

*Fast Facts*

Long Term Care Experience Basic Table Development

SUMMARY

In early 2014, the Society of Actuaries (SOA) engaged Towers Watson to develop long-term care (LTC) experience tables that represent data gathered by the SOA from 22 LTC insurers for the period between January 1, 2000 and December 31, 2011.

This project was completed in three phases. Phase 1 assessed the quality of data submitted by the carriers. Phase 2 developed aggregate databases of experience results for each study category. Phase 3 drew on Phases 1 and 2 to produce basic rate tables. Notably, rather than using traditional table development methodologies, the team used predictive modeling to develop a “multiplicative model” to represent the basic table for each assumption. This may assist with interpreting experience data and developing LTC model assumptions, the authors noted.

HIGHLIGHTS

- Eight models were developed to assist LTC insurers in rate setting. The models were fit to the actual experience using the following measures: claim incidence (2 models); claim termination (4); and benefit utilization (2).
 - *Claim incidence* is a rate of claims per annual exposure.
 - *Claim termination* rate is the probability that an existing claim will close in a given month.
 - *Benefit utilization* is the amount of reimbursement relative to the maximum daily benefit, and serves as a key morbidity assumption for modeling LTC policies that reimburse claimants on actual incurred benefit amounts subject to a maximum daily benefit.
- After completing initial data review, the researchers loaded data from the combined incidence tables into Towers Watson’s proprietary Generalized Linear Modeling software, which was used for these phases: univariate analysis, multivariate analysis and model validation to develop a predictive model. Section 4 of the report details this process using the example of the claims incidence model for total exposure. The procedure used was similar for the other models.
- The report is intended to provide certain actuarial information and analyses that may assist a qualified professional in interpreting experience data and developing model assumptions for LTC.
- Authors’ caveats: The models may, or may not, be applicable to specific companies, or for use with similar products like LTC riders or life insurance policies or potential future product design changes. Also, companies, whether included in the study or not, may have different morbidity experience.

LINK TO FULL REPORT

2000-2011 Long-Term Care Experience Basic Table Development Report
(Revised 7/31/2015)

<https://www.soa.org/globalassets/assets/files/research/exp-study/2015-ltc-exp-basic-table-report.pdf>

METHODOLOGY

- Timeframe: 2000 through 2011 (data collection). Model development done in 2014.
- Research performed in three phases as follows:
 - *Phase 1*: Assessed the quality of data submitted to the SOA by the 22 participating LTC carriers, to determine suitability of the data to be used to support creation of the desired experience tables.
 - *Phase 2*: Developed aggregate databases of LTC experience results for each study category identified in Phase 1.
 - *Phase 3*: Produced basic rate tables for LTC claim incidence, claim termination and benefit utilization, based on findings in Phases 1 and 2, using a “multiplicative model” approach.

REPORT SPECS

- Published: April 2015, revised July 2015
- Pages: 32 plus 3 supporting documents
- Access: Downloadable pdf
- Research Sponsor: The Society of Actuaries (SOA)
- Author(s): Vincent Bodnar, ASA, MAAA, chief actuary, LTCG; Ben Williams, senior consultant, Towers Watson; Matt Morton, FSA, MAAA, senior consulting actuary, LTCG; and Tim Wood, FSA, MAAA, senior consultant, Towers Watson
- The main report includes background and scope, basic tables, predictive modeling approach, reliances and limitations, 3 appendices, 10 charts, and 8 tables. The 3 sets of supporting materials include: Incidence Models, Termination Models (Revised 7/31/2015), and Utilization Models.
- The 2015 update adds a brief commentary to Appendix A as well as revised termination models.



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<https://www.soa.org/globalassets/assets/files/static-pages/sections/long-term-care/ltc-pricing-project.pdf>

Measuring Long-Term Care Insurance Incidence Rates Over Time

<https://www.soa.org/globalassets/assets/files/resources/research-report/2018/ltc-incidence-rates.pdf>

2000-2011 Long-Term Care Aggregated Databases

<https://www.soa.org/resources/exp-study-2000-11-aggregated/>



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