Caveats for Use of Long Term Care Experience Basic Tables

May 2017

Background and Scope

Towers Watson Delaware, Inc. was retained by the Society of Actuaries ("SOA") to assist in a multi-phased project with an objective of creating tables that represent the experience for long-term care ("LTC") insurance business, utilizing data gathered by the SOA from LTC carriers.

This memorandum is a supplement to the Long Term Care Experience Basic Table[1] ("Experience Table") that was published by the Society of Actuaries ("SOA") in April 2015 and revised in July 2015. Following the release of the Experience Table and the accompanying written report ("Report"), questions and comments were provided to the Society of Actuaries and/or authors regarding their usage. The primary purpose of this memorandum is to reinforce certain key caveats that were contained in the Report.

This report is considered a statement of actuarial opinion under the guidelines promulgated by the American Academy of Actuaries. Vincent Bodnar and Matthew Morton, the consulting actuaries contracted by Towers Watson who developed this report, are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the opinions contained herein.

Summary

We refer to "Intended Users" in this memorandum, which we define as experienced long term care ("LTC") actuaries with an understanding of the Report. Among other uses, examples of how the Experience Table may be used, subject to the caveats listed below labeled 1, 2, 3, 4, and 5, by an Intended User include:

- comparison of incidence rates, claim termination rates and benefit utilization from an insurance company's historical experience to those of the Experience Table as a point of reference or a benchmark;

- creation of a modified version of the Experience Table, using adjustment factors, to fit the specific historical experience of an individual block of LTC policies; and

- input for a projection model with calendar or policy durations that are outside of the exposure periods captured by the Experience Table.

In these or any usage, we note the following key caveats:

1. <u>Interdependence of all variables</u>. The Experience Table is comprised of a set of predictive model variables. It is important to note that, for each of the three components of the Experience Table (incidence, claim termination and benefit utilization), the model variables must be used as an entire set. Usage of a single variable or a portion of the variables is not appropriate because of the interdependent relationships between variables in the model and their effects.

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1. https://www.soa.org/experience-studies/2015/2000-2011-ltc-experience-basic-table-dev/
2. https://www.soa.org/experience-studies/2015/research-ltc-study-2000-11-aggregated/

2. <u>Historical nature of data behind the Experience Tables</u>. The Experience Table is derived from intercompany historical data and as demonstrated in the Report, fits very well with such historical data. Application of these models by Intended Users to other datasets should use caution to ensure appropriate judgment is used to align parameters, methodology and data consistency. Intended Users must use their own judgment when applying the Experience Table beyond the durational and calendar year exposure of the underlying data. Data was collected over the experience period of 2000-2011. Within the data collected, a small amount of data was collected beyond policy duration 25 and claim durations after 4 years.

    As described in the Report, the Experience Table was developed using generalized linear modeling. The Intended User is reminded that the term "predictive" as used here and in the Report describes the approach that was used to determine the relationship between policy characteristic variables and event observations in the historical data. The term is not meant to infer that the Experience Table will predict the future trends or patterns of the industry.

3. <u>Aggregation of data from participating companies</u>. The Experience Table was built to fit the aggregated data that was provided by the participating companies over the exposure period of the underlying data. Specific companies included or not included in the study may have observed different experience during this period for each component of morbidity. In addition, usage of the Experience Table may or may not be applicable to similar products like LTC riders on life insurance policies or potential product design changes in the future.

4. <u>Data limitations.</u> The Experience Table was built using the data provided by the participating companies. Certain data items were either not available or determined to be of insufficient quality. Examples of these data items include the degree of underwriting and sales distribution methods. These items were not consistent among companies and as a result, Intended Users should use caution in using the Experience Tables for comparison or benchmark analysis.

5. <u>Relationships within Experience Table.</u> The Experience Table was built based on the data provided and the resulting tables may contain relationships that are different than the Intended Users expectations. As described in the Report, one such relationship may be the impact on incidence rates from the benefit period selected at issue by the policyholder. The Intended Users may review the relationships of variables within the Experience Table and corresponding data included in the Aggregate Databases to explore those relationships further, if desired. As described above in Caveat #1, the Intended User must consider all variables.

Specific variations of these caveats and additional caveats are described in the following sections of this memorandum. Intended Users should consider all information contained in the Report and this memorandum before creating a modified version of the Experience Table.

Incidence

The Experience Table provides incidence rates in aggregate across sites of care. Users that require the total incidence rates to be split by site of care may use a proportional share of the total incidence by developing a situs mix assumption. Information from the aggregate databases[2] or other independent sources such as actual company experience may be used to develop this situs mix assumption. Users should note that the actual mix of claims may differ significantly by company driven by various factors including but not limited to elimination period differences, geographical location, etc. As a result, the information from the aggregate database for claim situs distribution may or may not be applicable to a particular company.

Within the Experience Table, a policy's minimum elimination period was identified to analyze the impact on incidence rate. Users should use caution as policies with mixed elimination periods (e.g. 60-day for facility care, 0-day for home care), may have different experience than policies with consistent elimination periods (e.g. 0 day for all sites of care). Users should carefully examine the data in the aggregate databases[2] and the Experience Table to determine if adjustments are required.

Underwriting methods, tools and protocols within the LTC industry vary among companies and have evolved over time. We note that the data collected was too inconsistent to allow for the creation of variables to allow for recognition of such variances. Future editions of the experience table may include a more robust collection of such data. The Experience Table aggregates the experience across all data so users should use caution if comparing to a particular company's experience data if underwriting protocols have changed over time.

Claim Termination

The claim termination rates are based on the original site of care. The Experience Table should be reviewed and used accordingly. Users should use caution if attempting to model claim site of care transitions using the Experience Table as that was not the intent.

Within the claim data, the reason for closure was provided by the participating company. The reasons include recovery, death and exhaustion. For the aggregate databases and the Experience Table, exhaustions were not considered terminations; however, exposure for those claims was included. The analyses conducted were reliant on identification of recovery or death. Users should analyze company experience to determine if the mix of terminations due to recoveries and deaths is similar to that in the study. Claim management practices, data coding, and plan design may all cause differences and modifications may be required.

Within the data collected, a small amount of data was collected beyond policy duration 25 and claim durations after 4 years. Intended Users must use their own judgment when considering experience beyond these points as limited information was available to develop the Experience Tables.

Benefit Utilization

The experience data for reimbursement claims was collected over the years 2000 to 2011. During the review of the data and the build of the Experience Table using predictive modeling, it was determined that calendar year is a predictive variable. This trend is likely driven by gradual cost of care changes over the experience period. Users of the Experience Table should utilize caution when extrapolating to calendar years beyond 2011. Future cost of care trends may be driven by a number of factors that are beyond the scope of this project. Considerations may include, but are not limited to, care costs, supply and demand of the providers, etc.

The maximum daily benefit of the claim is an important component of benefit utilization calculations. For the Experience Table, the maximum across all three sites of care was used to model as claimant may be able to switch sites of care within the unique claim definition of the study. Considerations for use of this Experience Table should include the different levels of benefits available to a particular policyholder. To the extent there are ancillary benefits, beyond reimbursable expenses for nursing Homes, assisted living facilities or home care, there may be additional utilization of care not considered in the Experience Table.

The Experience Table was based on dollar utilization of the claim. An analysis was conducted to review the data quality of the days of benefit used in the home care setting, but was not found to be consistently reliable. As a result, only actual benefits paid relative to dollars of benefits available were measured in the models.

About the Society of Actuaries

The Society of Actuaries (SOA), formed in 1949, is one of the largest actuarial professional organizations in the world dedicated to serving 24,000 actuarial members and the public in the United States, Canada and worldwide. In line with the SOA Vision Statement, actuaries act as business leaders who develop and use mathematical models to measure and manage risk in support of financial security for individuals, organizations and the public.

The SOA supports actuaries and advances knowledge through research and education. As part of its work, the SOA seeks to inform public policy development and public understanding through research. The SOA aspires to be a trusted source of objective, data-driven research and analysis with an actuarial perspective for its members, industry, policymakers and the public. This distinct perspective comes from the SOA as an association of actuaries, who have a rigorous formal education and direct experience as practitioners as they perform applied research. The SOA also welcomes the opportunity to partner with other organizations in our work where appropriate.

The SOA has a history of working with public policymakers and regulators in developing historical experience studies and projection techniques as well as individual reports on health care, retirement, and other topics. The SOA's research is intended to aid the work of policymakers and regulators and follow certain core principles:

Objectivity: The SOA's research informs and provides analysis that can be relied upon by other individuals or organizations involved in public policy discussions. The SOA does not take advocacy positions or lobby specific policy proposals.

Quality: The SOA aspires to the highest ethical and quality standards in all of its research and analysis. Our research process is overseen by experienced actuaries and non-actuaries from a range of industry sectors and organizations. A rigorous peer-review process ensures the quality and integrity of our work.

Relevance: The SOA provides timely research on public policy issues. Our research advances actuarial knowledge while providing critical insights on key policy issues, and thereby provides value to stakeholders and decision makers.

Quantification: The SOA leverages the diverse skill sets of actuaries to provide research and findings that are driven by the best available data and methods. Actuaries use detailed modeling to analyze financial risk and provide distinct insight and quantification. Further, actuarial standards require transparency and the disclosure of the assumptions and analytic approach underlying the work.

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