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New To LTC

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I began my actuarial career as an annuity modeler at an insurance company and journeyed into Long-Term Care (LTC) two years ago at Milliman. I then joined Ernst and Young, continuing to focus on various LTC assignments. With these three positions, I have gained an in-depth knowledge of different ways to model LTC cashflows, file for rate increases, develop assumptions, and financial reporting.

My first LTC modeling project was to help an LTC carrier convert its legacy claims cost model to a first principle approach. I have had opportunities to apply my modeling skills to various LTC advisory and audit projects, using different modeling platforms and employing various modeling approaches. Early on, I learned that LTC products are very complex as they offer wide ranges of protection options to insureds, such as inflationary riders, elimination periods, benefit periods, reimbursement types, coverage types, waiver of premium riders, etc. These protection options make LTC complex to model for the following reasons. Inflationary riders vary by compound or simple inflation and can be applied for various durations. Elimination periods are the length of time an insured must wait before claiming benefit payments. Insureds also have the options to select different benefit periods which define how long benefits will be received. Additionally, waiver of premium riders allows insureds to waive premium payments upon disability.

From an assumption perspective, LTC is a hybrid between life/annuity and health insurance as it involves morbidity risks in addition to mortality and lapse risks. First principle modeling breaks down mortality into active and disabled life mortality. Disabled life mortality or claim termination rates can be separated into recoveries and disabled deaths. Morbidity risks can be broken into incidence and utilization. Incidence refers to the frequency at which healthy insureds become disabled, while utilization is the amount of benefits an insured utilizes each month. I find it very challenging to quantify LTC model results due to the complex interactions among morbidity, mortality and lapse risks.

From a modeling methodology perspective, LTC modeling has evolved from a claims cost approach to a complex first principles approach. This is due to the increasing need for carriers to understand the changes in their liabilities. Claim cost modeling limits carriers' abilities to understand changes in their liabilities because it only tracks total lives and uses claim costs that contains morbidity assumptions. Therefore, it is difficult to attribute which assumptions are causing changes to carriers' liabilities. In a First principles models components of claim costs (e.g., claim incidence rates and claim termination rates) are input into the models separately to allow the tracking of number of new claims, ongoing claims and terminated claims; mortality can be split into active and disabled life components. Some models can even track the different care paths and transition among care paths. Learning the LTC First principle modeling enables me to acquire an in-depth understanding of every perspective of an actuarial model.

As a young actuary, LTC modeling and financial reporting are the two areas I have valued the most in my career so far. The complexity allowed me to gain strong technical skills and actuarial conceptual knowledge which apply to other insurance products. I continue to expand my knowledge into recent emerging products including Life/LTC combination and Annuity/LTC combination products. These products have gained popularity as consumers seek alternative private LTC insurance solutions. From an actuarial perspective, these products require the understanding of both life (or annuity) and LTC modeling concepts. All in all, I am very passionate about developing innovative solutions that allow model users to gain insights into their model results more efficiently. This is one area that I would like to continually develop throughout my career. ■

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