x 21%). As a result of this deduction, the net cost of the LTCI plan after tax savings is essentially \$3,950.

Now, let’s assume they own an S Corporation. After Tax Reform their top federal individual tax rate is 37%. In 2018, based on their age (60), they are eligible to deduct up to \$1,560 per person (or a combined \$3,120) based on the Internal Revenue Code Section 213 table:

Age Eligible LTCI Premium Limits	
Age	2018 Limit Per Person
40 or under	\$420
41-50	\$780
51-60	\$1,560
61-70	\$4,160
71+	\$5,200

The tax savings could therefore be about \$1,154 (\$3,120 x 37%). When they turn 61 in 2019, the eligible LTCI premium deduction limit may be higher. But, let’s assume that it will still be \$4,160 per person (or a combined \$8,320 for both of them based on the 2018 limits). They can deduct the combined \$5,000 premium in full with a resulting tax savings of \$1,850 (\$5,000 x 37%). As a result of this deduction, the net cost of the LTCI plan after tax savings is essentially \$3,150.

An owner of a S Corporation might be able to have a higher dollar tax savings because their individual tax rate is higher than the C Corporation tax rate.

In addition to the advantage of deducting LTCI premiums, using a 10-year premium payment option might maximize this opportunity, and benefit the owner and employees by having the plan fully paid up before retirement.

LIFETIME LTCI PREMIUM PAYMENT (over the first 10 years)				
Estimated after-tax cost of plan				
Calendar Year	Ages	Paid Premiums	C Corporation	S Corporation
2018	60 / 60	\$5,000	\$3,950	\$3,846
2019	61 / 61	\$5,000	\$3,950	\$3,150
2020	62 / 62	\$5,000	\$3,950	\$3,150
2021	63 / 63	\$5,000	\$3,950	\$3,150
2022	64 / 64	\$5,000	\$3,950	\$3,150
2023	65 / 65	\$5,000	\$3,950	\$3,150
2024	66 / 66	\$5,000	\$3,950	\$3,150
2025	67 / 67	\$5,000	\$3,950	\$3,150
2026	68 / 68	\$5,000	\$3,950	\$3,150
2027	69 / 69	\$5,000	\$3,950	\$3,150
		\$50,000	\$39,500	\$32,196

10-YEAR LTCI PREMIUM PAYMENT				
Estimated after-tax cost of plan				
Calendar Year	Ages	Paid Premiums	C Corporation	S Corporation
2018	60 / 60	\$11,500	\$9,085	\$10,346
2019	61 / 61	\$11,500	\$9,085	\$8,422
2020	62 / 62	\$11,500	\$9,085	\$8,422
2021	63 / 63	\$11,500	\$9,085	\$8,422
2022	64 / 64	\$11,500	\$9,085	\$8,422
2023	65 / 65	\$11,500	\$9,085	\$8,422
2024	66 / 66	\$11,500	\$9,085	\$8,422
2025	67 / 67	\$11,500	\$9,085	\$8,422
2026	68 / 68	\$11,500	\$9,085	\$8,422
2027	69 / 69	\$11,500	\$9,085	\$8,422
		\$115,000	\$90,850	\$86,144

CONCLUSION

Tax Reform, now more than ever, represents a great opportunity to approach tax advisors and business owner clients. There are roughly 28 million small businesses in the US. The potential opportunity within your own network is greater than ever before.

Now is a great time to approach tax advisors! They've recently completed prior tax year filings and have time to listen to how you can help them and their clients. You can add value to them by educating them on tax savings they might not know are available.

Recently, I was speaking with someone whose CPA had not been utilizing the self-employed LTCI tax deduction on their own tax return! Don't let this happen to your clients or their advisors.

Become the go-to person in your community as a resource for everything related to long term care insurance planning. ■

Disclaimer: Every situation is unique, so always have your client consult their tax advisor. The views discussed in this article are those of the author, and not National Guardian Life (NGL), LifeCare Assurance, or CLTC.



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A Prospective Approach to Determining Allowable Rate Increases

By Kevin Kang, Ray Nelson and Aaron Wright

There have been notable shifts in the NAIC Model Regulations over the past two decades on Long-Term Care Insurance policy rate increases. Initially, the industry had both the initial premiums and rate increase premiums subjected to a minimum lifetime loss ratio of 60 percent (“60 percent Loss Ratio Method”). This was followed by the move to rate stabilization in 2000, which allowed for no minimum loss ratio at the time of initial premium filing, but called for the rate increase calculation to utilize loss ratios on original premium levels of 58 percent and an 85 percent loss ratio on the increased portion of the premium (“Rate Stability Method”). In 2014, the NAIC task force updated its Model Regulation (“2014 Model Reg”) to: a) require the use of the greater of 58 percent or the pricing loss ratio to apply to the original premium when calculating a rate increase, and b) limit the historical claims to be the lesser of the accumulated value of actual incurred claims and the accumulated value of historic expected claims.¹

Even in light of this regulatory framework, the road to rate increase approval is uncertain for insurers as regulators work to balance the regulations above with policyholder protection. This has prompted more regular and active discussions among states within the NAIC, many of which have not yet adopted the 2014 Model Reg. Their discussions focus on the various approaches that state regulators have taken in their review of rate increase filing requests. One approach that has recently gained traction is a prospective formula that the Texas Department of Insurance uses to compute an allowable rate increase for a block of long-term care insurance policies (“Prospective Method”).

Figure 1
Formula for the Prospective Method

$$\text{rate increase \%} = \frac{\Delta PV(\text{future incurred claims}) - \left(\frac{.58 + .85C}{1+C} \right) \Delta PV(\text{future earned premiums})}{.85 PV_{\text{current}}(\text{future earned premiums})} \quad 2$$



The Prospective Method is a forward-looking approach for currently active policyholders, excluding paid-up policies. Looking forward limits the premium increases to the policyholders that are expected to receive the excess future policy benefits, causing the need for the rate increase. Of course, the implications for different blocks will vary depending upon the block’s history and characteristics. For example, which model regulation was applicable to the block at the time the original rates were filed and approved? Did the company historically request the fully allowable rate increase amount? Did the regulator approve the full rate increase? As expected, the Prospective Method may yield rather different results from the current standards that look at a block’s lifetime experience to determine what is allowable. This article aims to explore these and other implications by studying the range of allowable rate increases under the various methods for a range of scenarios.

But before diving into the scenarios, let’s first consider the formula for the Prospective Method:

1. Δ indicates the change in present value (PV) due to the change in actuarial assumptions between the time of the last rate increase (or the original assumptions if there was no prior rate increase) and the current assumptions.
2. C is the cumulative percent rate increase to date. For example, if the current rate (prior to the proposed rate increase) is 50 percent higher than the rate at initial pricing, then $C = .5$.
3. The current subscript in the denominator indicates that the PV should be computed using current assumptions.

The formula above is meant for post-rate stabilized blocks and can be adjusted for pre-rate stabilized policies by replacing .58 with .6 and replacing .85 with .8.

SCENARIO TESTING

We now explore a sample of scenarios in order to better understand the implications of such a prospective method relative to the NAIC's different lifetime approaches. In particular, we consider a single cohort block priced to a 60 percent loss ratio to which we vary morbidity, mortality, and lapse rates.

Scenario 1

In our first scenario, we consider a rate increase scenario where the first 10 years of experience had lower policy terminations and higher morbidity than originally expected. The projected experience is expected to maintain the same level of historical deviation. Figure 1 shows the comparison of the allowable rate increase and lifetime loss ratios under the main NAIC Model Regs and Prospective Method.

The allowable rate increase (RINC) calculated by the Prospective Method is less than that under all three Model Reg Methods.

Figure 1
Summary of Results for Scenario 1

First Rate Increase	60% Loss Ratio Method	Rate Stability Method	2014 Model Reg Method	Prospective Method
Lifetime Loss Ratio (before RINC)	77.7%	77.7%	77.7%	77.7%
Allowable RINC	57.7%	45.3%	38.6%	38.1%
Lifetime Loss Ratio (after allowable RINC)	60.0%	63.1%	64.9%	65.0%

Figure 2
Summary of Results for Scenario 2

First Rate Increase with historical morbidity gains	60% Loss Ratio Method	Rate Stability Method	2014 Model Reg Method	Prospective Method
Lifetime Loss Ratio (before RINC)	66.9%	66.9%	66.9%	66.9%
Allowable RINC	22.5%	20.5%	15.9%	18.4%
Lifetime Loss Ratio (after allowable RINC)	60.0%	60.5%	61.9%	61.1%

This is largely driven by the fact that the Prospective Method is a forward-looking method. The first two methods—60 percent Loss Ratio and Rate Stability—do not distinguish between prior and future losses. And although the 2014 Model Reg has limitations on prior losses, differences in actual versus expected prior termination experience may impact future losses.

Even if observed historical morbidity was double that in the scenario above, the allowable rate increase for both the 2014 Model Reg and the Prospective Method would be unchanged. This is a result of the 2014 Model Reg having formulaic caps to limit the re-capture of past losses and the Prospective Method only looking at the projected future premiums and claims, and as such not recognizing past losses. In contrast, the allowable rate increase would go up to 73.7 percent for the 60 percent Loss Ratio Method and 56.6 percent for the Rate Stability Method.

Scenario 2

In Scenario 2, we consider a rate increase scenario in which there is favorable morbidity and adverse policy termination experience for the first 10 years. The projected morbidity is expected to be worse than pricing while the termination assumptions are assumed to remain slightly adverse to pricing expectations.

Under this scenario, the Prospective Method provides for a larger allowable rate increase than the 2014 Model Reg because the Prospective Method does not account for the early favorable morbidity, but instead focuses only on the projected period in relation to pricing expectations. We also observe that the 60 percent Loss Ratio Method and the Rate Stability Methods provide even larger allowable rate increases while recognizing the favorable historical morbidity due to the loss ratios utilized in their formulas and the projected worse morbidity.

Figure 3
Summary of Results for Scenario 3

Second Rate Increase following a partial rate increase	60% Loss Ratio Method	Rate Stability Method	2014 Model Reg Method	Prospective Method
Lifetime Loss Ratio (before current RINC)	81.1%	83.2%	84.5%	85.0%
Allowable RINC	156.4%	109.2%	89.7%	53.1%
Prospective Method Allowable RINC	48.8%	51.0%	52.5%	53.1%
Cumulative RINC from First RINC + Second Allowable RINC	230.4%	156.6%	126.4%	82.3%
Lifetime Loss Ratio (after allowable RINC)	60.0%	65.8%	68.5%	74.7%

Scenario 3

For Scenario 3, we continue from Scenario 1 but assume a partial approval of 50 percent of the full allowable rate increase was granted. Then for the next 10 years after this first rate increase, morbidity experience has deteriorated further and this pattern is expected to continue into the future, while the policy terminations continue as expected from the first rate increase. For this second round of rate increases, the approved amount is based on the full current allowable amount. Scenario 3 below shows the comparison.

Following the partial approvals under the various Model Regs, we see that the allowable rate increase under the Prospective Method is much less than under the other methods. This is largely driven by two implicit assumptions of the Prospective Method:

1. Looks only at future projected experience, and
2. Any previous rate increase is assumed to be exactly what the company needed.

In this scenario, the Prospective Method does not allow the company to recover the actuarially-allowed portion not

approved previously, regardless of whether the company only filed for a partial rate increase or the regulator didn't approve the full amount.

Scenario 4

To further hone in on some differences between the newer 2014 Model Reg and the Prospective Method, we calculated the allowable rate increases under these two methods for the following scenarios:

- For 10 years, morbidity assumptions come in as expected, historical termination rates are lower than expected and future termination rates are adjusted to be lower (Terminations-only)
- For 10 years, termination assumptions come in as expected, historical claims come in higher than expected, and future morbidity is adjusted to be higher (Morbidity-only)
- For 10 years, historical terminations and morbidity both come in worse than expected. However, the projected assumptions continue to be consistent with the original pricing assumptions. (Historical-only)

Figure 4
Summary of Results for Scenario 4

First Rate Increase 10 Years of Experience	Terminations-only Deviation	Morbidity-only Deviation	Historical-only Deviation
Lifetime Loss Ratio (before RINC)	66.0%	66.0%	66.0%
2014 Model Reg Allowable RINC	13.5%	13.0%	2.8%
Prospective Method Allowable RINC	12.9%	13.0%	0.0%



In both the terminations-only and historical-only scenarios, we see that the lower termination rates have a larger impact under the 2014 Model Reg Method. Because the Prospective Method is a forward-looking method, we see no rate increase under the scenario where future expectations are the same as pricing, even though historical experience deviated.

For the morbidity-only scenario, we see that the allowable is the same under both methods. This allowable rate increase amount is wholly a result of the future morbidity deviations.

SUMMARY

In summary, while the scenarios considered above are purely hypothetical and only include a single issue cohort, they illustrate the following about the Prospective Method:

- The Prospective Method is impacted by the company’s prior rate increase history. It doesn’t look back to see what the company should have received. This may cause concern for companies where the full, actuarially-allowed rate increase was not obtained or there were significant delays in obtaining an approval.

- While the Prospective Method prohibits the recoupment of past losses, it also does not have an offset for past gains. Because it is forward-looking in nature, the Prospective Method is not impacted by historical experience, whether it be adverse or positive.
- The Prospective Method generally produces allowable rate increases well below the 60 percent Loss Ratio Method and the original Rate Stability Method.
- The Prospective Method produces results in line with, but generally less than, the existing 2014 Model Reg.
- The Prospective Method should generally be appropriate for smaller/decreasing blocks in addition to larger blocks that haven’t materially run off because of its prospective nature and inclusion of only active premium-paying policies.

At the time of this writing, the industry along with the ACLI are working to suggest improvements to the Prospective Method to help make it more appropriate in more cases. One such improvement is the inclusion of a “Catch-up Provision” to account for cases where prior actuarially allowed rate increases may have only been partially approved or there were material delays in approval. ■



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ENDNOTES

- 1 We refer the reader to “Recouping Past LTC Losses” by D. Plumb and R. Eaton from the April 2017 issue of *Long-Term Care News* for more details.
- 2 AHIP Letter to the NAIC LTC Pricing Subgroup, June 21, 2017
Re: Recouping Past Losses in Long-Term Care Insurance



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