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Long-Term Care Intercompany Experience Study - Aggregate Database 2000-2016 Report

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AUTHORS Long-Term Care Experience Committee

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Executive Summary

In May of 2018, the SOA requested updated long-term care policy and claim experience data from companies for the 17-year period from 2000 through 2016 and received data files from 18 companies, representing 80% of all 2016 long-term care earned premium. These data were used to develop the Aggregate Database that is the subject for this report. The prior Society of Actuaries (SOA) Long-Term Care (LTC) Intercompany Study experience is based on contributing companies' experience during the 12-year period from 2000 through 2011.

After submission, the data was validated and reviewed by MIB with assistance from the SOA and Long-Term Care Experience Committee (LTCEC). Data resubmissions were requested where needed and the data was finalized. After validation, aggregate databases of experience results were created.

This report details the method taken to develop the aggregate databases. It contains definitions for each of the data elements in these databases.

The aggregate data set consists of two data files, (1) the claim incidence file and (2) the claim termination file. These files were used to determine claim incidence and claim termination rates, respectively. These aggregated files are suitable for constructing pivot tables and for analysis within a Business Intelligence tool.

Because long-term care insurance is a HIPAA-covered line of business, data that is released to the public is subject to constraints on its level of granularity to ensure compliance. These constraints are detailed in Section 1.

Section 1: Data File Limitations

Long-term care insurance is a HIPAA-covered line of business. The contributing insurance companies are HIPAA-covered entities which have disclosed requested policy data for the performance of this study.

The data files have the following HIPAA data constraints:

1. HIPAA Safe Harbor Rules were applied to the aggregate data set.
    a. For policy dates, including dates of incidence and termination, only the year is available.
    b. All data for attained ages 90 and above is aggregated.
2. In order to ensure that any single individual's policy is not disclosed, records with an exposure of one or less are aggregated.

In order to submit seriatim HIPAA-covered policy-level data to an outside data vendor, each contributor was required to sign a Business Associate Agreement (BAA). The BAA required that no individual policy-level data be disclosed to the SOA for reporting purposes. This was interpreted by the data vendor to be any policy duration with exposure less than or equal to one. When the exposure is less than or equal to one, it is not guaranteed that the field has more than one policy.

To create the data sets to meet this BAA requirement, all records that had exposure of one or less were merged with dimensions set to "Unknown." This resulted in some records, and even dimensions, not being useable for experience purposes. This also resulted in the need to group dimensions more than they otherwise might have needed to be in order to avoid situations with very low exposures.

Even considering these data limitations, several key fields in each database are populated for nearly all records, as listed below:

Claim Incidence Database:

- Coverage Type Bucket
- Gender
- Policy Year
- Premium Class
- Tax Qualification Status
- Underwriting Type

Claim Termination:

- Claim Duration
- Claim Type
- Gender
- Incurred Year

Section 2: Claim Incidence

The probability of a policyholder incurring a claim is referred to as claim incidence. This is a key morbidity assumption for long-term care insurance modeling, which is measured from new claim counts and exposure life years.

The aggregate claim incidence file was based on the experience of 61,323,281 units of total exposure during the study period 2000 through 2016. There were 620,591 claims during the period. The overall claim incidence rate was 1.012%. The database had 2,089,323 records.

The data for all 18 participating companies were included in the aggregated claim incidence database.

2.1 CALCULATIONS

The exposures followed the Balducci methodology where, in the year of incurral of the event under study, a full year of exposure is assigned. In the case of claim incidence, a full year of exposure is assigned to the policy year in which a claim occurred, and a partial year of exposure is assigned in the policy year when lapse or death occurred.

The claim incidence rate is calculated as the number of claims divided by exposure. Two measures of exposure were developed: (1) a total lives basis and (2) an active lives basis.

- Total lives exposure is calculated as the number of days during the exposure period (i.e., January 1, 2000 to December 31, 2016) between the policy effective date and termination date. For total lives exposure, there is no adjustment for the time on claim.
- Active lives exposure is calculated as the total lives exposure reduced for any time on claim, if applicable.

The claim count for each policy was provided within the policy table received from each participating company. Any claims that started prior to the exposure point were removed from the claim count as the incidence rate is intended to measure the probability of a new claim occurring. For policies identified with more than one claim, aggregation of claims occurred when service dates overlapped or when the claims were within six months of each other. This six-month test was applied to each of the studies to ensure a common definition of a unique claim.

2.2 DATA DEFINITIONS

The claim incidence aggregate database consists of 24 dimension fields and six measure fields. Definitions of the input fields can be found in the ***2018 LTC Data Request*** document.

Table 1
CLAIM INCIDENCE DATA DEFINITIONS

Item #	Type	Type	Input Field #	Grouping
1	Group Indicator	Dimension	9	Group = 06, 07, 08, 10, 12 Individual = 00, 01, 02, 03, 04, 05, 09, 11
2	Gender	Dimension	8	Female = 01 Male = 00, 02
3	Issue Age Bucket	Dimension		10 Groups: 0-49, 50-54, 55-59, . . ., 85-89, 90
4	Incurred Age	Dimension		10 Groups: 0-49, 50-54, 55-59, . . ., 85-89, 90+
5	Issue Year	Dimension		10 Groups: < 1991, 1991-1993, 1994-1996, 1997-1999, 2000-2002, 2003-2005, 2006-2008, 2009-2011, 2012-2014, 2015-2016
6	Policy Year	Dimension		1-3 years 4-6 years 7-9 years 10-12 years 13-15 years 15+ years

Item #	Type	Type	Input Field #	Grouping
7	Marital Status	Dimension	82	Married = 01 Single = 02
8	Premium Class	Dimension	77	Preferred = 02 Standard = 00, 01 Substandard = 03
9	Underwriting Type	Dimension	19	Full underwriting = 01, 02, 03, 04 Other = Else
10	Coverage Type Bucket	Dimension	26	Comprehensive = 06 Other = 00, 01, 02, 03, 04, 05, 07
11	Tax Qualification Status	Dimension	10	Non-tax-qualified = 02, 03 Tax-qualified = 01
12	Inflation Rider	Dimension	61	GPO = 02 Inflation protection = 03, 04, 05, 06, 07 No inflation protection = 01 Unknown = 00
13	Rate Increase Flag	Dimension	90	No = 00, 02 Yes = 01
14	Restoration of Benefits	Dimension	36	No = 00, 02 Yes = 01
15	NH Orig Daily Ben Bucket	Dimension	38	< 100 100-199 200+ Unknown
16	ALF Orig Daily Ben Bucket	Dimension	44	< 100 100-199 200+ Unknown
17	HHC Orig Daily Ben Bucket	Dimension	50	< 100 100-199 200+ Unknown
18	NH Ben Period Bucket	Dimension		< 3 years 3-4 years 5-9 years 10+ years Unlimited Unknown
19	ALF Ben Period Bucket	Dimension		< 3 years 3-4 years 5-9 years 10+ years Unlimited Unknown
20	HHC Ben Period Bucket	Dimension		< 3 years 3-4 years 5-9 years 10+ years Unlimited Unknown
21	NH EP Bucket	Dimension	39	0 (EP day = 0) 20 (1-29) 30 (30-89) 90 (90-179) 180 (180+)
22	ALF EP Bucket	Dimension	45	0 (EP day = 0) 20 (1-29) 30 (30-89) 90 (90-179) 180 (180+)

Item #	Type	Type	Input Field #	Grouping
23	HHC EP Bucket	Dimension	51	0 (EP day = 0) 20 (1-29) 30 (30-89) 90 (90-179) 180 (180+)
24	Region	Dimension	81	01: Mid-West 02: Northeast 03: South 04: West 05: Other 06: Unknown
25	Total Exposure	Measure		
26	Active Exposure	Measure		
27	Claim Count	Measure		
28	Count NH	Measure		
29	Count ALF	Measure		
30	Count HHC	Measure		
31	Count Unknown	Measure		

Section 3: Claim Termination

The claim termination rate is the probability that an open incurred claim will either terminate or close. The reason a claim terminates is generally from the death or recovery of the claimant. This is another key morbidity assumption for long-term care insurance modeling and pricing.

The aggregate claim termination file was based on experience of 10,948,710 in total exposure during the study period 2000 through 2016. There were 349,110 terminations and 233,366 deaths during the period. The overall claim termination rate was 3.189% and the overall claim mortality rate was 2.131%. The database had 627,190 records.

The data for 15 of the 18 participating companies were included in the aggregated claim termination database. Three companies' data were excluded because there was a lack of necessary information to calculate exposure or assign a claim termination reason.

3.1 CALCULATIONS

The development of claim termination rates relies on data received in the claim payment file from each participating company, like claim incurred date, service dates, and claim end date. A list of unique claims was identified based on company code, policy number coverage identifier, and claim incurred date. If a policy had multiple claims separated by six months or less, these were combined into a single claim in the experience study for consistency with the claim incidence study.

Due to inconsistencies in how claim incurred date was defined in the data received from each participating company, a claim incurred date was assigned to all unique claims equal to the earliest service date less the elimination period. This assignment ensures consistency across all the data gathered.

A total claim termination rate was provided, as well as a breakdown between recoveries and deaths. The split between claim recoveries and deaths was reviewed at a high level for reasonableness, but generally relied on the coding of each participating company. Claim exposure is measured from the time of minimum service date to the maximum service date. Exposure is not considered during the elimination period.

Note that claimants with benefit exhaustions were not included in the termination counts, but these claims were included in the exposure calculations until the point of exhaustion.

3.2 DATA DEFINITIONS

The claim incidence aggregate database consists of seven dimension fields and six measure fields. Definitions of the input fields can be found in the ***2018 LTC Data Request*** document.

Table 2
CLAIM TERMINATION DATA DEFINITIONS

Item #	Type	Type	Input Field #	Grouping
1	Gender	Dimension	9	Female = 01 Male = 00, 02
2	Incurred Age	Dimension		10 Groups: 0-49, 50-54, 55-59, . . ., 85-89, 90+
3	Incurred Year	Dimension		9 Groups: < 2001, 2001-2002, 2003-2004, 2005-2006, 2007-2008, 2009-2010, 2011-2012, 2013-2014, 2015-2016
4	Claim Type	Dimension	23	ALF = 02 HCC = 03 NH = 01 Other = 00, 04, 05, 06
5	Region	Dimension	15	01: Mid-West 02: Northeast 03: South 04: West 05: Other 06: Unknown
6	Diagnosis Category	Dimension	36	02: Arthritis 03: Cancer 04: Circulatory 05: Injury 06: Nervous System 07: Stroke 08: Other Unknown
7	Claim Duration	Dimension		Monthly
8	Exposure	Measure		
9	Terminations	Measure	19	
10	Deaths	Measure	19	
11	Recovery	Measure	19	
12	Benefit Expiry	Measure	19	
13	Other Terminations	Measure	19	

Section 4: Reliances

In developing the aggregated databases, the SOA relied upon

- MIB validation and data checks as the data vendor
- LTCEC review
- MIB exposure, incidence, and termination calculations

Section 5: Acknowledgements

The SOA would like to thank the members of the LTCEC and SOA staff for their work on this study.

Long-Term Care Experience Committee

Barry M. Koklefsky, FSA, MAAA, FCIA (Chair)
Siva Desai, FSA, MAAA (Vice-Chair)
Rhonda Ahrens, FSA, MAAA
Fred Andersen, FSA, MAAA
Laurie Fede, FSA, MAAA
Mike Krohn, FSA, CERA, MAAA
Perry Kupferman, FSA, MAAA
Matthew Parent, FSA, MAAA
Jon Prince, FSA, MAAA
Marianne Purushotham, FSA, MAAA
Steve Schoonveld, FSA, MAAA
Maureen Shaughnessy, FSA, MAAA
Bruce Stahl, ASA, MAAA
Joshua Weber, FSA, MAAA
Perry Wiseblatt, FSA
Bob Yee, FSA, MAAA

At the Society of Actuaries:

Pete Miller, ASA, MAAA, SOA Experience Study Actuary
Erika Schulty, SOA Research Associate

Section 6: List of Participating Companies

Ability Resources

Allianz Life

Bankers Life

Berkshire Life

Fortis

Genworth Financial

John Hancock

Knights of Columbus

Lincoln Benefit Life

MassMutual

MetLife

Mutual of Omaha

New York Life

Northwestern Mutual Life

Senior Health Insurance Company of Pennsylvania

Thrivent Financial

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Society of Actuaries
475 N. Martingale Road, Suite 600
Schaumburg, Illinois 60173
www.SOA.org