

# U.S. Individual Disability Income Persistency

A Joint Study Sponsored by the  
Society of Actuaries and LIMRA





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# Study Overview

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This report presents results of individual disability income lapse experience between observation years 2007 and 2015. This study was conducted jointly by LIMRA and the Society of Actuaries (SOA) and was based on data provided by 10 individual disability income insurance writers. This study was done concurrently with the SOA Individual Disability Experience Committee's analysis of claim morbidity, however the two studies are independent.

This report examines lapse experience on individual disability income insurance products by various policyholder and product factors. The study can be used for industry benchmarking as well as for background information for product development and planning purposes.

The data contained in this report can help companies identify factors that impact individual disability income insurance persistency, as well as to validate lapse assumptions. While the study contributors represent a sizable portion of the individual disability income insurance industry, they do not represent the entire industry and results by company may vary. These results should be used only as a guide or supplement to the experience of individual carriers. Companies should carefully consider underlying differences such as distribution, product design, product development, and marketing strategy between their organization and the contributing companies.

A Tableau database containing detailed lapse rate information is available on both the LIMRA and SOA websites ([www.limra.com](http://www.limra.com) and [www.soa.org](http://www.soa.org)).

This report is presented in three sections. The first section examines lapse experience on all individual disability income products. The second and third sections examine lapse experience separately by renewability type, with experience for non-cancelable policies in section two and experience for guaranteed renewable policies in section three.

## ACKNOWLEDGEMENTS

The Society of Actuaries and LIMRA would like to extend our thanks to all participating companies for making this project a success. Without your support, such research projects would not be possible. We would also like to thank Pete Miller and Erika Schultzy from the SOA for their leadership and coordination of the project.

## CAVEAT AND DISCLAIMER

This study contains information from a variety of sources. It may or may not reflect the experience of any individual company.

The underlying data was provided by each contributing company. Neither the Society of Actuaries nor LIMRA have reviewed the data submitted for accuracy or completeness, other than a high-level review for general reasonableness.

The study is for informational purposes only and should not be construed as professional or financial advice.

The sponsors of this report do not recommend or endorse any particular use of the information provided in this study and make no warranty, express or implied, or representation whatsoever and assume no liability in connection with the use or misuse of this study.

# Data Description

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Data supporting the results of this study were collected jointly with the Society of Actuaries. The raw data used were the same as the data used by the Individual Disability Income Experience Committee (IDEC) to study updated morbidity factors. The complete data call format can be found in Appendix A.

The observation years in the study were calendar years 2007 to 2015. Contributing companies were asked to provide information on their entire in-force block at the policy level. All contributions were converted to policy year for analysis and any partial policy years were dropped. 2007 to 2015 calendar-year data combine to create a total of eight possible complete policy years (durations) for a single policy in this anniversary-to-anniversary study.

It should be noted that not all contributing companies were able to provide data for all the policies and product factors requested. Lapse rate data is not reported for any cell for which there are fewer than three companies' data, less than 1,000 policies exposed, or any one company represents more than approximately 50 percent of the policy count exposure. The lapse rates shown are based on 100 percent of policies submitted, except in cases where a company's volume of business was so large, or its experience was so different from that of other contributors, such that overall industry results would be unduly skewed.

During data validation we made an effort with each carrier to distinguish voluntary lapses from policy expiries and deaths, where possible. However, we believe that the increasing lapse rate trend in the ultimate durations seen across most lapse rate breakdowns is at least partially attributable to unidentified policy expiries.

Also, based on information from individual companies, the extent to which deaths are able to be distinguished from voluntary lapses varies by company. The termination split between deaths and voluntary lapses at some companies is felt to be very good as checks against the Social Security Master Death File are performed regularly, while at other companies the identification of deaths is less rigorous. For one company all non-expiry terminations were coded as lapses. As such, within the industry data as a whole, there are some unreported deaths coded as lapses.

Lapse rate results are shown by both policy count and benefit amount in this report. The benefit amount weighting is usually the monthly indemnity amount multiplied by 12, or the lump sum benefit amount where applicable.

## DATA VALIDATION

A series of data reasonableness checks were applied to the raw data submissions from each company. Examples of checks included identification of missing or invalid field values, and logic checks for consistency among fields such as ensuring termination dates were given if a policy is identified as not in force. The distribution of business by company for various data fields was also examined to ensure that the distributions were reasonable. Questions arising from these checks were sent to the participating companies individually, and in some cases resulted in data corrections.

Initial calculated lapse rates were then provided to each contributing company and they were asked to review and report any discrepancies between those and the results of their own experience studies. Ultimately, each company signed off that its study results were representative of its understanding of its own experience.

Data for all companies was then combined to create the industry data set. Unless otherwise noted, for each type of renewal provision (non-cancelable, guaranteed renewable, and total) total policy count exposure is examined at the company level to ensure that reported experience is not overly affected by one or more large participant blocks. The definition of “large” was set by the SOA Individual Disability Experience Committee at 40 percent and no company represented more than 40 percent of the total policy count exposure for each renewal provision type.

## EXPOSURE SUMMARY

Table 1 summarizes the policy count exposure by issue year within guaranteed renewable and non-cancelable plans respectively. A larger percentage of the overall guaranteed renewable exposure is on more recently issued policies compared to non-cancelable policies. For example, approximately one third of the guaranteed renewable exposure is on policies issued after 2006, compared to 22 percent for non-cancelable policies.

**Table 1 — Policy Count Exposure Distribution by Issue Year and Renewal Provision**

Issue Year	Guaranteed Renewable	Non-Cancelable
Prior to 1984	5.1%	5.3%
1984 – 1987	3.9%	7.3%
1988 – 1991	6.3%	12.7%
1992 – 1995	7.3%	15.3%
1996 – 1999	14.5%	11.1%
2000 – 2003	15.1%	14.3%
2004 – 2006	14.0%	12.8%
2007	6.3%	4.8%
2008	5.7%	4.3%
2009	4.9%	3.2%
2010	4.6%	2.7%
2011	4.3%	2.4%
2012	3.6%	1.8%
2013	2.8%	1.3%
2014	1.6%	0.7%
	<b>100%</b>	<b>100%</b>

Approximately 14 percent of the total DI policy count exposure is on guaranteed renewable policies, excluding Other and Unknown renewability types (Table 2). Considering the pattern of exposure by issue year, guaranteed renewable plans constitute a larger percentage of the total exposure in the early policy years relative to the later policy years.

Non-cancelable policies have a larger percentage of non-smokers and medical occupations than guaranteed renewable plans. The gender distribution is relatively similar between the two renewability provisions.

**Table 2 — Policy Count Exposure Data Characteristics**

	<b>Guaranteed Renewable</b>	<b>Non-Cancelable</b>
Overall policy exposure*	14%	86%
Policy exposure in policy years 1 – 10*	18%	82%
Policy exposure in policy years 11 – 20*	12%	88%
Total number of companies	7	10
Average issue age	37	36
Average attained age	47	49
Percent male in policy exposure**	74%	75%
Percent non-smoker in policy exposure**	86%	95%
Percent medical occupations**	8%	32%

\* Excluding other or unknown renewability plans

\*\* Where known

# Highlights

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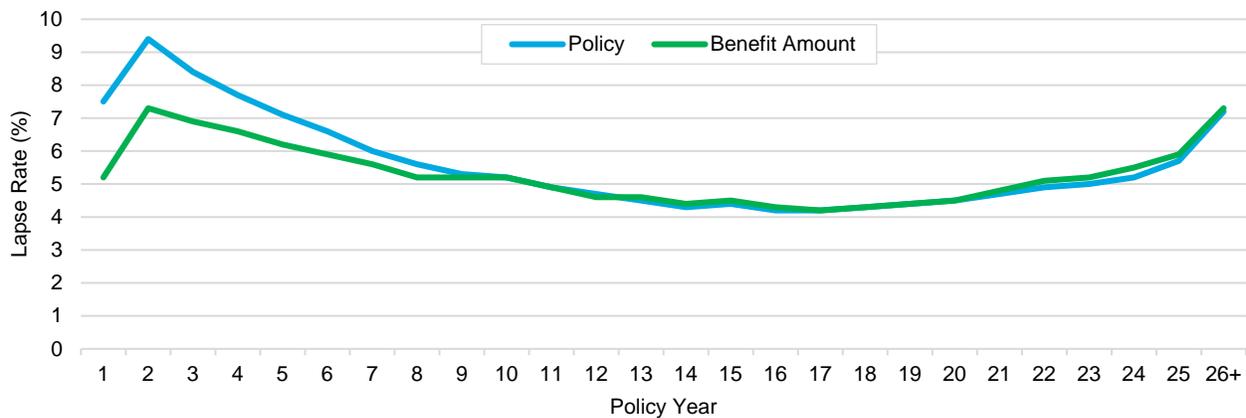
- The overall weighted average policy count lapse rate for all disability income products is 6.0 percent. After an initial increase in policy year two, lapse rates are generally decreasing by policy year until around policy year 18 (Figure 1).
- The increase in later policy year lapse rates appears to be driven by increasing attained age lapse rates as normal retirement age draws near (Figure 2).
- Ten companies submitted data on non-cancelable plans accounting for 85 percent of policy exposure. Seven companies submitted data on guaranteed renewable plans accounting for 14 percent of exposure. Four companies submitted data on other or unknown renewability plans, accounting for the remaining 1 percent of exposure. Except when all business is analyzed in total, other or unknown renewability plans are not included in any analyses.
- Non-cancelable policy count lapse rates are typically lower than guaranteed renewable lapse rates across all policy years (Figure 3). This is partly due to distribution of business differences between the two renewability provisions, with guaranteed renewable policies having a larger weighting towards business with higher lapse rates (i.e., smokers, non-medical occupations, etc.).
- While the level of policy count lapse rates vary, lapse rate patterns are generally similar by gender, smoking status, benefit period, occupation grouping, premium mode, and benefit amount, for both non-cancelable and guaranteed renewable plans.
- For non-cancelable plans in early policy years, employer-sponsored disability income policies have a noticeably higher policy count lapse rate than policies sold in the individual market. Policies sold to associations have the lowest policy count lapse rate in almost all policy years (Figure 11).
- For guaranteed renewable plans, policy count lapse rates on fully underwritten, substandard policies are lower than lapse rates on fully underwritten, standard policies in the early policy years (Figure 30). This pattern of lower lapse rates for substandard underwriting classes is a bit unique and opposite of the experience on both non-cancelable policies as well as life insurance plans.
- It appears that early policy year lapse rates for both non-cancelable and guaranteed renewable policies were higher in the years during the economic recession than the years following the recession (Figures 22 and 35).

# All Disability Income Plans Lapse Rates

Figure 1 shows lapse rates by policy and benefit amount for all individual disability income plans combined. Lapse rates spike in policy year two and then decrease by duration down to 4.2 percent in policy year 17, before beginning to slowly grade up. The spike seen in policy years 26+ is most likely a combination of the continuation of the upward trend in later duration lapse rates as retirement draws closer, along with misreporting of some policy expiries as lapses.

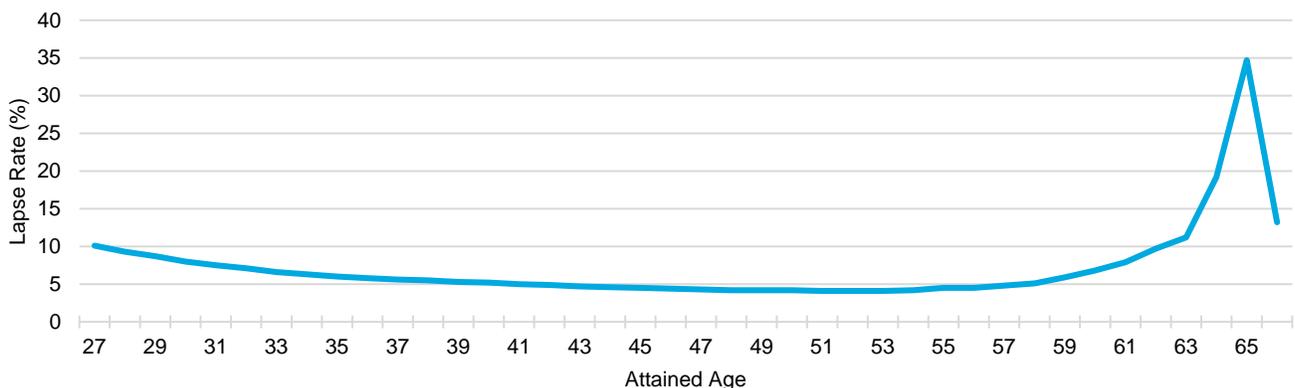
Policy count lapse rates start higher than benefit amount lapse rates, but become similar by policy year 10.

**Figure 1 — Overall Policy Count and Benefit Amount Lapse Rates**



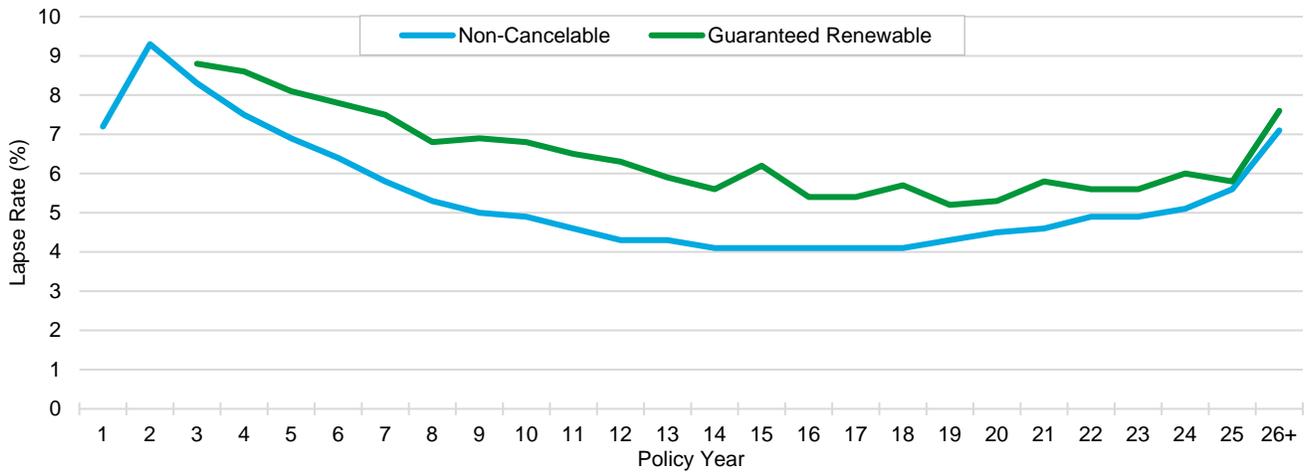
An examination of policy lapse rates by attained age (Figure 2), shows higher lapse rates at the younger attained ages, grading down to 4.1 percent by attained age 53, and then grading higher as retirement ages approach. The dramatic spike in lapse rates at attained age 65, is most likely due, at least in part, to inaccurate coding of policy expiries as lapses.

**Figure 2 — Overall Policy Count Lapse Rates by Attained Age**



While the pattern of lapse rates is similar, non-cancelable lapse rates are lower than guaranteed renewable lapse rates (Figure 3). Higher lapse rates for guaranteed renewable plans are at least partly due to differing mix of business, as they have a larger proportion of smokers and non-medical occupations (who have higher lapse rates).

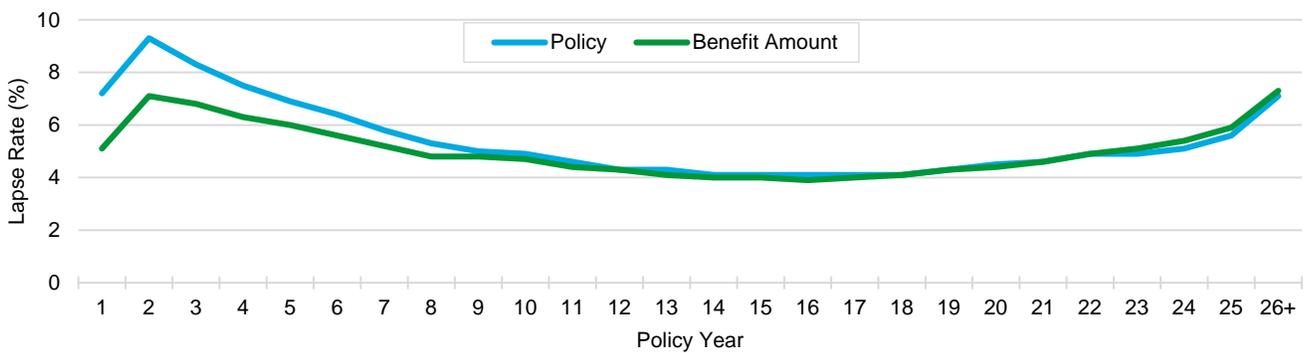
**Figure 3 — Overall Policy Count Lapse Rates by Type of Renewal Provision**



# Non-Cancelable Lapse Rates

This section breaks out lapse experience on non-cancelable policies by various policy factors. Approximately 85 percent of the total study exposure is on non-cancelable policies. That exposure increases to 86 percent when excluding unknown and other renewability policies. Since lapse rates on non-cancelable plans are lower than guaranteed renewable plans, non-cancelable lapse rates are slightly lower than overall lapse rates. The pattern of lapse rates is very similar to the overall total however (Figure 4). All 10 contributing companies submitted data for non-cancelable plans.

**Figure 4 — Non-Cancelable Policy Count and Benefit Amount Lapse Rates**

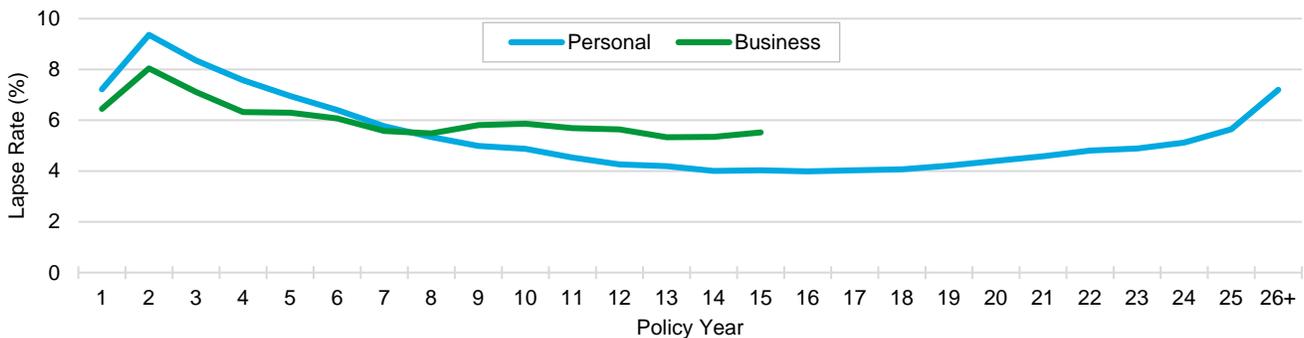


## BY TYPE OF POLICY

Disability policies sold as business insurance (business overhead, key person, and buy-out plans), account for only about 5 percent of the non-cancelable policy exposure. The remaining 95 percent of exposure is on personal disability plans.

Lapse rates for business policies start lower than personal policies but the pattern is much flatter in the later policy years compared to the decreasing pattern of personal policies. As such, lapse rates cross at policy year eight and business policies begin to have a higher lapse rate than personal policies (Figure 5).

**Figure 5 — Non-Cancelable Policy Count Lapse Rates by Type of Policy**

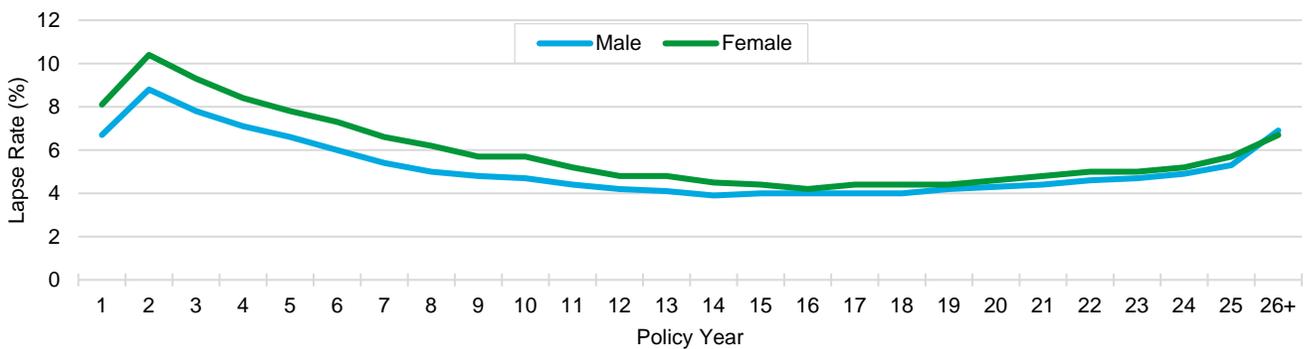


## BY GENDER

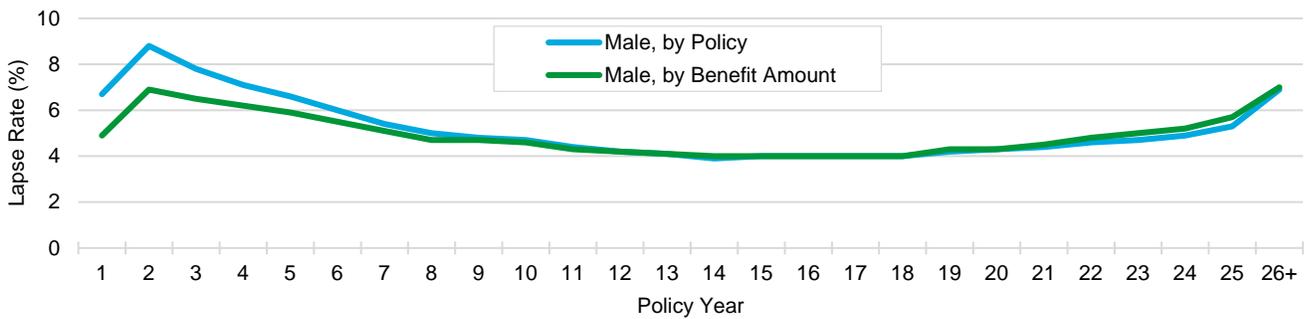
Disability income policies are still predominately sold to males, however there is a pattern of increasing female exposure in the earlier policy years relative to later policy years. In policy year one, 32 percent of non-cancelable policy exposure is on females compared to under 20 percent in policy years 25 and later.

Female policy lapse rates are higher than male policy lapse rates in almost all policy years (Figure 6). The pattern of lapse rates by policy count versus by amount varies by gender. For males, larger-than-average policies lapse in the later durations, driving up lapse rates by benefit amount relative to policy count (Figure 7). For females, smaller-than-average policies tend to lapse in all policy years, causing benefit amount lapse rates to be less than policy lapse rates (Figure 8).

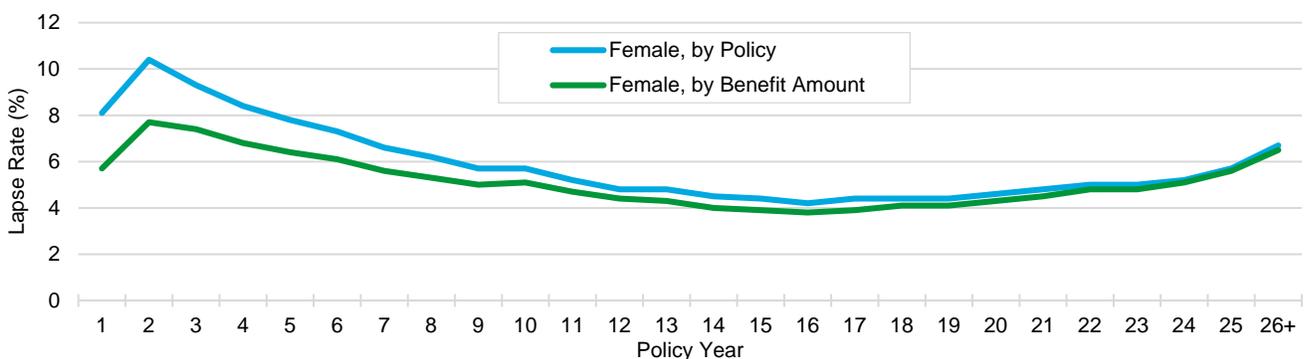
**Figure 6 — Non-Cancelable Policy Count Lapse Rates by Gender**



**Figure 7 — Non-Cancelable Lapse Rates for Males by Policy Count and Benefit Amount**



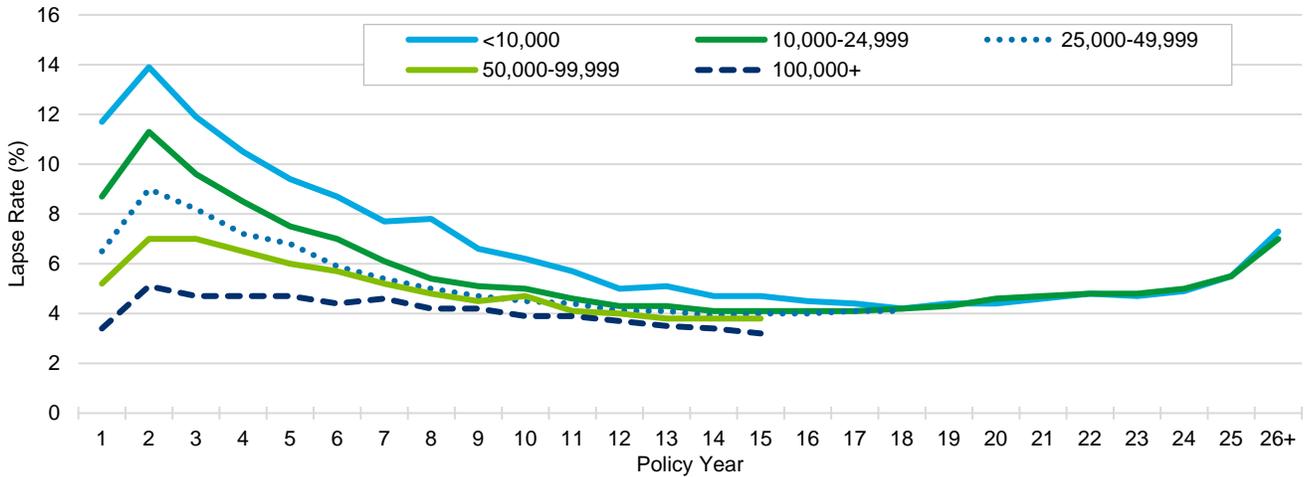
**Figure 8 — Non-Cancelable Lapse Rates for Females by Policy Count and Benefit Amount**



## BY BENEFIT AMOUNT BANDS

In the early policy years, there is a clear pattern of higher lapse rates for lower benefit amounts on personal policies (Figure 9). While lapse rate experience on the middle benefit bands converge after policy year 10, experience on the lowest and highest bands have not converged by policy year 15. Almost 15 percent of the exposure is in the less than \$10,000 band, while about 6 percent of the exposure is in the \$100,000 or greater band. This pattern of lower lapse rates for higher benefit amounts is also seen in life insurance.

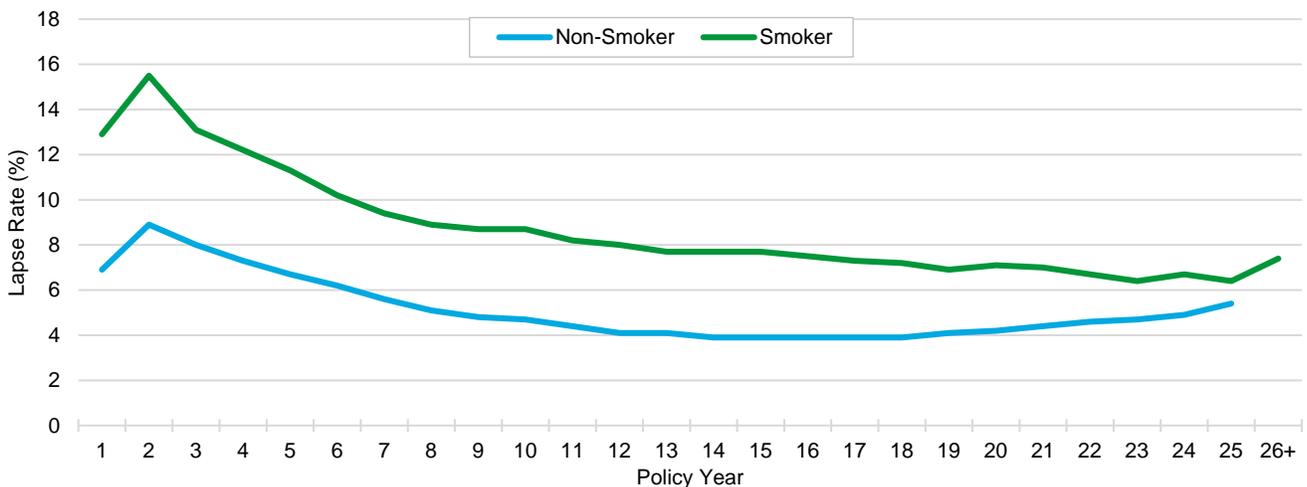
**Figure 9 — Non-Cancelable Policy Count Lapse Rates by Benefit Amount Bands, Personal Policies Only**



## BY SMOKING STATUS

Non-smoker policy lapse rates by policy count are consistently lower than smoker policy lapse rates, more dramatically in the early policy years (Figure 10). While not shown in the report, this relationship is present on benefit amount lapse rates as well. Where smoker status is known, approximately 95 percent of the non-cancelable exposure is on non-smoker policies.

**Figure 10 — Non-Cancelable Policy Count Lapse Rates by Smoking Status**

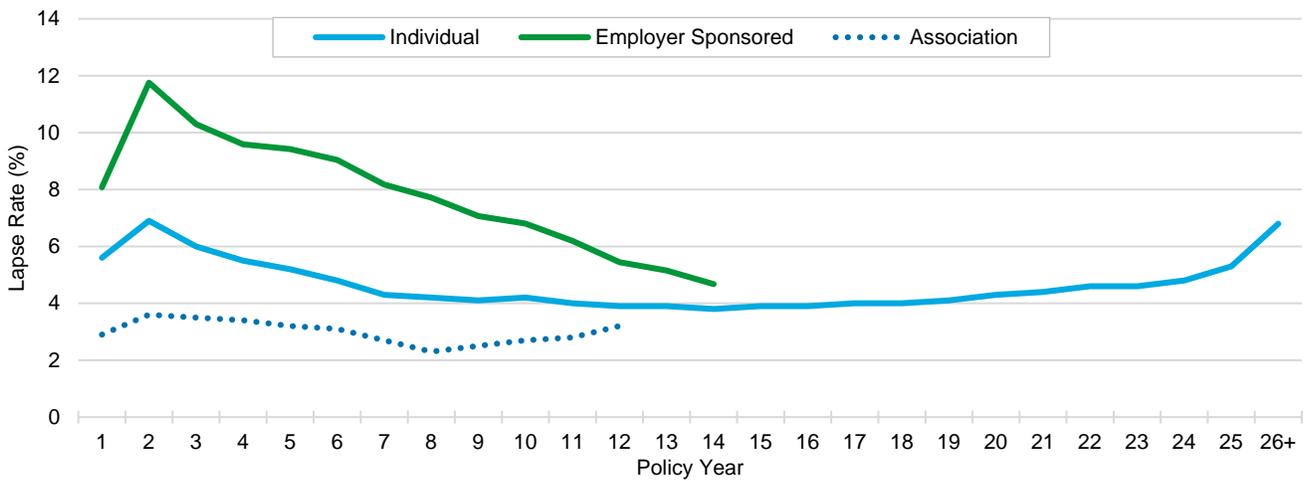


## BY MARKETING SOURCE

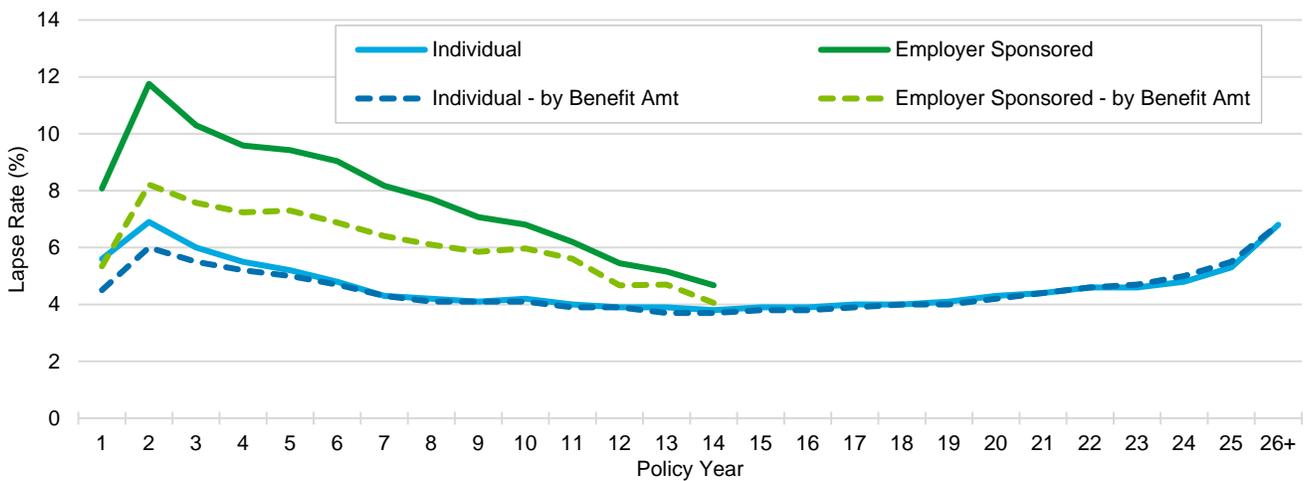
In early policy years, employer-sponsored disability income policies have a noticeably higher lapse rate than policies sold in the individual market (Figure 11). Policies sold to associations have the lowest lapse rate. Approximately 22 percent of the exposure is employer sponsored, while 3 percent is association business.

On a benefit amount basis, lapse rates on employer-sponsored policies are still higher than lapse rates on individual policies, but the discrepancy between the two is smaller (Figure 12). For employer-sponsored policies, smaller-than-average benefit amount policies tend to lapse in most policy years, decreasing the benefit amount lapse rate.

**Figure 11 — Non-Cancelable Policy Count Lapse Rates by Marketing Source**



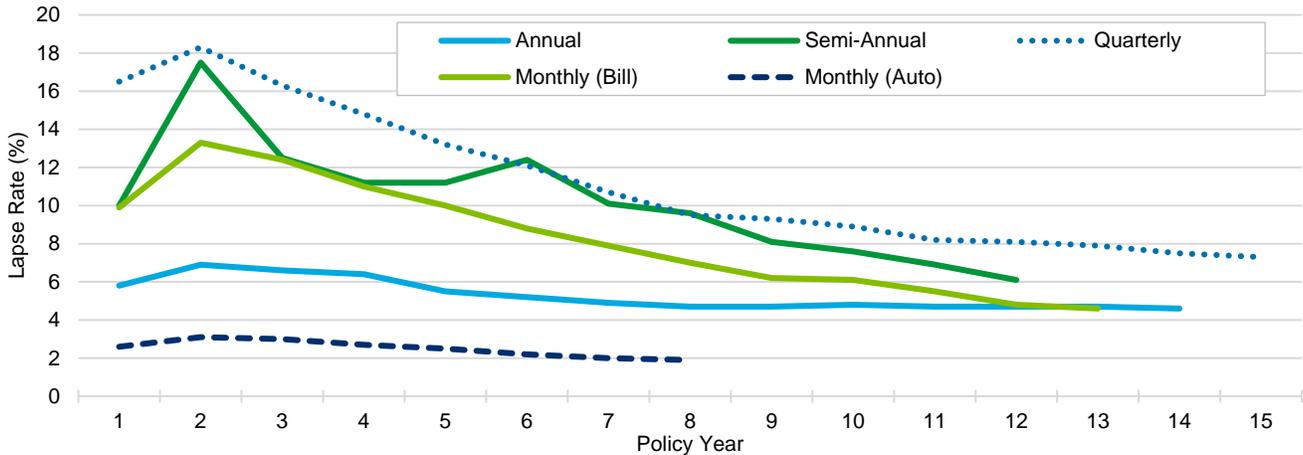
**Figure 12 — Non-Cancelable Lapse Rates by Marketing Source, by Policy Count and Benefit Amount**



## BY PREMIUM MODE

Lapse rates are lowest on policies with the automatic monthly premium mode and highest on the quarterly mode (Figure 13). Lapse experience on the other premium modes appear to possibly be converging after policy year 12. The pattern of higher lapse rates for more frequent premium payments is also seen on life insurance policies.

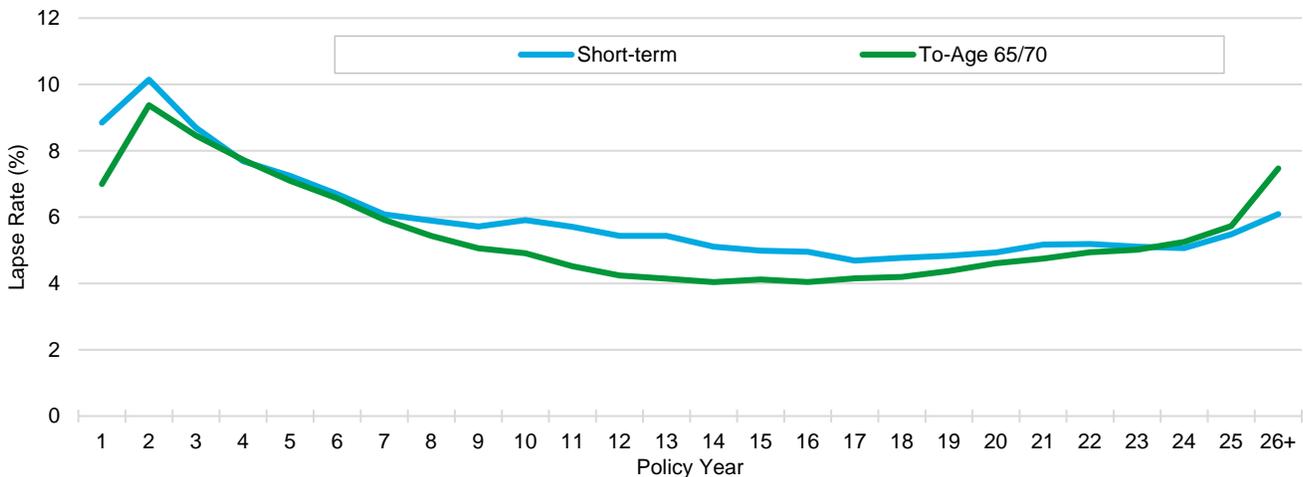
**Figure 13 — Non-Cancelable Policy Count Lapse Rates by Premium Mode**



## BY BENEFIT PERIOD

Lapse rates with short-term benefit periods, (i.e., defined by a period of years as opposed to a particular age) tend to have higher lapse rates than policies with benefit periods defined by a particular age (Figure 14). There appears to be a general pattern of longer benefit periods having lower lapse rates relative to those with shorter benefit periods. About 80 percent of non-lifetime benefit period policies have a benefit period defined by a particular age, while 20 percent have a benefit period defined by a specific number of years. Lapse experience for policies with a lifetime benefit period cannot be shown due to an overweighting of exposure in many policy years in one or more companies.

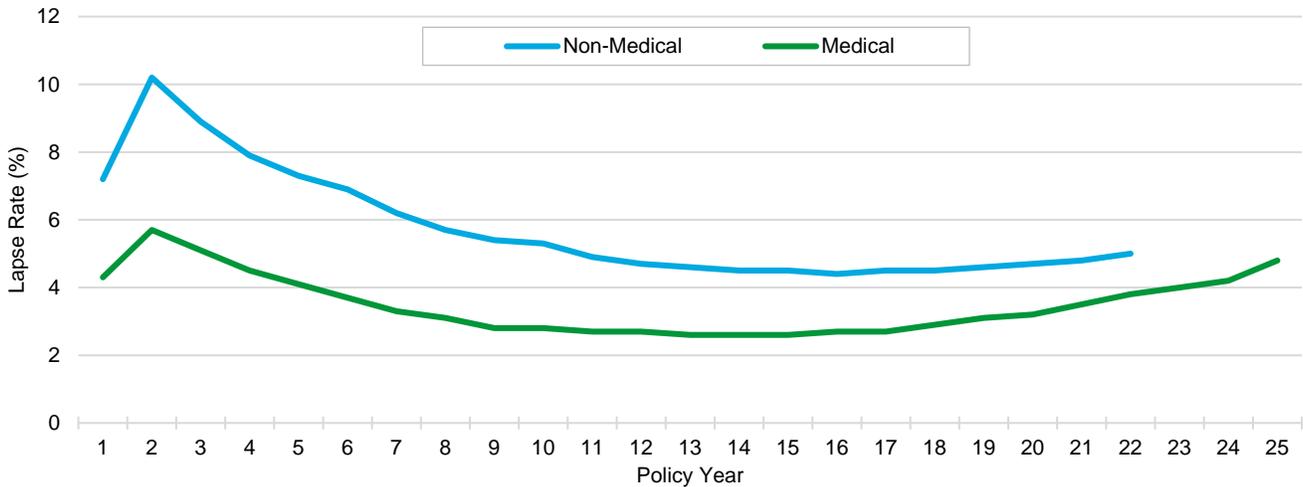
**Figure 14 — Non-Cancelable Policy Count Lapse Rates by Benefit Period**



## BY OCCUPATION AND IDI VALUATION TABLE CLASS GROUPINGS

Medical occupation lapse rates are consistently lower than non-medical occupation lapse rates across all policy years (Figure 15). Exposure is largest on non-medical occupations at 40 percent, relative to 32 percent for medical occupations. Policies with an unknown occupation account for the remaining 28 percent of the total non-cancelable exposure, with experience not shown due to a high concentration of these policies with one carrier.

**Figure 15 — Non-Cancelable Policy Count Lapse Rates by Occupation Grouping**

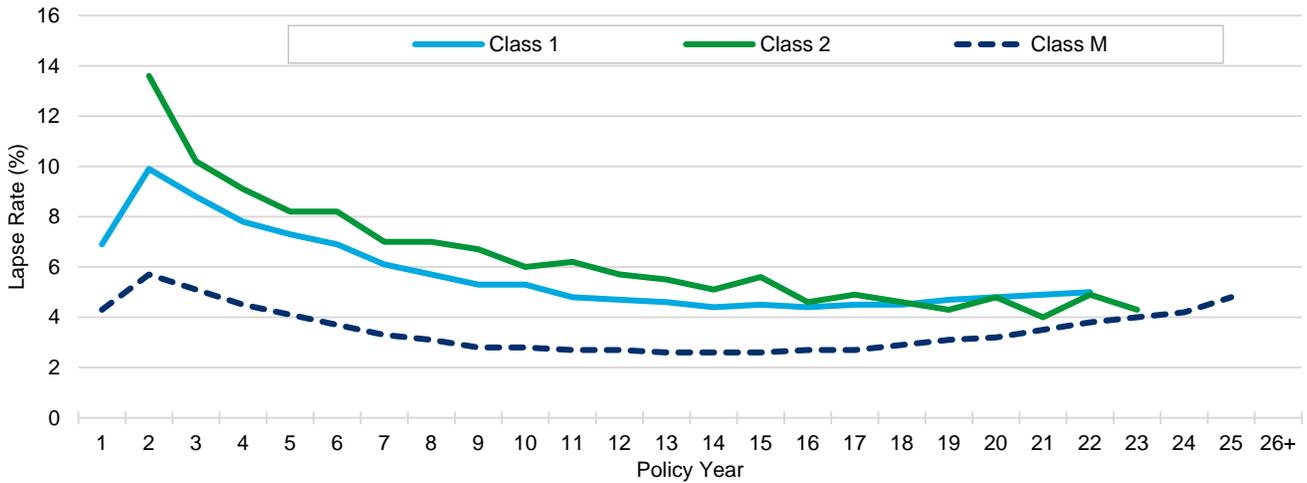


Consistent with the IDEC morbidity study and the 2013 IDI Valuation Table (IDIVT) the following five occupation classes are used:

- Class M—All medical occupations, e.g., doctors, surgeons, dentists, nurses, podiatrists, veterinarians, psychologists, psychiatrists, pharmacists
- Class 1—All non-medical white-collar and professional occupations
- Class 2—Skilled labor and most sales-related occupations
- Class 3—Blue-collar occupations with light manual duties
- Class 4—Blue-collar occupations with heavy manual duties

Breaking down the known non-medical occupations into the above classes, lapse rates for Class 1 policies are the lowest of all non-medical classes through policy year 18 (Figure 16). Lapse rate experience for the non-medical and medical classes does appear to converge in the later policy durations, perhaps indicating that the effect of class wears off over time.

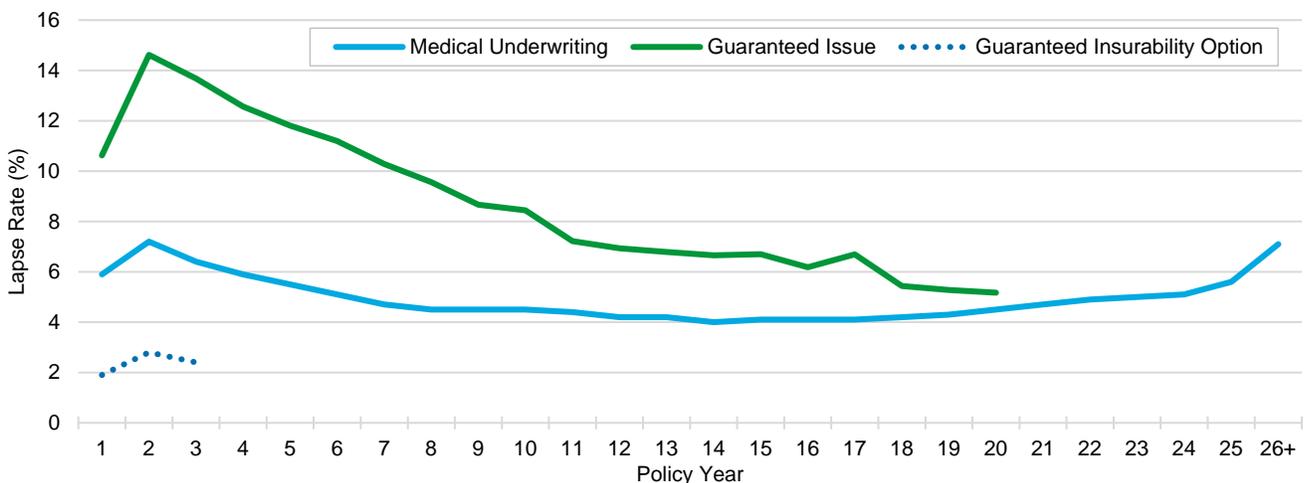
**Figure 16 — Non-Cancelable Policy Count Lapse Rates by IDIVT Occupation Class, Excluding Unknown Occupations**



## BY TYPE OF UNDERWRITING

In the early policy years, non-cancelable policies issued using guaranteed issue underwriting are about twice as likely to lapse as policies issued using medical underwriting (Figure 17). In this case “guaranteed issue” is defined as both a guaranteed standard issue program as well as a guaranteed to issue program. The difference between medically underwritten and guaranteed issue slowly wears off over time. Policies issued using a guaranteed insurability option have the lowest lapse rates of all underwriting methods, although only a limited number of policy years can be shown.

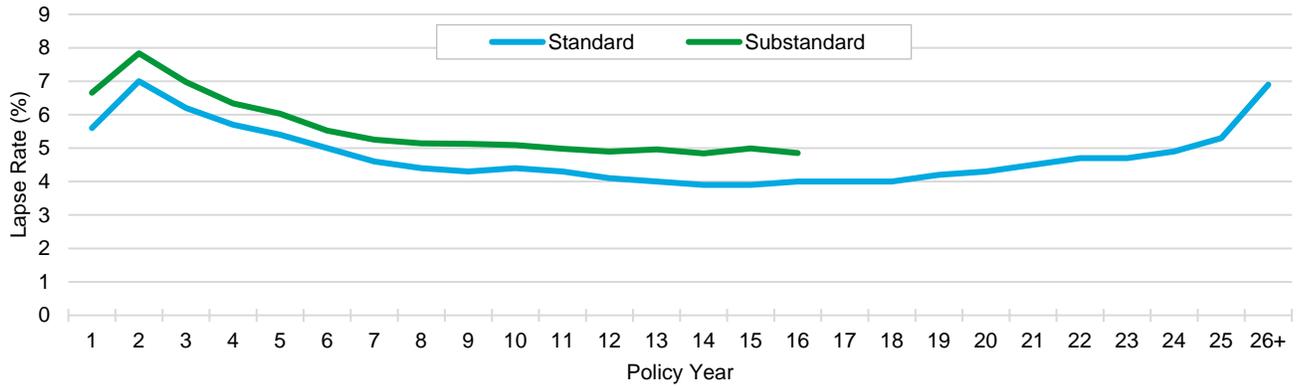
**Figure 17 — Non-Cancelable Policy Count Lapse Rates by Type of Underwriting**



## BY SUBSTANDARD INDICATOR

Lapse rates for medically underwritten standard policies are consistently lower than medically underwritten substandard policies (Figure 18). Substandard policies account for approximately 17 percent of the medically underwritten, non-cancelable exposure.

**Figure 18 — Non-Cancelable Policy Count Lapse Rates by Substandard Indicator, Medically Underwritten Only**

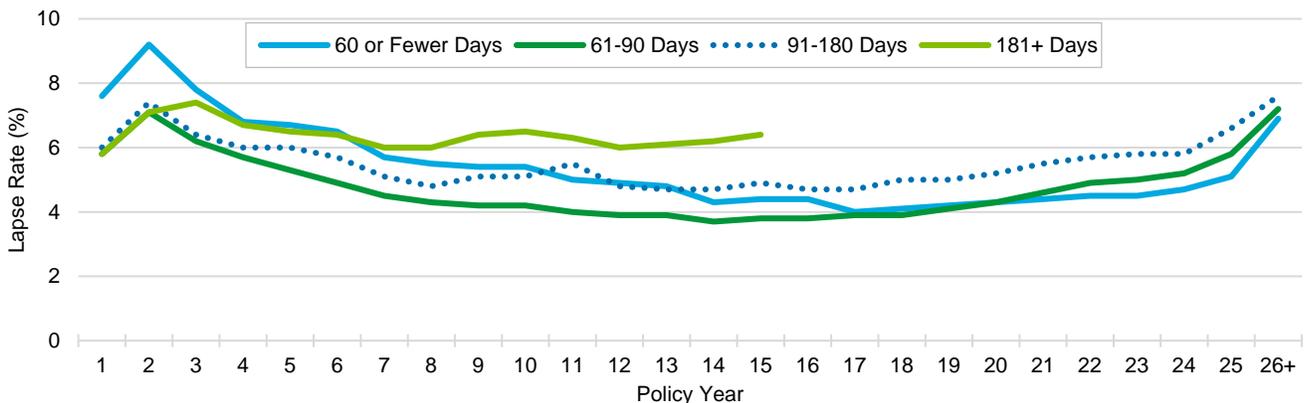


## BY ACCIDENT BENEFIT ELIMINATION PERIOD

Consistent with the IDEC morbidity analysis, all months are assumed to have 30 days creating a total of 360 days in one year. As such, an elimination period of 180 days, for example, is equivalent to 6 months and was made consistent by company.

In the early policy years, the shortest elimination periods tend to have the highest policy count lapse rates while the 90-day elimination period has the lowest policy count lapse rate (Figure 19). However, the 60 or fewer day elimination period results have a decreasing pattern by policy year, and by policy year 21 have the lowest policy count lapse rates. Starting in policy year seven, policies with an elimination period of more than 180 days have the highest lapse rates. Approximately two thirds of medically underwritten, non-cancelable exposure has an accident benefit elimination period of 90 days, and about 3 percent has an elimination period of more than 180 days.

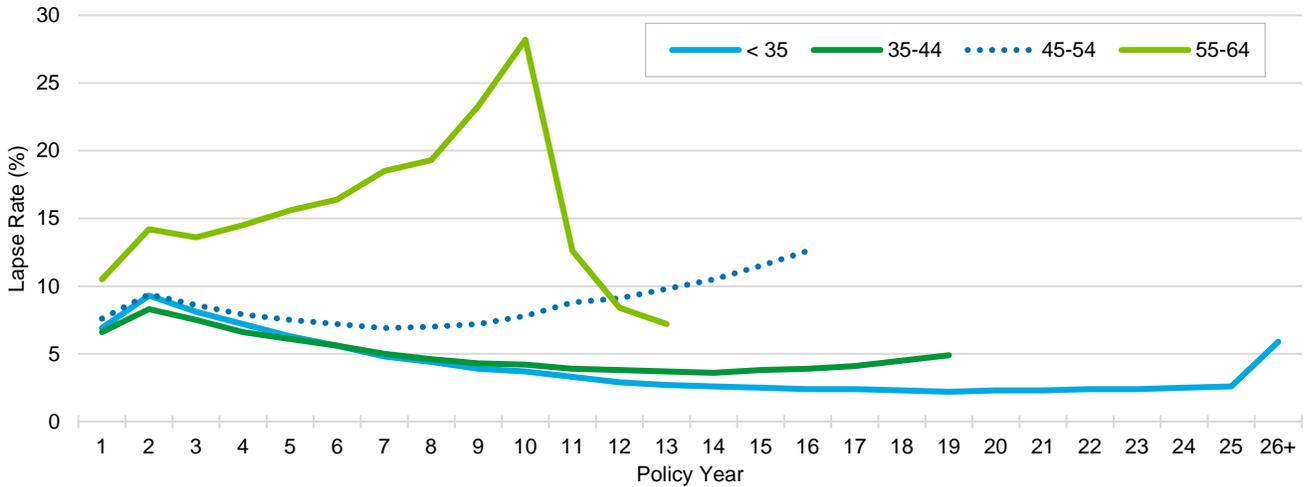
**Figure 19 — Non-Cancelable Policy Count Lapse Rates by Accident Benefit Elimination Period, Medically Underwritten Only**



## BY ISSUE AGE

The pattern of policy count lapse rates by issue age highlights the trend of increasing lapse rates as retirement age draws near (Figure 20). As illustrated in the oldest issue age group, lapse rates peak around retirement and then drop substantially thereafter, another indication there may be policy expiries miscoded as lapses. In the early policy years however, lapse rate experience does seem to vary by issue age with highest lapse rates for the highest issue ages.

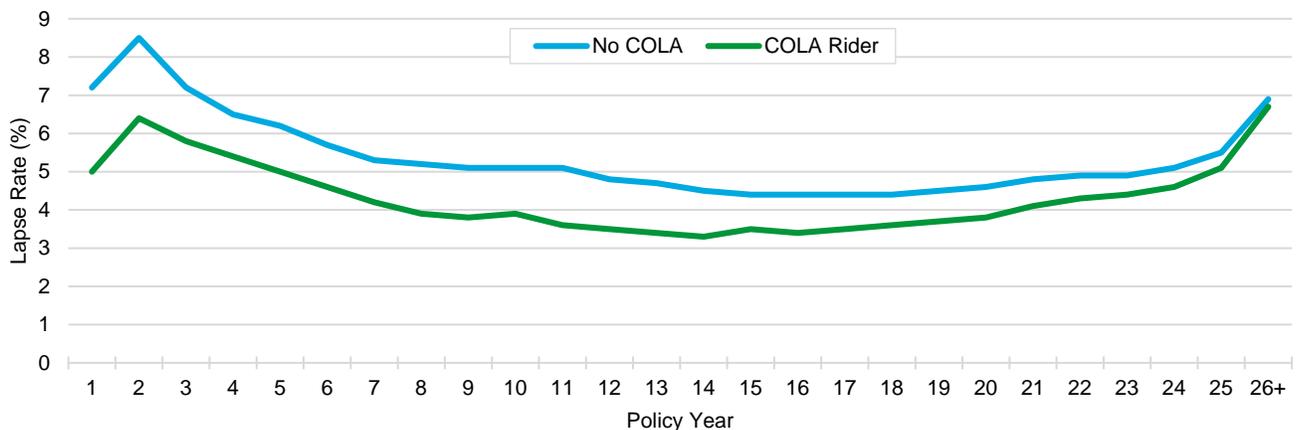
**Figure 20 — Non-Cancelable Policy Count Lapse Rates by Issue Age**



## BY COLA RIDER PURCHASE

Approximately 40 percent of medically underwritten policies purchase a COLA rider. It appears that policy count lapse rates for policies with a COLA rider are consistently lower than policy count lapse rates for policies without a COLA rider (Figure 21). Higher lapse rates for policies without a COLA rider are at least partly due to a differing mix of business, as they have a larger proportion of smokers which have a higher lapse rate.

**Figure 21 — Non-Cancelable Policy Count Lapse Rates by COLA Rider, Medically Underwritten Only**



## BY STATE OF ISSUE

Nine companies were able to provide information on the state where the policy was issued. In order to reduce volatility, only medically underwritten, accident/sickness policies were included in the analysis. State was limited to the 50 U.S. states plus the District of Columbia. To allow for all states to be included in this analysis, if a company's policy count exposure was larger than 50 percent in any given state, the company results were sampled down.

The overall average non-cancelable policy count lapse rate for known states of issue is 5.5 percent. Table 3 outlines the states with the highest and lowest policy count lapse rate. The minimum policy count lapse rate was Louisiana at 4.3 percent and the maximum policy count lapse rate was Nevada at 6.8 percent. The full table of results is available in the Tableau database.

**Table 3 — Non-Cancelable Policy Count Lapse Rates by State of Issue, Medically Underwritten, Accident/Sickness Only**

Rank	State of Issue	Policy Count Lapse Rate
51	Lousiana	4.3%
50	Mississippi	4.6%
49	Nebraska	4.7%
48	Hawaii	4.8%
47	Alaska	4.8%
46	Alabama	4.9%
45	Oklahoma	4.9%
44	Tennessee	5.0%
43	New York	5.1%
...	...	...
7	Vermont	6.2%
6	Florida	6.2%
5	Maine	6.2%
4	Washington	6.2%
3	New Hampshire	6.3%
2	Idaho	6.8%
1	Nevada	6.8%

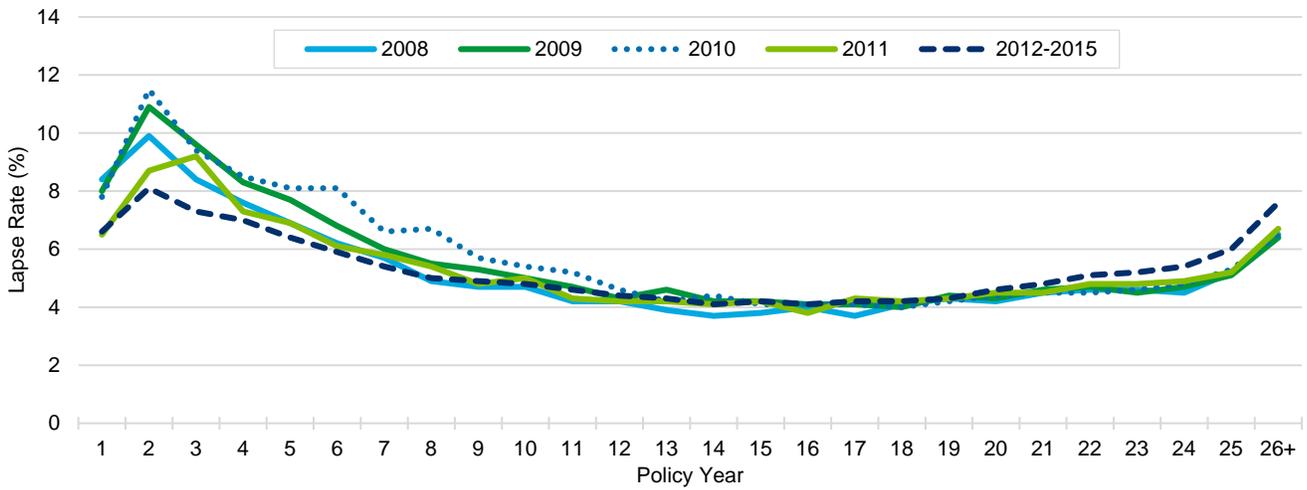
## BY STUDY YEAR

There are eight complete, anniversary-to-anniversary study years in this report, study year 2008 through study year 2015. Study year is defined as the policy year ending in the named calendar year. For example, study year 2008 captures experience from policy anniversary in 2007 to policy anniversary in 2008.

Early policy year lapse rates are noticeably higher for study years 2008 through 2011 and are the highest in study years 2009 and 2010 (Figure 22). This may be due, in part, to the recessionary economic conditions present at that time. Table 4 compares the overall policy lapse rate by study year.

Interestingly, lapse rates for the study years during the economic recession appear to be lower in the later policy years (policy years 20 and later) compared to the non-recessionary study years.

**Figure 22 — Non-Cancelable Policy Count Lapse Rates by Study Year**



**Table 4 — Overall Policy Count Lapse Rates by Study Year**

Study Year	Overall Policy Count Lapse Rate
2008	5.6
2009	6.0
2010	6.2
2011	5.6
2012	5.6
2013	5.7
2014	5.7
2015	5.7

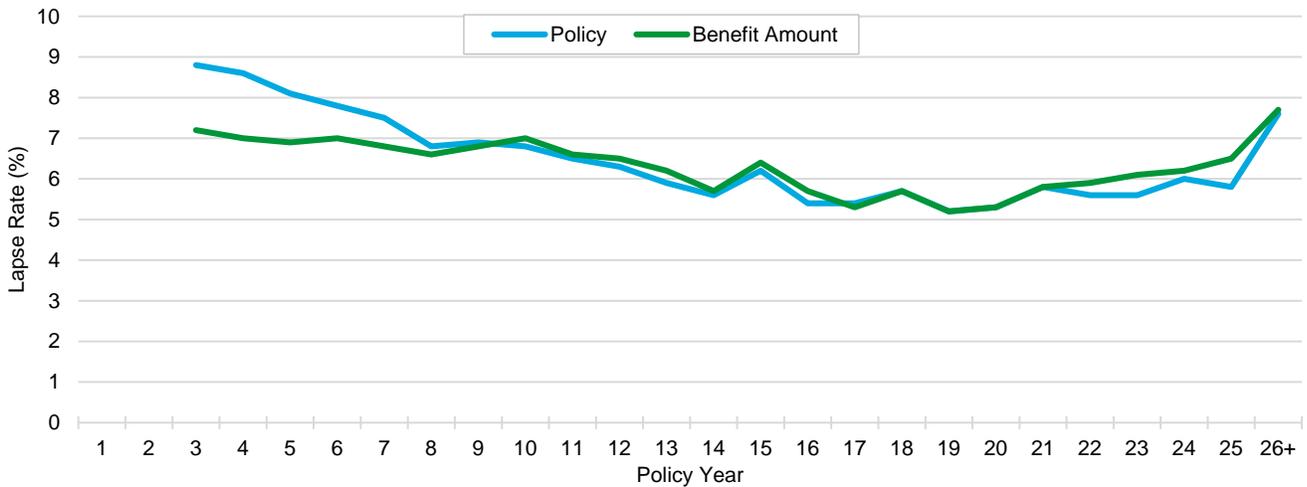
# Guaranteed Renewable Lapse Rates

Seven companies submitted data for guaranteed renewable policies, which account for 14 percent of the overall policy exposure (higher exposure in early policy years). Due to the smaller exposure base and number of companies submitting business for guaranteed renewable policies, many of the breaks in the lapse results shown throughout this section are from company exposure exceeding 50 percent in that cell.

Guaranteed renewable business has a higher percentage of smokers and non-medical occupations than non-cancelable business, which may drive the generally higher lapse rates seen on guaranteed renewable policies (on both a count and benefit amount basis).

Similar to non-cancelable policies, smaller-than-average policies tend to lapse in the early policy years decreasing lapse rates by benefit amount in those years (Figure 23). Slightly larger-than-average policies tend to lapse in the later policy years, increasing lapse rates by benefit amount.

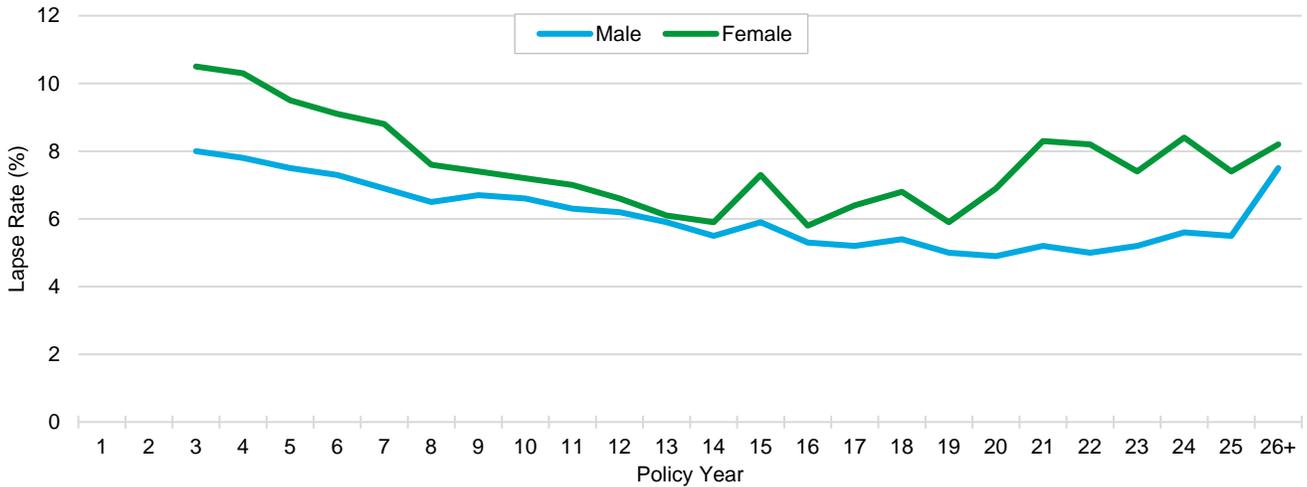
**Figure 23 — Guaranteed Renewable Policy Count and Benefit Amount Lapse Rates**



## BY GENDER

Also similar to non-cancelable plans, lapse rates for female guaranteed renewable policies are higher than male policies across all policy years (Figure 24). The distribution of exposure by gender and policy year is very similar between guaranteed renewable and non-cancelable plans. In the early policy years, more than 30 percent of guaranteed renewable policy exposure is on females compared to 15 percent or less in policy years 25 and later.

**Figure 24 — Guaranteed Renewable Policy Count Lapse Rates by Gender**



## BY BENEFIT AMOUNT BANDS

It appears that early policy year lapse rates may be lower for higher benefit amounts (Figure 25). This pattern is similar to non-cancelable plans, as well as other product lines including life insurance. The average benefit amount exposed is about 43 percent less for guaranteed renewable policies than it is for non-cancelable policies.

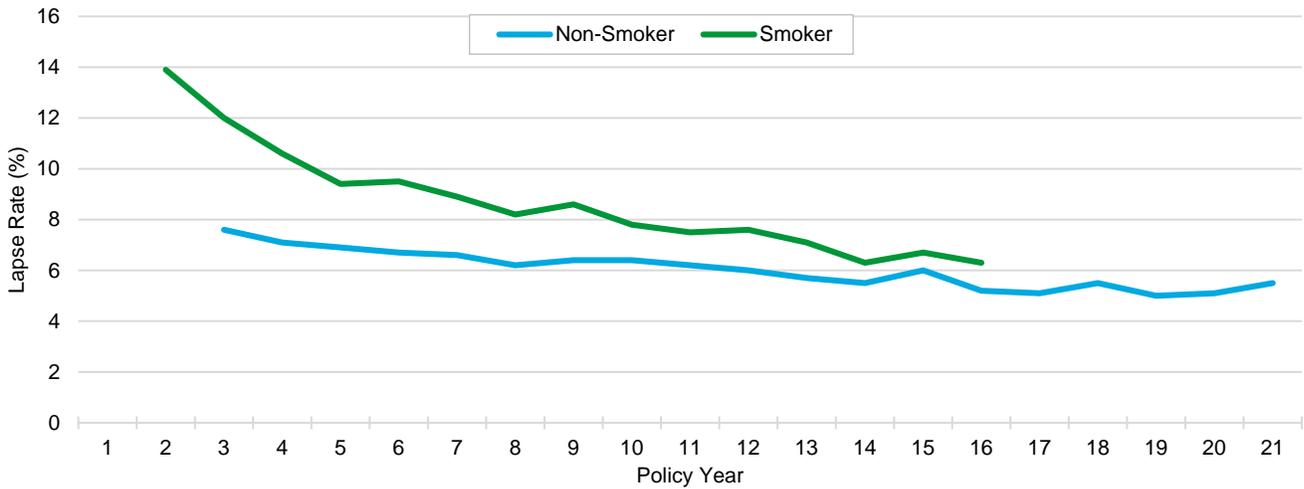
**Figure 25 — Guaranteed Renewable Policy Count Lapse Rates by Monthly Benefit, Personal Policies Only**



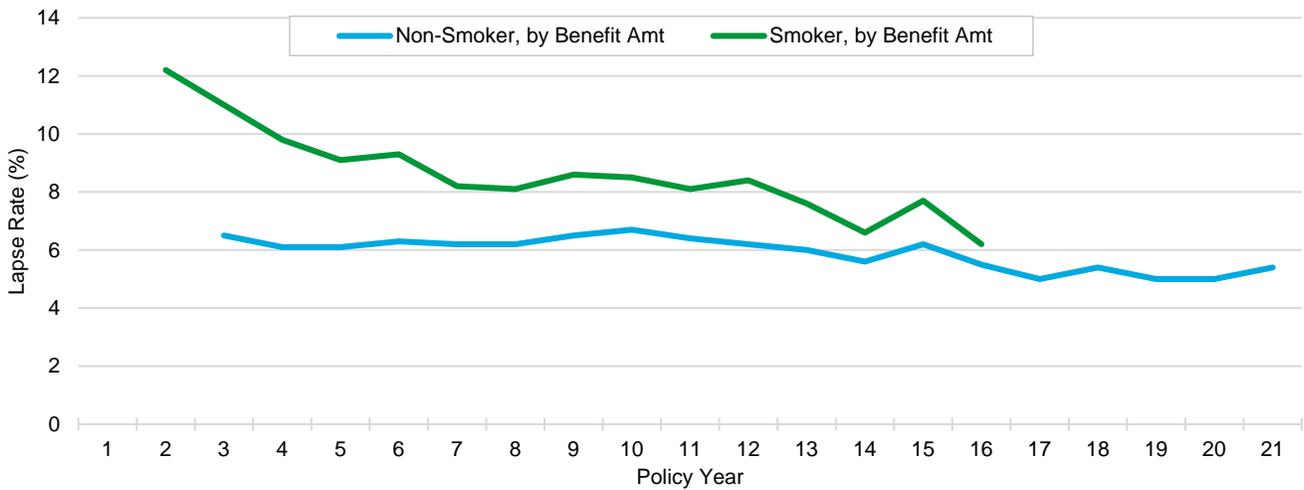
## BY SMOKING STATUS

Where smoking status is known, 86 percent of the guaranteed renewable policy exposure is on non-smokers. Lapse rates on non-smokers are considerably lower in the early policy years (Figure 26). However non-smoker and smoker lapse rate experience does appear to converge slowly over time. Lapse rates by monthly benefit amount exhibit a similar pattern (Figure 27).

**Figure 26 — Guaranteed Renewable Policy Count Lapse Rates by Smoking Status**



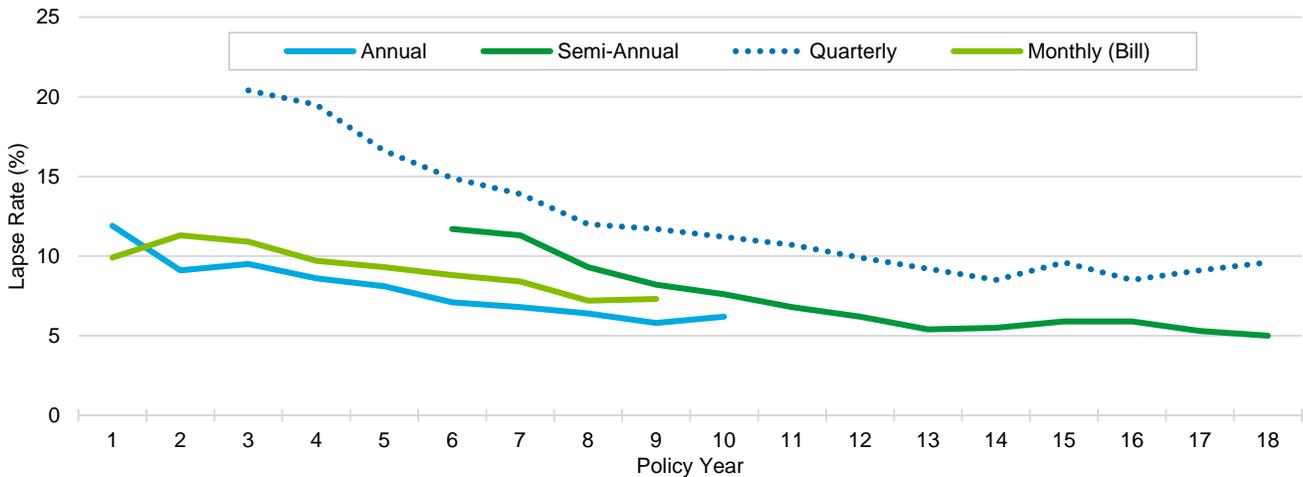
**Figure 27 — Guaranteed Renewable Benefit Amount Lapse Rates by Smoking Status**



## BY PREMIUM MODE

Except for monthly billed policies, the higher number of payments per year, generally the higher the lapse rate (Figure 28). Quarterly paid policies consistently have the highest lapse rates in all policy years.

**Figure 28 — Guaranteed Renewable Policy Count Lapse Rates by Premium Mode**

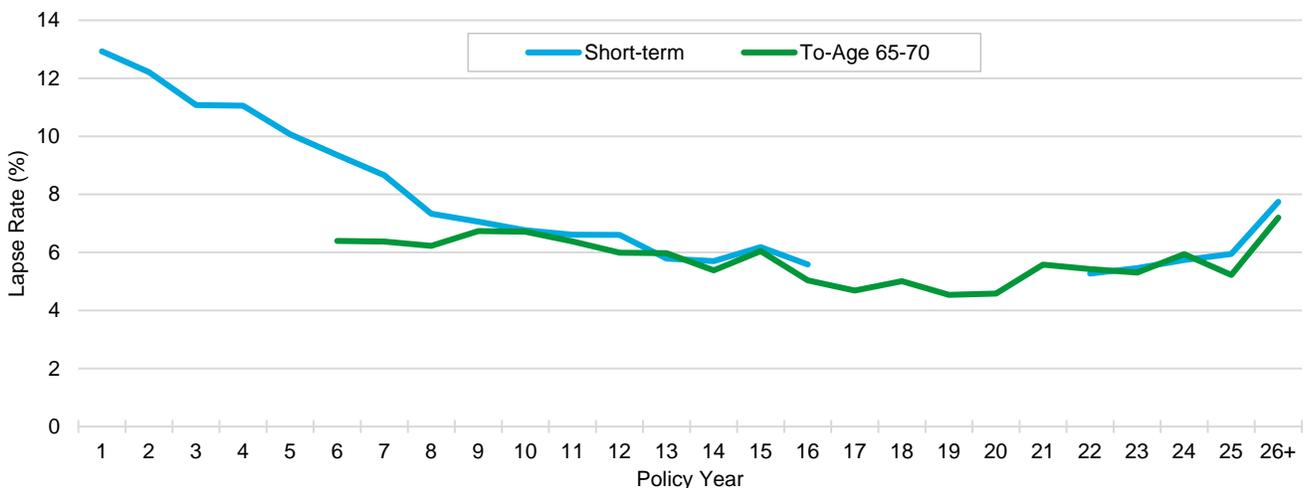


## BY BENEFIT PERIOD

Lapse rates for short-term benefit periods (defined by a period of years as opposed to a particular age) appear to be noticeably higher in the earlier policy years compared to longer benefit periods (defined by a particular age) (Figure 29). After policy year eight, lapse rate experience becomes relatively similar between the two types of benefit periods.

The distribution of benefit period exposure varies by policy year. In the first five policy years approximately 60 percent of the exposure is on benefit periods defined by age compared to only 36 percent in policy years 20 and later. The exposure for policies with lifetime benefit periods was too small to be included in the report.

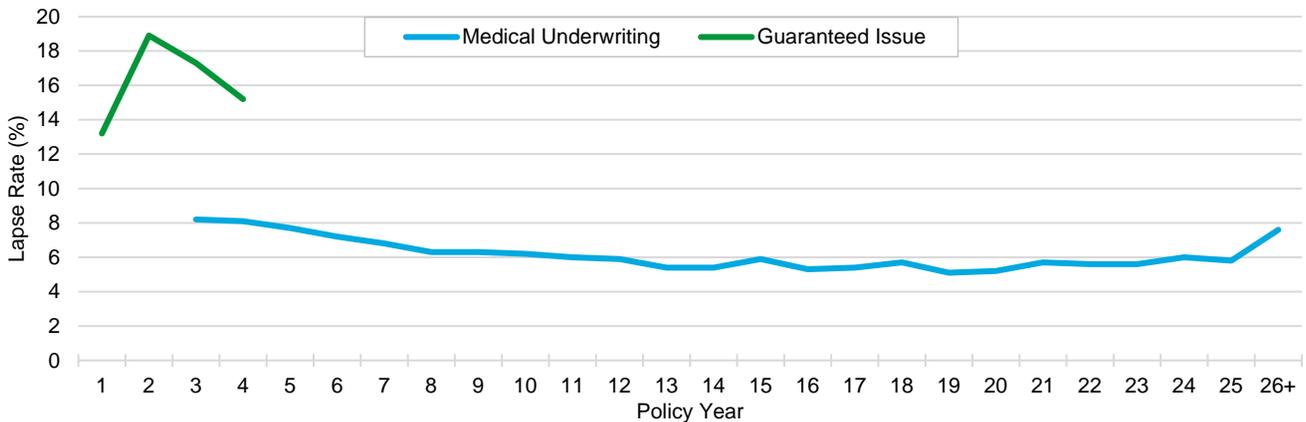
**Figure 29 — Guaranteed Renewable Policy Count Lapse Rates by Benefit Period**



## BY TYPE OF UNDERWRITING

Lapse rates on guaranteed issue policies are almost twice as high as medically underwritten policies in the very early policy years (Figure 30), and account for only about 6 percent of the guaranteed renewable policy exposure. In this case “guaranteed issue” is defined as both a guaranteed standard issue program as well as a guaranteed to issue program as some companies had difficulties distinguishing between the two types. Too few companies submitted data for policies issued through a guaranteed insurability option and, as such, lapse results cannot be shown.

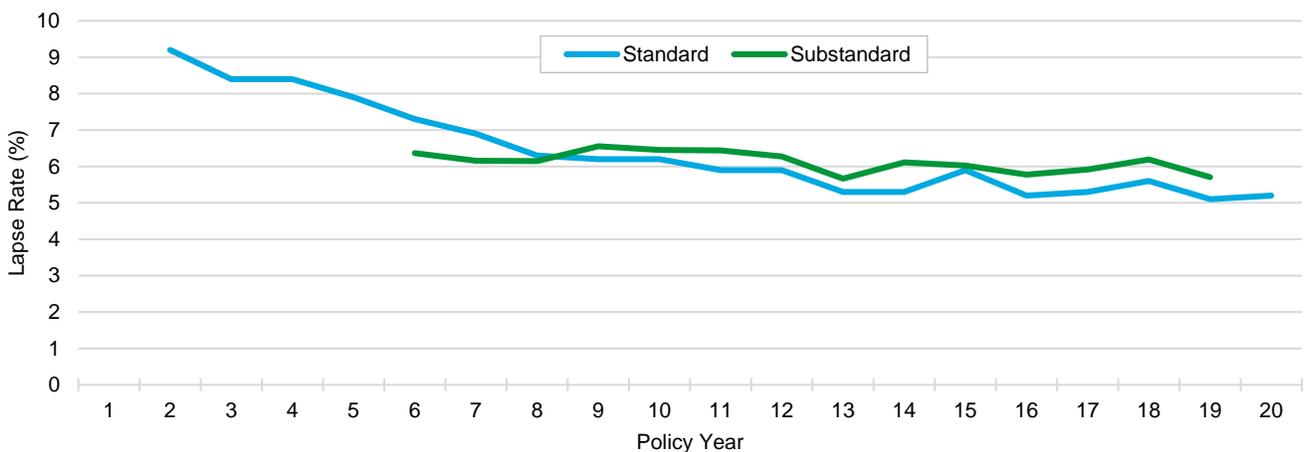
**Figure 30 — Guaranteed Renewable Policy Count Lapse Rates by Type of Underwriting**



## BY SUBSTANDARD INDICATOR

Where experience can be shown, lapse rates on medically underwritten substandard policies are lower than lapse rates on medically underwritten standard policies in the early policy years (Figure 31). This pattern of lower lapse rates on substandard policies is a bit unique and opposite of the experience on both non-cancelable policies as well as life insurance plans where substandard lapse rates tend to be higher in all policy years. Lapse rates on substandard policies do converge and then become higher than standard policies around policy year 9. Approximately 14 percent of guaranteed renewable policy exposure is on policies with a substandard rating.

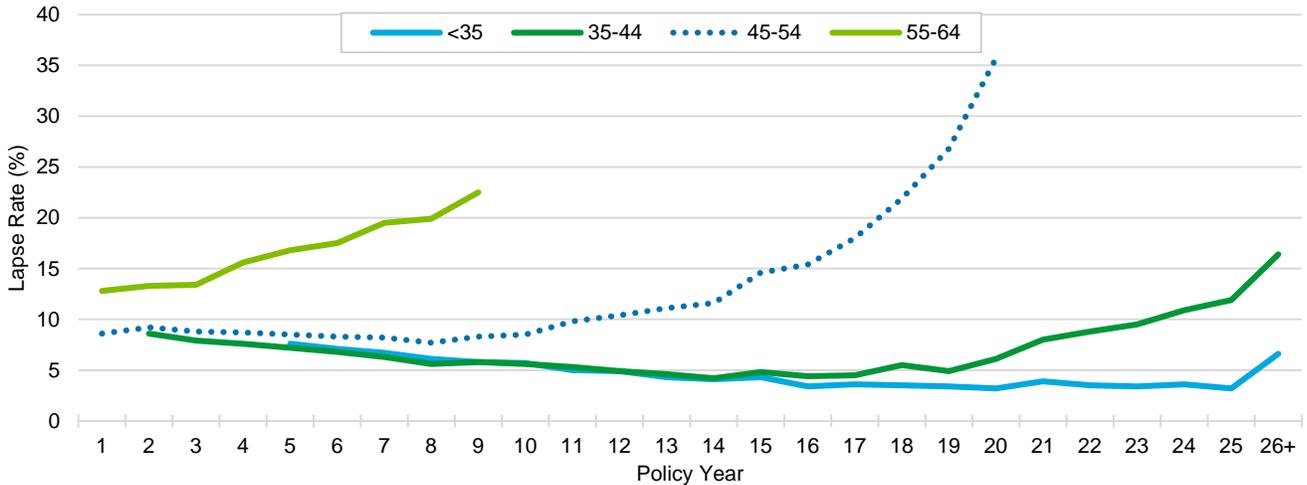
**Figure 31 — Guaranteed Renewable Policy Count Lapse Rates by Substandard Indicator, Medically Underwritten**



## BY ISSUE AGE

The pattern of policy count lapse rates by issue age highlights the trend of increasing lapse rates as retirement age draws near (Figure 32). In the early policy years, lapse rate experience does seem to vary by issue age with highest lapse rates for the oldest issue ages.

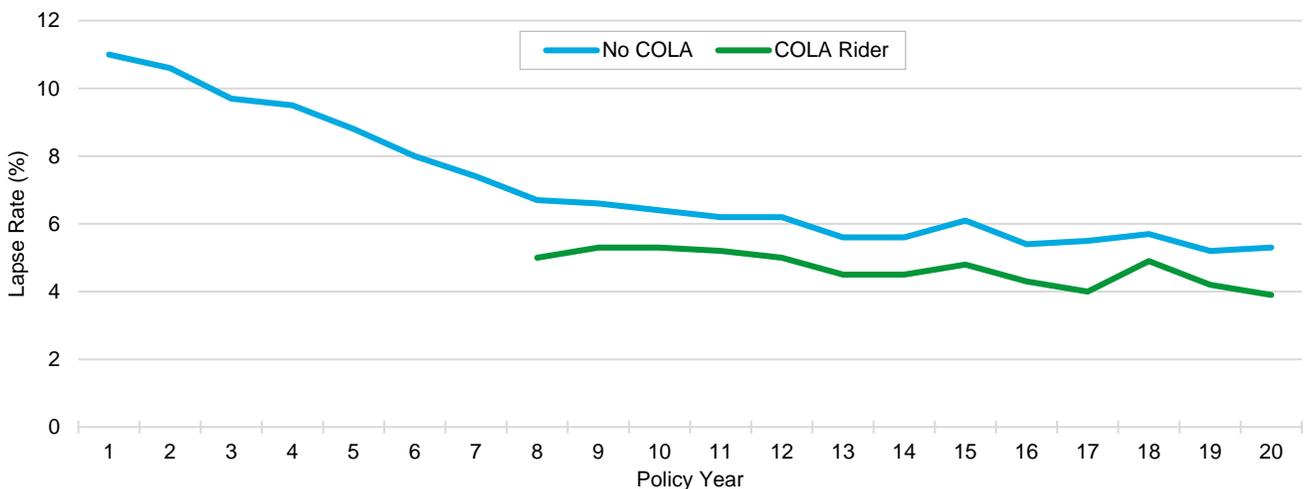
**Figure 32 — Guaranteed Renewable Policy Count Lapse Rates by Issue Age**



## BY COLA RIDER PURCHASE

Approximately 23 percent of medically underwritten policies purchase a COLA rider. It appears that policy count lapse rates for policies with a COLA rider are consistently lower than policy count lapse rates for policies without a COLA rider (Figure 33). Higher lapse rates for policies without a COLA rider are at least partly due to differing mix of business, as they have a larger proportion of smokers and non-medical occupations which have higher lapse rates.

**Figure 33 — Guaranteed Renewable Policy Count Lapse Rates by COLA Rider, Medically Underwritten Only**

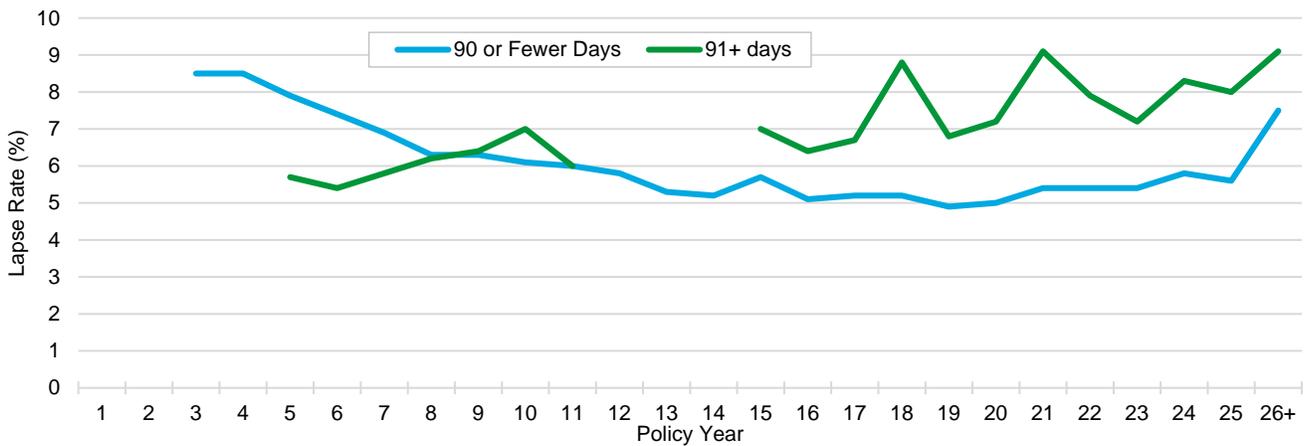


## BY ACCIDENT BENEFIT ELIMINATION PERIOD

Consistent with the IDEC morbidity analysis, all months are assumed to have 30 days for a total of 360 days in one year. As such, an elimination period of 180 days, for example, is equivalent to 6 months and was made consistent by company.

In the early policy years, the shortest elimination periods tend to have the highest policy count lapse rates (Figure 34), consistent with lapse experience on non-cancelable policies. Approximately 88 percent of medically underwritten, guaranteed renewable exposure has an accident benefit elimination period of 90 or fewer days.

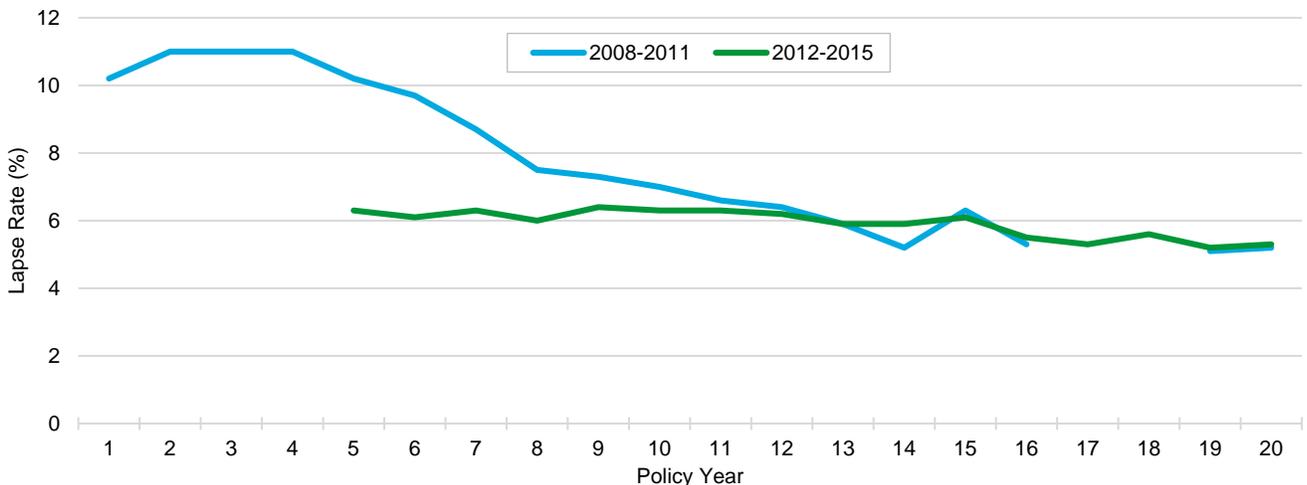
**Figure 34 — Guaranteed Renewable Policy Count Lapse Rates by Accident Benefit Elimination Period, Medically Underwritten Only**



## BY STUDY YEAR

Where experience can be shown, it appears that early policy year lapse rates were higher during the economic downturn than the period after the downturn (Figure 35). This pattern of higher early policy year lapse rates is also seen in non-cancelable plans, as well as other product lines, including life insurance.

**Figure 35 — Guaranteed Renewable Policy Count Lapse Rates by Study Year**



# Methodology

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For purposes of this report, lapse includes termination for any reason other than death or policy expiry; it includes termination for non-payment of premium, conversion, and terminations for an unknown reason. This is consistent with the definition of voluntary lapse applied to LIMRA and Society of Actuaries experience studies for other products, and allows for better comparison of results over time.

The observation years in the study were 2007 to 2015. Contributing companies were asked to provide information on their entire in-force block at the policy level. All policies were converted to policy year for analysis.

There are eight complete anniversary-to-anniversary study years in this report; i.e., study years 2007 through 2015. Study year is defined as the policy year ending in the named calendar year.

The lapse rates shown are based on 100 percent of policies submitted, except in cases where a company's volume of business was so large, or its experience was so different from that of other contributors, that overall industry results would be unduly skewed in which case their data may have been removed or sampled.

It should be noted that not all contributing companies in the study contributed data for their entire in-force block of subsidiaries and experience years. In addition, the focus of the original data collection was on morbidity experience and several companies were not able to provide data for all policies and parameters requested for the lapse study. A couple companies had to be excluded from the lapse study that were included in the morbidity study as they could not provide policy termination reason.

Lapse rates are calculated as follows:

$$\text{Annualized Policy Count Lapse Rate} = 100\% \times \frac{\text{Number of Policies Lapsed During the Policy Year}}{\text{Number of Policies Exposed to Lapse}}$$

$$\text{Annualized Benefit Amount Lapse Rate} = 100\% \times \frac{\text{Benefit Amount Lapsed During the Policy Year}}{\text{Benefit Amount Exposed to Lapse}}$$

The number of policies exposed to lapse is based on the length of time the policy is exposed to the risk of lapsation during the year. Lapses contribute exposure for the full 12 months. Terminations due to death or policy expiry are not included in the amounts lapsing and contribute to exposure for only the fraction of the policy year they were in force.

We note that the individual company data underlying this study produces a pattern of voluntary lapses by policy year that indicates some policy expiries may have been coded incorrectly as lapses. Also, based on information from individual companies, the extent to which deaths are distinguished from voluntary lapses varies by company. The termination split between deaths and voluntary lapses at some companies is felt to be very good as checks against the Social Security Master Death File are performed regularly, while at other companies the split is less accurate. One company was unable to provide any split for deaths, and all non-expiry terminations were coded as lapses. Therefore care should be taken in interpreting the results.

Industry lapse rates are calculated as a weighted average of the experience of all contributing companies with each policy contributing up to one year of exposure for each study year, as described above. As such, companies with larger in-force blocks will affect the overall results more than companies with smaller in-force blocks. Results by benefit amount are calculated similarly, except each policy is weighted by its corresponding benefit amount. Unless otherwise noted, for each type of renewal provision (non-cancelable, guaranteed renewable, and total) total policy count exposure is examined at the company level to ensure that reported experience is not overly affected by one or more large participant blocks. The definition of “large” was set by the SOA Individual Disability Experience Committee at 40 percent and no company represented more than 40 percent of the total policy count exposure for each renewal provision type.

Lapse rates are not reported for any data cell for which there were fewer than three (3) companies, or less than 1,000 policies exposed.

Results are also not shown if a company represents more than approximately 50 percent of the exposure at the cell level for any given figure/view. This safeguard is in addition to the 40 percent overall exposure rule used in the SOA IDEC morbidity study.

Experience was reported exactly as calculated. No attempts were made to level or smooth results.

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# Appendix A – Data Call Format

Below is the data call format sent to each participating company by the SOA Individual Disability Income Experience Committee in November 2016.

Field #	Field Name	Description
1	Company Code	3 digit MIB company code
2	Policy Number	18 character alphanumeric identifier that uniquely identifies the policy represented by this record for this policy. It is important that this code be consistent with the corresponding field in any claim records.
3	Policy Effective Date	8 character (yyyymmdd) numeric date representing the date on which coverage under this policy first became effective.
4	Policy Status	The status of this policy on the date as of which the data is extracted. This can be based on your company's administrative system status code, in which case a separate document documenting the meaning of each code will be needed. At a minimum we would like to be able to use this code to classify the policy into one of the following groups: 1 = Policy in force 2 = Policy no longer in force 3 = Suspended/Other
5	Last Paid-to-Date	The date through which the most recent paid or waived premium extended coverage. Please provide in YYYYMMDD format.
6	Policy Termination Date	The date on which coverage ceased to apply if the policy is no longer in force. This field should be blank for in-force policies. Please provide in YYYYMMDD format.
7	Birth Date	Birth date of insured. Please provide in YYYYMMDD format.
8	Monthly Indemnity	Current monthly benefit payable under this policy in event of total disability. Round to the nearest dollar amount.
9	Type of Policy	1 = Accident only policies 2 = Disability Income policies covering accident and sickness 3 = Business Overhead Expense 4 = Key Person 5 = Disability Buy-Out 6 = Other (if this category is used, please provide a separate description of the types of policies included)
10	Definition of Disability	Definition of disability in base contract or rider. 1 = Own occ 2 = Own occ not working 3 = Any occ from day 1 4 = Loss of earnings

Field #	Field Name	Description
11	Own Occ Period	Own Occ period in base contract or rider. Please enter 3 digits in number of months. 000 if not own occ 999 for length of benefit period
12	Type of Renewal Provision	1 = Non-Cancelable 2 = Guaranteed Renewable 0 = Other
13	Premium Pattern	1 = Level premium over life of policy 2 = One or more steps over life of policy 3 = Annually increasing
14	Residual Indicator	Residual and income replacement indicator. This field should indicate whether the policy has a benefit or rider that pays less than 100% based on less than full earnings loss (Y/N)
15	Type Of Coverage	1 = Total Disability Only 2 = Total and Residual Disability 3 = Total and Partial Disability
16	MNDA Limitation Period	MNDA Limitation Period in base contract or rider. Code indicating any limitations on coverage for mental, nervous, drug, and/or alcohol claims. Please provide a separate explanation of the values coded in this field. Provide the number of months with 2 digits for the limitation period. 00 = No MNDA Limitation
17	COLA Rider	Are post-disability increases in monthly indemnity present? Y/N
18	ADL Rider	Does an Activities of Daily Living (ADL) Rider exist? Y/N
19	Lifetime Benefits Rider	1 = Accident 2 = Sickness 3 = Both 0 = Not Available
20	SIS Indicator	Does a Social Insurance Supplement Rider exist? Y/N
21	ROP or CV Rider Indicator	Presence of Return of Premium or Cash Value Rider Y/N
22	Accident Elimination Period	Expressed in days (each month = 030 days, one year = 360 days)
23	Sickness Elimination Period	Expressed in days (each month = 030 days, one year = 360 days)
24	Accident Benefit Period Units	Code that describes the length of time for which benefits are payable for disability due to accident. Can be: 1 = Number of months 2 = To age 3 = Lifetime 4 = Lump sum 5 = Normal retirement age
25	Accident Benefit Period	The benefit period in months, or benefit period end age, as indicated by the "Benefit Period Units — Accident" field. For Lifetime benefits, enter "999" and for benefits payable to Social Security Normal Retirement Age, enter "000." For Lump Sum enter "000."

Field #	Field Name	Description
26	Sickness Benefit Period Units	Code that describes the length of time for which benefits are payable for disability due to sickness: 1 = Number of months 2 = To age 3 = Lifetime 4 = Lump sum 5 = Normal retirement age
27	Sickness Benefit Period	The benefit period in months, or benefit period end age, as indicated by the "Benefit Period Units – Sickness" field. For Lifetime benefits, enter "999" and for benefits payable to Social Security Normal Retirement Age, enter "000." For Lump Sum enter "000."
28	Occupation Class	Please provide your company's premium rating classes, including classifications that are no longer used but are reflected in the policy history.
29	CIDA Occ Class	Occupation class according to CIDA classifications: 1 = White collar and professional occupations 2 = Skilled labor occupations 3 = Blue collar occupations with light manual duties 4 = Blue collar occupations with heavy manual duties Alternatively, please provide sufficient documentation to translate company occupation class to CIDA occupation class.
30	Occupation	The occupation (at issue) code assigned to this policy using the company's classification system. Please provide documentation of the codes provided.
31	State of Issue	Two character for the state or province of the state in which the policy was issued.
32	State of Residence	Two character for the state or province of the state in which the insured currently resides.
33	Smoking Status	Smoking status of insured at policy issue: 1 = Non-smoker 2 = Smoker or Tobacco User 0 = Unknown
34	Substandard Indicator	1 = Standard 2 = Substandard - Extra Premium 3 = Substandard - Waived Condition 4 = Substandard - Extra Premium and Waived Condition 5 = Substandard - Unable to Distinguish Rating vs. Waiver
35	Type of Underwriting	1 = Full Underwriting 2 = Guaranteed Standard Issue 3 = Guaranteed to Issue 4 = Guaranteed Insurability Option Election (no medical U/W)
36	Marketing Source	1 = Individual 2 = Employer Sponsored - Employee Pay 3 = Employer Sponsored - Employer Pay 4 = Employer Sponsored - Unknown Split Between Employee & Employer 5 = Association
37	Annualized Premium	Premium, including policy fee, that would be collected in a year (e.g., monthly premium x12), rounded to nearest dollar.
38	Rate Basis	1 = Sex Distinct 2 = Unisex

Field #	Field Name	Description
39	Premium Mode	Frequency of premium payments: 1 = Annual 2 = Semi-Annual 3 = Quarterly 4 = Monthly (bill sent monthly) 5 = Monthly (automatic bank check; check-o-matic) 6 = Semi-Monthly 7 = Biweekly 8 = Weekly 9 = Single Premium 0 = Other/Unknown
40	Gender	1 = Male 2 = Female 0 = Unknown/Other
41	Age Basis	0 = Age Nearest Birthday 1 = Age Last Birthday (age nearest birthday is preferred)
42	Issue Age	Age of Insured at Date of Issue. Not required if birthdate is provided.
43	Date of Extract	Date on which data was extracted from the data source's system. Provide in YYYYMMDD format.
44	Indemnity Interval	Code identifying interval of payment of benefits: 1 = Annual 2 = Semi-Annual 3 = Quarterly 4 = Monthly 8 = Weekly 9 = Lump Sum 0 = Other/Unknown
45	Policy Termination Reason	Varies by company

# Participating Companies

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Ameritas Life

Assurity Life

Guardian Life Insurance Company

Illinois Mutual

MassMutual Life Insurance Company

Northwestern Mutual

Principal Financial

RiverSource Life

The Standard

Unum







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Principal Financial

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