

Morbidity Study

Canadian Individual Critical Illness Insurance Morbidity Experience Study

Including Policy Anniversaries Between 2007 and 2016
Using Expected Incidence Rate Tables 2008 CANCI

**Experience Research Committee –
Research Council**

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This is the fourth report submitted by the Experience Research Committee of the Canadian Institute of Actuaries (CIA) Research Council detailing the intercompany morbidity experience for Canadian individual critical illness (CI) insurance policies.

Expected CIA Incidence: 2008 CANCI Tables

The Expected tables used throughout this study refer to the 2008 CANCI tables published by the CIA in July 2012. For additional information, please refer to the:

- [Research paper](#); and
- [Excel tables](#).

General comments on the use of the 2008 CANCI tables:

- The Expected tables used in the Actual to Expected (A/E) results are unismoke and do not reflect any impact from the insurance underwriting process;
- The Expected tables reflect a distribution by smoking status found in the general population, which may differ from the distribution seen in an insured population;
- The Expected tables used in deriving the Exposure figures in this report reflect the number of illnesses found in each insurance policy included in this study, as well as any limitations with regard to age or payment amount for each covered illness;
- The Expected tables reflect general population incidence rates trended to January 1, 2008;
- The number of illnesses covered by a typical CI policy has increased since early 2000 and, in addition, the definitions used in insurance contracts may have changed during the study period and thereafter (e.g., heart attack, Parkinson's disease); and
- The 2008 CANCI tables represent general population levels of expected incidence adjusted to reflect the first occurrence of covered conditions and the initial version of the CLHIA CI benchmark definitions.¹ They are differentiated only by illness, attained age, and sex, and are not intended to reflect incidence rates of insured lives.

Methods

The exposures and claims presented in this study are for only those policies that satisfied the scope of the study, i.e., those with policy anniversary dates in any of the policy years 2007–2008 through 2015–2016. The following data were excluded:

- Any policies issued to people under the age of 20;
- Policies with a substandard rating;
- Policies that “accelerate” a life insurance benefit upon diagnosis of a covered CI;

¹ Canadian Life and Health Association (CLHIA) Critical Illness (CI) Benchmark Definitions – developed in 2007–2008, published May 2009.

- Group and creditor insurance policies; and
- Policies with claims for unknown causes (less than 1% of the final number of claims for this study).

The Exposure was calculated using the “Actuarial” method. For example, in the first of the five sets of five-year tables, we measured exposure years as the time for which the policy was exposed from the 2007 anniversary date to the 2012 anniversary date. The number of exposure years per policy could be as high as five. If the policy were not issued until after the 2007–2008 policy year or if it terminated prior to the 2012 anniversary date, the number of exposure years would be less than five. Terminations for causes other than claims can result in partial years of exposure. The total number of exposure years for each five-year table is therefore greater than the number of policies.

The exposed dollar amounts were calculated similarly by multiplying the face amount of the policy by the number of exposure years for that policy, year by year.

The incidence rates used were classified by attained age and sex for each covered illness. The expected number of claims is the sum (over all covered illnesses for each policy) of the product of exposure for that year and the incidence for the attained age in that year. These sums are then summed over all policies and years. (Attained age was calculated on an age-nearest-birthday basis in all cases except when the birth date was missing and the policy was issued on an age-last basis. In that case, the age was calculated as the age at issue plus duration. Then the expected claim morbidity rate was calculated as the mean of the morbidity rates at the calculated age and the rate at the next higher age.)

The expected claim dollar amounts were calculated similarly, but rather than multiplying by face value, they were multiplied by the amount that would be paid for a claim under each separate illness to account for partial claims, for example for non-life-threatening conditions.

The table columns entitled “S.D.” provide estimates of the standard deviation of the ratios of actual to expected numbers of claims. These numbers measure the precision or degree of confidence in the ratios. The formula used to calculate these standard deviations is:

$$S.D. = \frac{(\text{actual number of claims})^{1/2}}{\text{expected number of claims}}$$

Confidentiality

This project produces summary tables of which the granularity is subject to constraints to protect the confidentiality of the participating companies. The rule specified is that for any cell that is published, there must be at least four companies contributing data to that cell, and no company may provide more than 55% of the experience in that cell (measured using exposure count).

A “cell” is a row in a summary table specified, for example, by a combination of an attained age, a smoking status, and a sex. If the number of exposures for that row in the table satisfies the two conditions of the above rule, the data are accepted as is; if the rule is not satisfied, then groupings for one of the variables are combined and the corresponding data are aggregated.

The process is repeated until the resulting row satisfies the two constraints. The summary tables included here satisfy the confidentiality rule.

Other Details Regarding the 2007–2016 Study

- Twenty-two of the 866,865 unique policy number records in this study (0.0025%) had a smoking code of “unknown”. These were included with “non-smokers” experience. This adjustment was considered to be immaterial.
- In total, 7,990 (0.92%) unique policy number records were reported as conversions or plan changes. An ideal use of the data would have been to reflect the actual conversion on a point-in-scale basis, but due to data limitations, these policies were dropped from the study. This treatment is a change from the prior study which had a portion of these changes still included in the study and treated as new policies.
- Policies with exclusions were considered standard policies. The expectation is that the number of policies with exclusions is relatively small, and the impact of the exclusion on each policy carrying an exclusion is also small.
- Due to rounding, occasionally the expected number of claims as reported in the tables is 0, even though the expected dollar amount is greater than 0. Numbers of claims and exposures are rounded to the nearest integer, which accounts for some additions being off by small numbers. For example, male claims added to female claims may not equal overall claims.
- Tables for five-year studies will vary slightly from those in the published 2005–2014 study due to late-reported claims in the most recent data submission.

Company Participation

Table C1. The 11 companies that participated in the 2007–2016 study

Canada Life Assurance
Co-operators Life Insurance
Desjardins Financial Security
Great-West Life Assurance
Humania Assurance
Industrial Alliance
Manulife
RBC Life Insurance
SSQ Financial Group
Sun Life
Wawanesa Life Insurance

Not every company contributed data for every policy year.

Company Experience Ratio Variability

In the following tables, Percentage Departure represents the deviation of the company-specific A/E ratio (based on amounts) from the Total Experience line of Table C4d found in the Appendix. For example, for Table C2a below, one company had an A/E ratio of 50.8%, which was 95.67% of the overall A/E (53.1%). This company, along with two others, contributed \$151,758,590 or 41.85% to the 2007–2012 five-year study's actual claims.

Table C2a. Company experience ratio variability (2007–2012)

Percentage Departure	Number of Companies	Actual Claims	Percentage of Claims
Within 5%	3	\$151,758,590	41.85%
5%–10%	3	\$188,107,460	51.87%
Greater than 10%	5	\$22,796,008	6.29%
Total	11	\$362,662,058	100.00%

Table C2b. Company experience ratio variability (2008–2013)

Percentage Departure	Number of Companies	Actual Claims	Percentage of Claims
Within 5%	4	\$323,083,005	80.21%
5%–10%	2	\$50,836,055	12.62%
Greater than 10%	5	\$28,855,414	7.16%
Total	11	\$402,774,474	100.00%

Table C2c. Company experience ratio variability (2009–2014)

Percentage Departure	Number of Companies	Actual Claims	Percentage of Claims
Within 5%	7	\$420,662,400	96.82%
5%–10%	0	\$0	0.00%
Greater than 10%	4	\$13,800,835	3.18%
Total	11	\$434,463,235	100.00%

Table C2d. Company experience ratio variability (2010–2015)

Percentage Departure	Number of Companies	Actual Claims	Percentage of Claims
Within 5%	7	\$475,351,177	97.62%
5%–10%	1	\$1,336,979	0.27%
Greater than 10%	3	\$10,247,856	2.10%
Total	11	\$486,936,012	100.00%

Table C2e. Company experience ratio variability (2011–2016)

Percentage Departure	Number of Companies	Actual Claims	Percentage of Claims
Within 5%	5	\$476,701,406	90.78%
5%–10%	2	\$5,714,127	1.09%
Greater than 10%	4	\$42,675,129	8.13%
Total	11	\$525,090,662	100.00%

Table C2f. Company experience ratio variability (2007–2016)

Percentage Departure	Number of Companies	Actual Claims	Percentage of Claims
Within 5%	7	\$779,721,998	97.86%
5%–10%	0	\$0	0%
Greater than 10%	4	\$17,066,728	2.14%
Total	11	\$796,788,726	100.00%

As expected, for companies with fewer exposures, the estimation of A/E has more statistical variation and this variation contributes to the tendency of results for those companies to be further away from the average experience.

Results

The following tables are included in the Appendix to this document and provide the full set of results of the 2007–2016 morbidity study. They are appended in [Excel format](#) and have indices at the tops of the files with links to each of the individual tables below the indices.

- **Table 1** Total experience by groups of duration, issue ages, attained ages, and sex;
- **Table 2** Table 1 classified by smoking habits;
- **Table 3** Table 1 classified by smoking habits and policy face amounts;
- **Table 4** Total experience by illness, smoking habits, and sex;
- **Table 5** Heart attack experience by smoking habits and sex;
- **Table 6** Life-threatening cancer experience by smoking habits and sex;
- **Table 7** Stroke experience by smoking habits and sex;
- **Table 8** Total experience by return of premium type;
- **Table 9** Total experience by policy year;
- **Table 10** Total experience by underwriting type; and
- **Table 11** Total experience by issue year.

The Appendix includes tables for the following policy years:

- 2007–2008 through 2011–2012;
- 2008–2009 through 2012–2013;
- 2009–2010 through 2013–2014;
- 2010–2011 through 2014–2015;
- 2011–2012 through 2015–2016; and
- 2007–2008 through 2015–2016.

Summary result tables C3–C7 are also provided in the Appendix. In prior versions of this study report they were included in the body of the report. They show overall results as well as more detailed A/E ratios, claims, and exposure information, in total and for each sex and smoking status. The tables summarize experience data by:

- Claim and exposure information: tables C3a–C3e;
- Face amount band and illness grouping: tables C4a–C4r;
- Duration (overall and for the three most prevalent illnesses): tables C5a–C5i;
- Type of underwriting and policy/issue year: tables C6a–C6c; and
- Return of premium (ROP) feature: tables C7a–C7i.

Key observations on the results are included in the body of this report and make reference when appropriate to the summary tables in the Appendix.

For reference, the groups of illnesses used in tables C4a–C4r are:

- Cancer: Life-Threatening Cancer, Benign Brain Tumor, Aplastic Anaemia;²
- Cardio: Heart Attack, Coronary Artery Bypass, Aortic Surgery, Stroke, Heart Valve Replacement;
- Organ: Kidney/Renal Failure, Major/Vital Organ Failure/Transplant;
- Neuro: Multiple Sclerosis, Parkinson’s, Alzheimer’s, ALS/Motor Neuron Disease;
- Accident/Infectious: Blindness, Coma, Deafness, Loss of Limbs/Dismemberment, Loss of Speech, Occupational HIV Infection, Paralysis, Severe Burns, Bacterial Meningitis;
- LOIE: Loss of Independent Existence; and
- Non-life-threatening: Early Prostate Cancer (Stage T1a and T1b), Ductal Breast Cancer, Shallow/Stage 1 Malignant Melanoma/Skin Cancer, Coronary Angioplasty, West Nile Virus, Lyme Disease, *Escherichia coli* Infection, and Other Non-life-threatening Cancer.³

² Aplastic Anaemia, West Nile Virus, Lyme Disease and *Escherichia coli* Infection were not addressed as part of the 2008 CANCI study. For the purpose of this study, a best estimate annual incidence rate of 0.005/1000 was used for these conditions. The effect of these estimates is considered immaterial.

³ For example, Early Leukemia.

The following provides an overview of some of the results found in the study.

Population	A/E by Number	A/E by Amount	# Exposures
Total Experience by Policy Years			
2007–2012	53.2	53.1	1,611,623
2008–2013	52.8	52.4	1,744,203
2009–2014	51.0	50.7	1,871,476
2010–2015	51.0	51.6	1,998,757
2011–2016	50.4	50.7	2,127,059
2007–2016	51.1	51.5	3,371,833
Total Experience by Sex & Smoking Status (2007–2016)			
Male Smokers	74.3	76.1	163,495
Male Non-smokers	45.4	46.1	1,442,891
Female Smokers	74.1	74.4	126,910
Female Non-smokers	53.6	56.2	1,638,536
Total Experience by Illness Group (2007–2016)			
Cancer Group	65.6	68.2	3,371,833
Cardio Group	35.2	32.3	3,356,190
Organ Group	9.4	6.5	3,291,048
Neuro Group	29.0	35.3	3,290,925
Accident/Infectious	44.9	50.1	3,299,743
LOIE	22.5	46.5	1,302,915
Non-life-threatening	14.0	18.0	2,538,010
Total Experience by Face Amount (2007–2016)			
Face Amount < \$50,000	49.3	49.4	711,798
Face Amount \$50,000–\$99,999	50.0	50.0	1,093,275
Face Amount \$100,000–\$249,999	52.7	52.2	1,364,592
Face Amount \$250,000 and Over	55.0	51.9	202,168
Total Experience by Duration (2007–2016)			
1–5	45.6	45.3	1,838,043
6–10	55.6	56.8	1,155,917
11+	52.5	52.4	377,875

Claim and Exposure Information

General observations on the claim and exposure results shown in the Appendix, tables C3a–C3f:

1. According to the CIA educational note [Setting Expected Mortality Assumption in CGAAP Life Insurance Valuation](#) (document 202037), in order to be considered credible to some degree a study of this kind requires 2,000–3,000 claims. According to the same theory, full credibility (greatest precision) is obtained when considering the overall results of the two most recent periods and the complete study period 2007–2016 (9,185 claims). Credibility is reduced as the experience is broken down into various sub-categories.

2. For each period shown, the average face amount of policies is higher, but very close to, the average claim amount (within 5.9%). This can be partly explained by the fact that an increase in the average face amount insured (average exposure) can be observed over time, while claim payments are expected to occur, on average, several years after policy issue.
3. While more females than males owned CI policies (by count), males tended to purchase higher amounts and experienced overall higher average claim amounts.

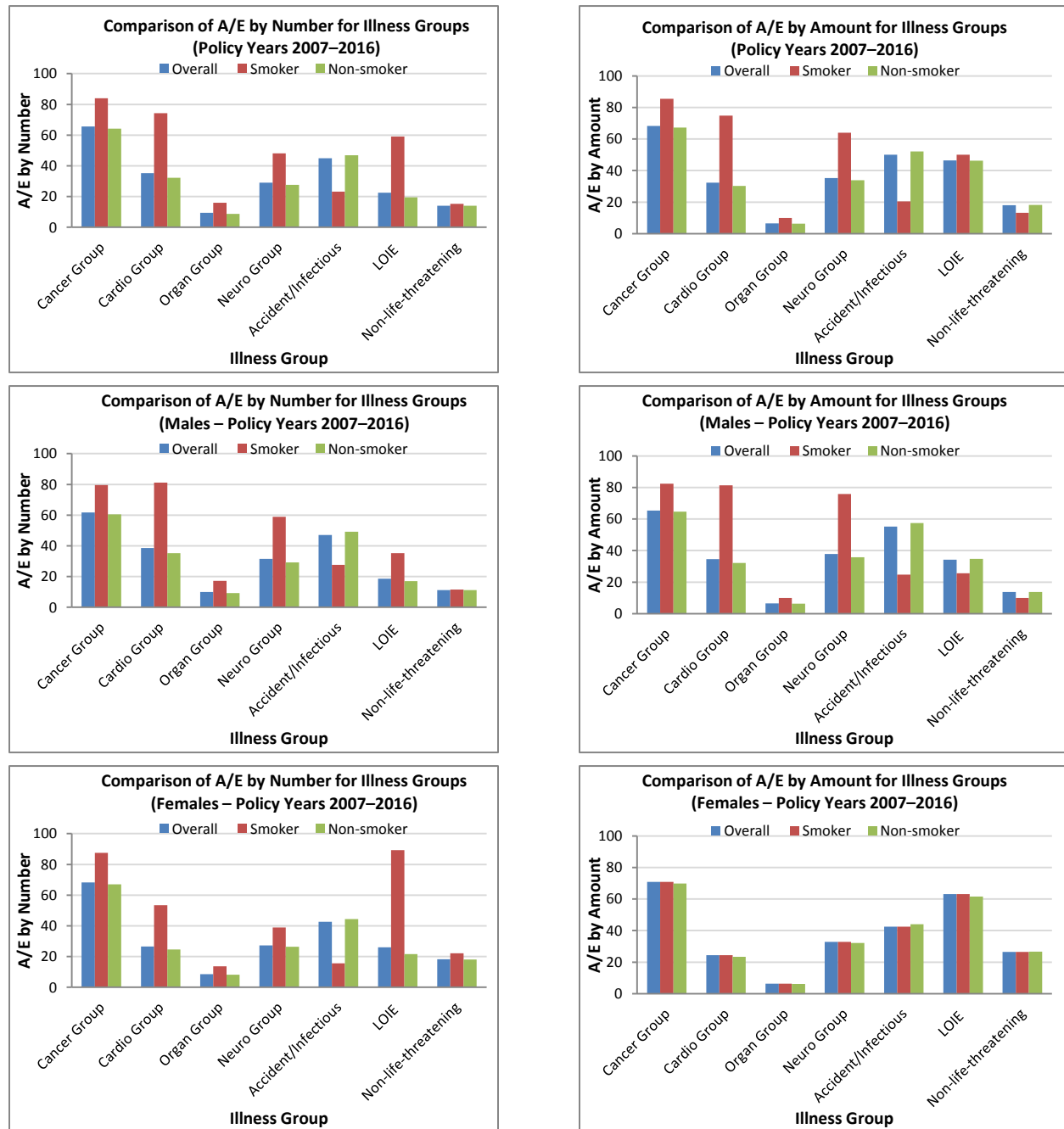
Face Amount Band and Illness Grouping

General observations on the results by face amount band and illness grouping shown in the Appendix, tables C4a–C4r:

1. The Expected tables do not reflect the impact of underwriting and, as such, overall A/E figures are expected to be below 100%. Please see page 1 of this report for additional comments on the Expected tables.
2. Looking at the entire study period, the overall A/E figures of 51.1% (by number) and 51.5% (by amount) are reflective of a majority of policies in this study that are still in early policy durations.
3. The lower A/E (by number) results in the period 2011–2016 are believed to be impacted by a lag in claim reporting. A similar and more pronounced pattern could also be observed in the last CI claim study, which covered policy anniversaries 2005 to 2014. The following table shows the common period between the current and previous study and provides an order of magnitude of the incurred but not reported (IBNR) missing in the previous study:

A/E by Number – Overall Experience	Previous Study	Current Study	Ratio
Policy Years 2007–2012	53.2	53.2	100.0%
Policy Years 2008–2013	52.7	52.8	100.2%
Policy Years 2009–2014	49.9	51.0	102.2%

Figure 1. A/E by illness group and smoking status (overall, male, and female)

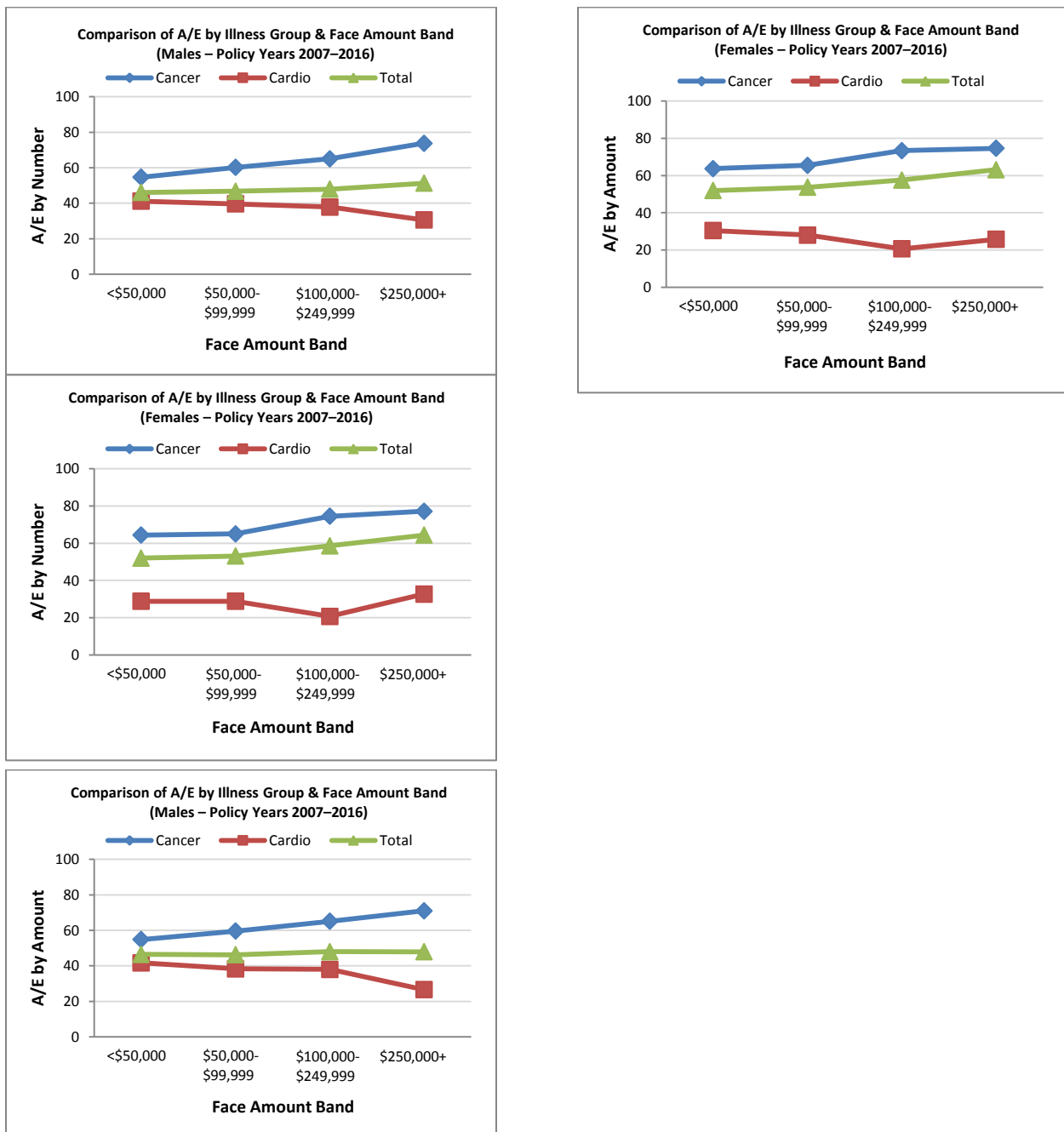


- As illustrated in Figure 1 above, smokers experience higher incidence rates than non-smokers (both sets of A/E ratios are based on expected unismoke tables). For males, smokers experience about 64%/65% (by number/by amount) more claims than their non-smoking counterparts, while the difference is only about 38%/32% (by number/by amount) for females. The widest gap can be seen on the overall Cardio group (close to 130% higher risk by number) while the Cancer group incidence is around 32% higher on insured smokers. That females are at a higher risk of developing cancer, relative to other

conditions, helps to explain the sex difference when comparing incidence risk by smoking status.

- The overall result (2007–2016) by amount is only slightly higher than by count. However, a more significant difference can be seen when looking at the cancer and neurological (lower credibility) groups, therefore pointing to higher incidence rates at higher face amounts.

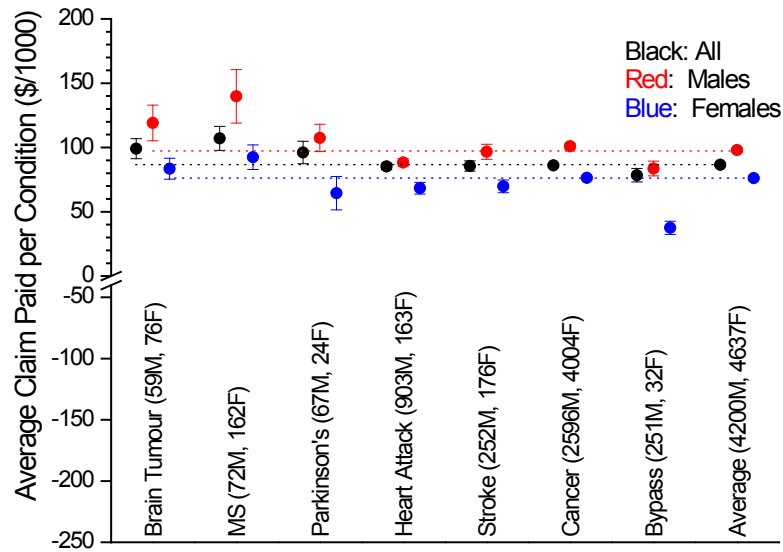
Figure 2. A/E by illness group and face amount band (male and female)



6. As illustrated in Figure 2 above, an increasing pattern in the A/E can be observed when examining the results by face amount band. This seems counterintuitive to what is expected, as additional underwriting tests are performed at higher face amounts; however, the total result is driven by the Cancer group.
7. Some additional observations can also be made by illness group:
 - The Cancer group has the largest number of claims (6,738 of 9,185) and also the highest A/E ratio (65.6%) by number. When compared to the A/E on the Cardio group, we may conclude the information collected to evaluate the risk of cancer at the time of underwriting does not capture risk indicators of equal value.
 - Cardio claims have the third highest A/E ratios (35.2% by number based on 1,839 claims), suggestive of a higher predictive value of the risk indicators collected during the underwriting process.
 - The next largest number of non-accident claims is for neurological conditions, which also have a low A/E ratio (29.0% by number based on 421 claims), possibly indicating some success in underwriting such risks. Although not fully credible, the A/E ratio by amount (35.3%) is substantially higher than the A/E ratio of 29.0% by number, which points to higher incidence rates at higher face amounts, as discussed in bullet 6 above.
 - The claims and exposures have been measured based on the percentage of the face amount of each policy (by Number category) and actual dollar amount (by Amount category) paid/exposed. This mainly affected the non-life-threatening conditions where partial payments are provided.
 - The results on the other conditions lack the appropriate credibility to present meaningful observations at this time.

Figure C1f shows the average claim amounts of seven claim conditions. Male and female sample sizes are shown in parentheses. Error bars show ± 1 standard deviation. “Average” is the average claim amount of the seven claim conditions combined, shown in the last column of the figure and by the dashed horizontal lines. Figures C1a–C1e show the same information over rolling six-year periods and are contained in the Appendix.

Figure C1f. Average claim amount of seven claim conditions for 2007–2016



Observation on figures C1a–C1f in the Appendix:

- The higher variability in the claim amounts for Benign Brain Tumour (Brain Tumour), Parkinson’s, and Multiple Sclerosis can be explained in part by the lower number of claims. That the average claim amount for these conditions is higher than for other causes is in line with comment #5 following the C4 table series.

Duration (Overall and for the Three Most Prevalent Illnesses)

The table below is a heat map showing A/E by policy duration and illness. Tables C5a–C5i in the Appendix show results by duration both overall and for the three most prevalent illnesses.

Population—Overall	A/E by Amount 2007–2016			
	Overall	Heart Attack	LT Cancer	Stroke
Duration 1	23.2	27.8	28.3	25.9
Duration 2	43.7	26.9	62.0	33.6
Duration 3	50.5	40.4	65.4	37.7
Duration 4	52.0	30.0	71.8	51.3
Duration 5	54.1	38.5	71.2	37.8
Duration 6	58.4	30.2	79.8	20.0
Duration 7	58.0	30.8	82.8	29.3
Duration 8	56.2	42.0	76.2	25.6
Duration 9	54.7	40.7	68.2	30.9
Duration 10	56.4	50.1	70.3	47.3
Duration 11	54.0	32.9	74.4	47.3
Duration 12	51.9	34.9	68.0	33.1
Duration 13	52.7	32.3	66.4	40.1
Duration 14	52.9	47.9	68.6	25.7
Duration 15+	49.9	39.8	62.5	31.3

General observations on the results by duration, both overall and for the three most prevalent illnesses:

1. The general upward trend in A/E ratios by increasing duration likely reflects the decreasing impact of underwriting selection and contract wording with increasing duration.
2. Note that the relatively low Duration 1 A/E ratio for Life-Threatening (LT) Cancer is likely due to a combination of effective underwriting and the effect of the 90-day Moratorium Period (now referred to in the “exclusions” section of the CLHIA CI Benchmark Definitions) found on Canadian CI contracts. The Moratorium Period is applied to cancer and benign brain tumour illnesses in most of the contracts covered in this study. The impact of the Moratorium Period on incidence rates can last beyond the 90-day period, as an insured exhibiting any signs or symptoms or having had medical consultations within the first 90 days following the issue date of the policy will not be able to claim for cancer or benign brain tumour under their CI contract in the future. No explicit adjustment was made to the 2008 CANCI to reflect the Moratorium Period.

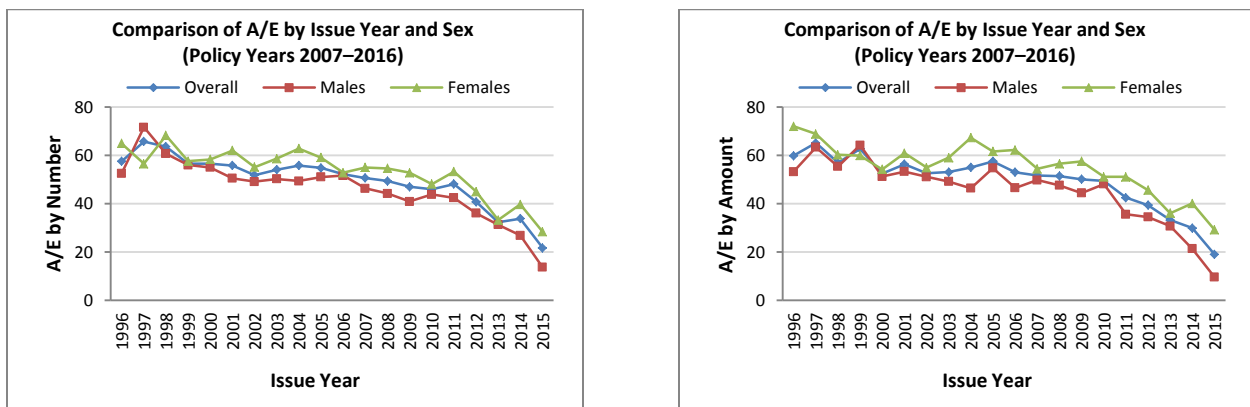
- The selection period for LT Cancer appears quite short, especially in comparison to conditions found under the Cardio group. This is likely reflective of the higher predictive value of the cardiovascular risk indicators collected during the underwriting process.

Type of Underwriting and Policy/Issue Year

General observations on the results by type of underwriting and policy/issue year shown in the Appendix, tables C6a–C6c:

- Although we do not show the exact numbers for confidentiality reasons, medical underwriting A/E is between Non-medical and Paramedical for the total experience. This pattern does not hold up when males and females are studied separately.
- The data by level of medical underwriting may not be fully reliable. In addition to small sample sizes, some participating companies may have different criteria for each category. The claim experience for the Medical category could not be assessed separately due to the confidentiality rules set out at the beginning of this report. In general terms, Non-medical underwriting refers to the assessment of an insurance application based primarily on a medical questionnaire completed by the applicant. An assessment based on a Paramedical would further include information on vital signs and fluids collected by a nurse, in most cases. Finally, an assessment based on a Medical examination would most likely also include a doctor’s physical examination and an EKG. These practices may be evolving over time.

Figure 3. A/E by issue year and sex



- As illustrated in Figure 3 above, there is a general decrease in A/E by issue year, likely due to a higher concentration of earlier policy durations in more recent policy issues, reflecting more significantly the selection effect present on new policies, especially the 90-day Moratorium Period. Additionally, female A/E ratios are consistently higher than male A/E ratios, likely driven by females having a higher proportion of cancer claims than males and A/E ratios on cancer being higher than other covered conditions.

Return of Premium Feature

General observations on the results by type of ROP shown in the Appendix, tables C7a–C7i:

1. An applicant can purchase one or more ROP options. In order to provide credible results in mutually exclusive categories, the ROP experience was split according to what is likely to be the dominant factor influencing policyholder behaviour. For example, an insured having purchased coverage for both “ROP on Surrender” and “ROP on Death” is more likely to behave like someone having purchased only the “ROP on Surrender” coverage (i.e., the dominant factor influencing policyholder behaviour). The following summary provides a breakdown of the various combinations used in separating the experience:

ROP on Surrender =	ROP on Surrender + ROP on Expiry75/100 + ROP on Death; ROP on Surrender + ROP on Expiry75/100; ROP on Surrender + ROP on Death; ROP on Surrender only.
ROP on Expiry75/100 =	ROP on Expiry75/100 + ROP on Death; ROP on Expiry75/100 only.
ROP only on Death =	ROP on Death only.
No ROP =	No ROP option selected.

2. These results do not offer a full picture of the market practices. For example, instead of a ROP on Expiry100, some companies pay the face amount of CI at attained age 100; while not a true ROP, a benefit is still paid. As this information was not available in all cases, such policies were not included in the “ROP on Expiry75/100” category.
3. In tables C7g, C7h, and C7i, the sums of claims and exposures are less than the numbers of claims and exposures for “Total Experience”. There are two reasons for this. As some of the data used in this study were obtained from the data submission of a previous study, some of the records did not provide the appropriate breakdown of ROP options listed above; others used the “Unknown” code. The sum of claims in table C7g, however, still accounts for 99.9% of the total number of claims.
4. It is difficult to properly assess whether the addition of an ROP on Surrender rider generally attracts healthier lives as one could conclude when reviewing the C7 tables series in the appendix. That the experience on policies without any ROP generally shows the second lowest A/E category would then seem counterintuitive to that hypothesis. Issues such as premium affordability and business versus personal insurance purchases likely affect the sales process and the choice of ROP option, if any.

This report was approved by the CIA Research Council, the Experience Research Committee, and the Project Oversight Group:

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APPENDIX

(Use Ctrl+Click to follow link)

Table C3a	Summary information (2007–2012)
Table C3b	Summary information (2008–2013)
Table C3c	Summary information (2009–2014)
Table C3d	Summary information (2010–2015)
Table C3e	Summary information (2011–2016)
Table C3f	Summary information (2007–2016)
Table C4a	Comparison of ratios (A/E) by number. Overall experience
Table C4b	Comparison of ratios (A/E) by number. Male experience
Table C4c	Comparison of ratios (A/E) by number. Female experience
Table C4d	Comparison of ratios (A/E) by amount. Overall experience
Table C4e	Comparison of ratios (A/E) by amount. Male experience
Table C4f	Comparison of ratios (A/E) by amount. Female experience
Table C4g	Comparison of ratios (A/E) by number and amount. Overall experience for policy years 2007–2008 through 2015–2016
Table C4h	Comparison of ratios (A/E) by number and amount. Male experience for policy years 2007–2008 through 2015–2016
Table C4i	Comparison of ratios (A/E) by number and amount. Female experience for policy years 2007–2008 through 2015–2016
Table C4j	Comparison of ratios (A/E) by number and face band. Overall experience
Table C4k	Comparison of ratios (A/E) by number and face band. Male experience
Table C4l	Comparison of ratios (A/E) by number and face band. Female experience
Table C4m	Comparison of ratios (A/E) by amount and face band. Overall experience
Table C4n	Comparison of ratios (A/E) by amount and face band. Male experience
Table C4o	Comparison of ratios (A/E) by amount and face band. Female experience
Table C4p	Comparison of ratios (A/E) by number and amount and face band. Overall experience for policy years 2007–2008 through 2015–2016
Table C4q	Comparison of ratios (A/E) by number and amount and face band. Male experience for policy years 2007–2008 through 2015–2016
Table C4r	Comparison of ratios (A/E) by number and amount and face band. Female experience for policy years 2007–2008 through 2015–2016
Figure C1a	Average claim amount of seven claim conditions for 2007–2012
Figure C1b	Average claim amount of seven claim conditions for 2008–2013
Figure C1c	Average claim amount of seven claim conditions for 2009–2014
Figure C1d	Average claim amount of seven claim conditions for 2010–2015
Figure C1e	Average claim amount of seven claim conditions for 2011–2016
Figure C1f	Average claim amount of seven claim conditions for 2007–2016

Table C5a	Comparison of ratios (A/E) by number for durations 1 to 15+ and for durations 1 to 15+ for three illnesses. Overall experience
Table C5b	Comparison of ratios (A/E) by number for durations 1 to 15+ and for durations 1 to 15+ for three illnesses. Male experience
Table C5c	Comparison of ratios (A/E) by number for durations 1 to 15+ and for durations 1 to 15+ for three illnesses. Female experience
Table C5d	Comparison of ratios (A/E) by amount for durations 1 to 15+ and for durations 1 to 15+ for three illnesses. Overall experience
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Table C6b	Comparison of ratios (A/E) by number and amount for underwriting, policy year, and issue year. Male experience for 2007–2008 through 2015–2016
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Table C7a	Comparison of ratios (A/E) by number for ROP. Overall experience
Table C7b	Comparison of ratios (A/E) by number for ROP. Male experience
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Table C7d	Comparison of ratios (A/E) by amount for ROP. Overall experience
Table C7e	Comparison of ratios (A/E) by amount for ROP. Male experience
Table C7f	Comparison of ratios (A/E) by amount for ROP. Female experience
Table C7g	Comparison of ratios (A/E) by number and amount for ROP. Overall experience for 2007–2008 through 2015–2016
Table C7h	Comparison of ratios (A/E) by number and amount for ROP. Male experience for 2007–2008 through 2015–2016
Table C7i	Comparison of ratios (A/E) by number and amount for ROP. Female experience for 2007–2008 through 2015–2016

Appendix Tables and Figures

Table C3a. Summary information (2007–2012)

	Overall		Male		Female	
	Claims	Exposures	Claims	Exposures	Claims	Exposures
Number	4,297	1,611,623	2,108	777,421	2,188	834,202
Amount (\$,000)	362,662	144,118,947	200,459	78,592,217	162,203	65,526,730
Average	\$84,399	\$89,425	\$95,094	\$101,094	\$74,133	\$78,550

Table C3b. Summary information (2008–2013)

	Overall		Male		Female	
	Claims	Exposures	Claims	Exposures	Claims	Exposures
Number	4,745	1,744,203	2,330	836,189	2,414	908,014
Amount (\$,000)	402,774	157,547,149	224,537	85,529,988	178,998	72,017,161
Average	\$84,884	\$90,326	\$96,368	\$102,285	\$73,844	\$79,313

Table C3c. Summary information (2009–2014)

	Overall		Male		Female	
	Claims	Exposures	Claims	Exposures	Claims	Exposures
Number	5,058	1,871,476	2,452	891,989	2,606	979,488
Amount (\$,000)	434,463	170,288,287	237,294	92,014,643	197,169	78,273,645
Average	\$85,896	\$90,991	\$96,776	\$103,157	\$75,660	\$79,913

Table C3d. Summary information (2010–2015)

	Overall		Male		Female	
	Claims	Exposures	Claims	Exposures	Claims	Exposures
Number	5,543	1,998,757	2,642	947,711	2,901	1,051,047
Amount (\$,000)	486,936	182,745,274	262,399	98,299,293	224,537	84,445,982
Average	\$87,847	\$91,429	\$99,318	\$103,723	\$77,400	\$80,345

Table C3e. Summary information (2011–2016)

	Overall		Male		Female	
	Claims	Exposures	Claims	Exposures	Claims	Exposures
Number	5,969	2,127,059	2,830	1,003,445	3,139	1,123,614
Amount (\$,000)	525,091	195,103,710	283,384	104,395,285	241,706	90,708,425
Average	\$87,970	\$91,725	\$100,136	\$104,037	\$77,001	\$80,729

Table C3f. Summary information (2007–2016)

	Overall		Male		Female	
	Claims	Exposures	Claims	Exposures	Claims	Exposures
Number	9,185	3,371,833	4,407	1,606,386	4,777	1,765,446
Amount (\$,000)	796,789	305,265,197	431,909	164,685,133	364,880	140,580,064
Average	\$86,749	\$90,534	\$98,005	\$102,519	\$76,383	\$79,629

Table C4a. Comparison of ratios (A/E) by number. Overall experience

Population—Overall	A/E by Number						S.D.
	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	53.2	52.8	51.0	51.0	50.4	51.1	0.5
Face Amount < \$50,000	51.9	51.3	49.7	48.9	47.9	49.3	1.0
Face Amount \$50,000–\$99,999	51.9	52.7	50.5	50.9	49.5	50.0	0.9
Face Amount \$100,000–\$249,999	54.3	53.0	51.5	51.7	52.4	52.7	0.9
Face Amount \$250,000 and Over	58.6	58.5	57.2	56.7	53.5	55.0	2.3
Cancer Group	67.4	67.7	65.5	66.3	65.2	65.6	0.8
Cardio Group	38.3	36.9	35.3	34.2	33.5	35.2	0.8
Organ Group	10.2	10.7	9.6	6.8	9.1	9.4	1.3
Neuro Group	29.4	28.4	28.2	27.7	29.2	29.0	1.4
Accident/Infectious	48.9	43.2	42.0	44.2	44.4	44.9	4.7
LOIE	11.5	19.1	27.1	26.1	27.2	22.5	5.8
Non-life-threatening	15.4	14.4	12.4	13.6	13.9	14.0	2.8
Total Smoker Experience	79.7	78.3	74.8	72.0	71.4	74.2	2.5
Face Amount < \$50,000	76.8	75.7	76.1	71.7	69.3	72.2	3.6
Face Amount \$50,000–\$99,999	81.0	76.9	70.9	71.7	72.0	75.7	4.5
Face Amount \$100,000–\$249,999	82.3	83.2	75.9	70.8	73.3	75.5	5.3
Face Amount \$250,000 and Over	93.5	95.5	87.7	88.0	79.7	80.5	15.5
Cancer Group	86.9	87.7	85.3	83.1	84.3	84.0	3.5
Cardio Group	87.3	83.4	73.4	68.4	64.4	74.3	4.6
Organ Group	17.7	21.2	16.4	16.0	15.6	16.0	6.1
Neuro Group	47.6	39.4	46.4	44.8	46.6	48.1	6.9
Accident/Infectious	34.7	21.9	20.9	30.0	19.2	23.2	11.6
LOIE	0.0	0.0	104.9	94.9	86.5	59.1	34.1
Non-life-threatening	19.8	14.7	9.0	12.0	13.3	15.3	11.9
Total Non-smoker Experience	51.0	50.8	49.3	49.6	49.0	49.4	0.5
Face Amount < \$50,000	48.4	47.9	46.2	46.1	45.4	46.4	1.0
Face Amount \$50,000–\$99,999	49.7	50.9	49.0	49.5	48.0	48.2	0.9
Face Amount \$100,000–\$249,999	53.0	51.6	50.4	50.9	51.6	51.7	0.9
Face Amount \$250,000 and Over	57.3	57.2	56.2	55.7	52.8	54.2	2.3
Cancer Group	65.8	66.1	64.1	65.1	64.0	64.2	0.8
Cardio Group	34.3	33.3	32.5	31.8	31.4	32.3	0.8
Organ Group	9.5	9.8	9.0	6.1	8.6	8.8	1.3
Neuro Group	27.9	27.5	26.9	26.5	28.0	27.6	1.4
Accident/Infectious	50.3	45.3	44.0	45.4	46.5	46.9	5.0
LOIE	12.5	20.7	20.5	20.5	22.6	19.5	5.6
Non-life-threatening	15.1	14.4	12.6	13.7	13.9	14.0	2.8

Table C4b. Comparison of ratios (A/E) by number. Male experience

Population—Male	A/E by Number						S.D.
	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	50.3	50.0	47.8	47.1	46.4	47.5	0.7
Face Amount < \$50,000	48.7	47.7	48.1	46.1	44.9	46.1	1.5
Face Amount \$50,000–\$99,999	51.3	51.6	47.8	46.9	44.0	46.8	1.3
Face Amount \$100,000–\$249,999	49.0	48.5	46.4	46.9	48.5	47.9	1.2
Face Amount \$250,000 and Over	58.0	57.9	53.9	51.5	49.1	51.3	2.6
Cancer Group	65.1	66.2	62.8	62.5	60.6	61.7	1.2
Cardio Group	41.6	40.3	38.6	37.4	36.9	38.5	1.0
Organ Group	11.7	11.3	9.5	6.4	8.2	9.9	1.7
Neuro Group	32.1	29.2	30.1	29.8	32.6	31.5	2.3
Accident/Infectious	46.7	40.9	42.5	45.3	50.5	47.0	6.5
LOIE	7.7	19.5	22.3	24.7	26.4	18.7	7.6
Non-life-threatening	13.9	11.8	9.9	9.9	10.7	11.2	3.2
Total Smoker Experience	77.9	81.3	75.6	72.3	71.8	74.3	3.3
Face Amount < \$50,000	67.7	69.8	72.9	70.2	72.9	71.1	5.2
Face Amount \$50,000–\$99,999	78.0	80.4	66.6	63.0	60.5	69.4	5.8
Face Amount \$100,000–\$249,999	92.9	97.2	87.7	83.2	83.0	84.6	7.0
Face Amount \$250,000 and Over	88.4	101.1	93.0	95.1	79.5	77.5	17.3
Cancer Group	72.7	86.7	84.3	84.4	85.6	79.5	5.1
Cardio Group	95.9	90.8	79.6	73.2	70.0	81.2	5.5
Organ Group	13.4	19.3	12.4	12.0	17.6	17.3	7.7
Neuro Group	65.4	53.3	54.4	44.8	50.3	58.9	11.3
Accident/Infectious	55.3	35.0	33.3	32.0	15.3	27.7	16.0
LOIE	0.0	0.0	62.5	56.7	52.0	35.3	35.3
Non-life-threatening	19.0	12.8	8.3	7.0	7.9	11.5	12.8
Total Non-smoker Experience	47.9	47.5	45.7	45.2	44.5	45.4	0.7
Face Amount < \$50,000	45.8	44.5	44.6	42.9	41.4	42.7	1.5
Face Amount \$50,000–\$99,999	48.9	49.2	46.2	45.6	42.7	45.0	1.3
Face Amount \$100,000–\$249,999	46.5	45.9	44.3	45.1	46.8	46.1	1.2
Face Amount \$250,000 and Over	56.8	56.3	52.5	50.0	48.1	50.4	2.6
Cancer Group	64.4	64.5	61.1	60.9	58.9	60.4	1.2
Cardio Group	37.0	36.2	35.4	34.7	34.5	35.2	1.0
Organ Group	11.5	10.6	9.2	5.9	7.4	9.2	1.7
Neuro Group	29.1	27.1	28.1	28.7	31.2	29.3	2.3
Accident/Infectious	45.7	41.5	43.5	46.7	54.1	49.1	7.0
LOIE	8.5	21.5	18.4	21.6	24.1	17.1	7.6
Non-life-threatening	13.5	11.7	10.0	10.1	10.9	11.2	3.3

Table C4c. Comparison of ratios (A/E) by number. Female experience

Population—Female	A/E by Number						S.D.
	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	56.2	55.7	54.4	55.2	54.7	55.0	0.8
Face Amount < \$50,000	54.6	54.2	50.9	51.2	50.4	52.0	1.4
Face Amount \$50,000–\$99,999	52.6	53.7	53.1	54.7	54.7	53.1	1.3
Face Amount \$100,000–\$249,999	61.1	58.7	57.9	57.8	57.4	58.6	1.4
Face Amount \$250,000 and Over	60.2	60.1	65.7	69.8	64.7	64.4	4.6
Cancer Group	69.0	68.7	67.5	69.0	68.6	68.3	1.1
Cardio Group	29.5	27.9	26.8	26.1	24.9	26.5	1.3
Organ Group	7.8	9.8	9.8	7.5	10.4	8.6	2.0
Neuro Group	27.5	27.7	26.9	26.2	26.7	27.2	1.8
Accident/Infectious	51.5	46.0	41.5	42.8	37.5	42.6	6.7
LOIE	15.1	18.7	31.5	27.4	28.0	26.1	8.7
Non-life-threatening	17.8	18.6	16.5	19.3	18.6	18.3	5.0
Total Smoker Experience	81.8	74.7	73.8	71.6	70.8	74.1	3.7
Face Amount < \$50,000	85.4	81.2	79.0	73.2	66.0	73.2	5.1
Face Amount \$50,000–\$99,999	84.7	72.6	76.4	82.7	86.4	83.6	7.1
Face Amount \$100,000–\$249,999	64.1	59.2	55.4	49.3	56.8	59.7	7.8
Face Amount \$250,000 and Over	110.9	75.8	69.4	64.2	80.2	90.5	34.2
Cancer Group	97.8	88.5	86.1	82.1	83.2	87.5	4.8
Cardio Group	60.5	60.5	54.7	53.8	47.7	53.4	7.8
Organ Group	26.1	25.2	24.4	23.8	11.6	13.6	9.6
Neuro Group	32.8	27.7	39.7	44.8	43.3	38.9	8.5
Accident/Infectious	0.0	0.0	0.0	26.9	25.8	15.6	15.6
LOIE	0.0	0.0	159.0	143.0	129.6	89.3	63.1
Non-life-threatening	21.4	18.1	10.5	21.2	23.0	22.1	24.0
Total Non-smoker Experience	54.2	54.3	53.1	54.1	53.7	53.6	0.8
Face Amount < \$50,000	50.4	50.7	47.5	48.7	48.6	49.4	1.5
Face Amount \$50,000–\$99,999	50.5	52.5	51.7	53.0	53.0	51.3	1.4
Face Amount \$100,000–\$249,999	61.0	58.7	58.0	58.1	57.4	58.6	1.5
Face Amount \$250,000 and Over	58.7	59.7	65.6	70.0	64.3	63.7	4.6
Cancer Group	66.8	67.3	66.2	68.2	67.7	67.0	1.1
Cardio Group	27.2	25.6	24.9	24.4	23.6	24.7	1.3
Organ Group	6.3	8.6	8.7	6.4	10.4	8.2	2.0
Neuro Group	27.0	27.8	26.0	24.9	25.7	26.4	1.8
Accident/Infectious	55.7	49.5	44.5	43.9	38.3	44.5	7.0
LOIE	16.2	20.0	22.5	19.5	21.3	21.7	8.2
Non-life-threatening	17.5	18.6	16.8	19.2	18.4	18.1	5.1

Table C4d. Comparison of ratios (A/E) by amount. Overall experience

Population—Overall	A/E by Amount					
	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016
Total Experience	53.1	52.4	50.7	51.6	50.7	51.5
Face Amount < \$50,000	52.6	51.6	49.4	49.0	47.6	49.4
Face Amount \$50,000–\$99,999	52.1	52.6	50.4	50.9	49.5	50.0
Face Amount \$100,000–\$249,999	53.4	52.6	51.1	51.0	51.8	52.2
Face Amount \$250,000 and Over	53.6	52.0	50.7	53.7	50.4	51.9
Cancer Group	69.7	69.0	67.2	69.2	67.7	68.2
Cardio Group	33.7	32.9	32.4	31.8	31.6	32.3
Organ Group	7.4	8.5	7.4	4.7	5.8	6.5
Neuro Group	37.3	36.4	32.8	32.2	33.3	35.3
Accident/Infectious	59.5	51.7	41.8	47.4	42.9	50.1
LOIE	38.0	44.0	45.6	36.5	47.8	46.5
Non-life-threatening	16.8	17.7	15.8	18.9	19.3	18.0
Total Smoker Experience	81.1	80.2	75.5	74.1	73.1	75.5
Face Amount < \$50,000	80.1	78.8	79.0	76.4	71.7	75.1
Face Amount \$50,000–\$99,999	82.8	78.0	71.0	72.1	72.3	76.7
Face Amount \$100,000–\$249,999	83.7	84.5	77.8	72.8	72.3	75.7
Face Amount \$250,000 and Over	72.4	74.7	73.7	78.8	77.6	73.1
Cancer Group	87.0	87.4	83.4	84.6	88.4	85.4
Cardio Group	89.2	88.1	78.2	72.5	64.6	74.9
Organ Group	7.6	13.6	11.4	10.9	11.4	9.9
Neuro Group	66.7	58.8	61.8	58.8	55.8	63.9
Accident/Infectious	35.2	16.4	15.4	20.0	12.0	20.4
LOIE	0.0	0.0	86.9	79.4	73.7	50.0
Non-life-threatening	16.5	13.6	11.0	12.0	12.7	13.3
Total Non-smoker Experience	51.6	50.9	49.5	50.5	49.7	50.3
Face Amount < \$50,000	49.1	48.3	45.9	46.0	45.1	46.5
Face Amount \$50,000–\$99,999	49.7	50.7	49.0	49.5	48.1	48.2
Face Amount \$100,000–\$249,999	52.0	51.1	49.9	50.1	51.0	51.2
Face Amount \$250,000 and Over	53.0	51.2	49.9	52.9	49.6	51.2
Cancer Group	68.7	68.0	66.4	68.5	66.8	67.3
Cardio Group	30.6	30.0	30.1	29.8	30.1	30.2
Organ Group	7.4	8.2	7.1	4.3	5.5	6.3
Neuro Group	35.6	35.2	31.3	30.9	32.2	33.8
Accident/Infectious	61.2	54.1	43.5	49.2	44.8	52.1
LOIE	40.4	46.7	43.2	34.1	46.3	46.3
Non-life-threatening	16.8	17.9	16.0	19.2	19.6	18.2

Table C4e. Comparison of ratios (A/E) by amount. Male experience

Population—Male	A/E by Amount					
	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016
Total Experience	49.9	49.6	47.2	47.4	46.8	47.6
Face Amount < \$50,000	49.3	48.1	48.3	46.4	45.0	46.5
Face Amount \$50,000–\$99,999	50.5	50.7	47.3	46.4	43.5	46.2
Face Amount \$100,000–\$249,999	48.4	48.4	46.5	47.0	48.7	48.0
Face Amount \$250,000 and Over	51.8	51.1	47.7	48.6	46.1	47.9
Cancer Group	68.4	69.0	65.0	66.3	64.6	65.4
Cardio Group	35.8	35.0	34.1	33.6	33.8	34.5
Organ Group	8.4	8.9	7.8	4.4	5.1	6.6
Neuro Group	40.9	38.8	36.5	34.6	36.7	37.8
Accident/Infectious	60.8	53.3	46.0	55.0	50.9	55.2
LOIE	11.4	24.3	23.7	21.9	48.8	34.2
Non-life-threatening	16.7	15.1	13.5	13.6	13.9	13.7
Total Smoker Experience	81.9	87.1	79.5	78.3	74.3	76.1
Face Amount < \$50,000	72.3	74.5	75.8	74.0	74.9	74.8
Face Amount \$50,000–\$99,999	78.1	80.3	65.9	62.1	59.9	69.4
Face Amount \$100,000–\$249,999	91.5	96.2	87.6	83.7	81.0	83.4
Face Amount \$250,000 and Over	72.1	83.9	80.8	88.4	77.1	69.9
Cancer Group	78.4	93.1	86.2	91.2	90.4	82.3
Cardio Group	97.5	96.1	85.5	78.7	70.8	81.4
Organ Group	3.3	12.0	9.3	8.9	13.7	10.0
Neuro Group	87.4	77.6	74.4	66.2	60.7	75.9
Accident/Infectious	50.6	23.6	22.1	21.1	10.1	24.8
LOIE	0.0	0.0	44.4	40.8	38.1	25.7
Non-life-threatening	16.9	13.8	11.5	9.7	7.8	10.0
Total Non-smoker Experience	48.0	47.5	45.4	45.8	45.4	46.1
Face Amount < \$50,000	46.2	44.6	44.8	43.0	41.4	42.9
Face Amount \$50,000–\$99,999	48.1	48.2	45.8	45.1	42.2	44.3
Face Amount \$100,000–\$249,999	46.0	45.9	44.5	45.2	47.2	46.2
Face Amount \$250,000 and Over	51.1	49.9	46.6	47.3	45.1	47.2
Cancer Group	67.8	67.7	63.9	65.1	63.3	64.6
Cardio Group	32.3	31.7	31.4	31.4	32.0	32.1
Organ Group	8.8	8.7	7.7	4.1	4.6	6.4
Neuro Group	38.0	36.5	34.3	32.8	35.5	35.7
Accident/Infectious	61.7	55.7	47.8	57.6	53.9	57.5
LOIE	12.2	25.9	22.3	20.7	49.4	34.8
Non-life-threatening	16.7	15.1	13.6	13.7	14.2	13.8

Table C4f. Comparison of ratios (A/E) by amount. Female experience

Population—Female	A/E by Amount					
	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016
Total Experience	57.8	56.3	55.9	57.5	56.2	57.0
Face Amount < \$50,000	55.3	54.6	50.3	51.3	49.8	51.9
Face Amount \$50,000–\$99,999	53.5	54.4	53.4	55.2	55.3	53.7
Face Amount \$100,000–\$249,999	60.0	58.1	57.1	56.3	55.9	57.6
Face Amount \$250,000 and Over	59.1	54.8	59.2	68.1	62.0	63.1
Cancer Group	70.8	68.9	69.2	71.9	70.6	70.8
Cardio Group	25.6	25.1	26.0	25.2	23.9	24.4
Organ Group	5.4	7.7	6.5	5.3	7.4	6.3
Neuro Group	33.8	34.1	29.2	29.9	30.0	32.9
Accident/Infectious	57.4	49.2	35.4	36.0	31.1	42.4
LOIE	76.0	71.7	75.7	56.2	46.4	63.1
Non-life-threatening	16.8	23.2	20.5	29.4	29.8	26.5
Total Smoker Experience	79.8	69.2	69.0	67.4	71.2	74.4
Face Amount < \$50,000	87.5	83.0	82.2	78.6	68.5	75.4
Face Amount \$50,000–\$99,999	88.6	75.0	77.4	84.6	88.0	86.0
Face Amount \$100,000–\$249,999	69.8	63.6	60.4	53.5	57.0	61.9
Face Amount \$250,000 and Over	73.4	39.3	46.4	42.8	79.5	85.2
Cancer Group	95.7	81.4	80.4	77.8	86.3	88.7
Cardio Group	52.8	53.2	46.8	45.9	38.6	47.1
Organ Group	18.8	17.8	17.0	16.4	5.3	9.5
Neuro Group	43.5	37.4	47.2	50.1	50.0	50.2
Accident/Infectious	0.0	0.0	0.0	17.4	16.6	10.2
LOIE	0.0	0.0	166.7	151.0	138.3	95.1
Non-life-threatening	15.6	13.2	9.6	17.6	24.5	21.3
Total Non-smoker Experience	56.7	55.7	55.3	57.1	55.6	56.2
Face Amount < \$50,000	51.5	51.3	46.9	48.4	48.0	49.4
Face Amount \$50,000–\$99,999	51.2	53.1	52.0	53.6	53.5	51.8
Face Amount \$100,000–\$249,999	59.6	57.9	56.9	56.4	55.9	57.5
Face Amount \$250,000 and Over	58.7	55.2	59.6	68.7	61.6	62.6
Cancer Group	69.6	68.3	68.7	71.6	69.9	69.9
Cardio Group	24.3	23.8	25.0	24.3	23.3	23.4
Organ Group	4.6	7.2	6.0	4.7	7.5	6.1
Neuro Group	33.3	33.9	28.4	29.0	29.1	32.1
Accident/Infectious	60.6	51.8	37.2	36.8	31.7	44.0
LOIE	79.9	75.2	71.4	51.9	42.3	61.6
Non-life-threatening	16.9	23.7	21.0	29.9	30.0	26.7

**Table C4g. Comparison of ratios (A/E) by number and amount.
Overall experience for policy years 2007–2008 through 2015–2016**

Population—Overall	A/E by Number			A/E by Amount		
	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	9,185	3,371,833	51.1	796,788,726	305,265,197,468	51.5
Face Amount < \$50,000	2,358	711,798	49.3	55,324,359	17,050,535,257	49.4
Face Amount \$50,000–\$99,999	2,874	1,093,275	50.0	153,970,497	58,806,836,122	50.0
Face Amount \$100,000–\$249,999	3,357	1,364,592	52.7	381,692,375	155,786,637,694	52.2
Face Amount \$250,000 and Over	596	202,168	55.0	205,801,495	73,621,188,395	51.9
Cancer Group	6,738	3,371,833	65.6	581,520,569	305,265,197,468	68.2
Cardio Group	1,839	3,356,190	35.2	154,706,414	305,033,206,410	32.3
Organ Group	53	3,291,048	9.4	3,393,727	300,559,358,809	6.5
Neuro Group	421	3,290,925	29.0	43,217,089	300,550,406,049	35.3
Accident/Infectious	93	3,299,743	44.9	9,328,478	301,109,154,123	50.1
LOIE	15	1,302,915	22.5	2,590,000	91,037,512,394	46.5
Non-life-threatening	26	2,538,010	14.0	2,994,949	39,892,176,892	18.0
Total Smoker Experience	907	290,405	74.2	55,436,485	19,233,570,353	75.5
Face Amount < \$50,000	392	103,817	72.2	8,658,142	2,298,464,252	75.1
Face Amount \$50,000–\$99,999	284	98,492	75.7	15,318,345	5,278,907,634	76.7
Face Amount \$100,000–\$249,999	204	80,217	75.5	22,824,998	8,911,296,876	75.7
Face Amount \$250,000 and Over	27	7,879	80.5	8,635,000	2,744,901,592	73.1
Cancer Group	578	290,405	84.0	33,937,766	19,233,570,353	85.4
Cardio Group	265	287,766	74.3	16,974,103	19,191,153,895	74.9
Organ Group	7	280,616	16.0	285,000	18,831,485,570	9.9
Neuro Group	48	280,612	48.1	3,859,116	18,831,325,570	63.9
Accident/Infectious	4	281,759	23.2	236,000	18,896,570,723	20.4
LOIE	3	111,922	59.1	150,000	5,727,221,497	50.0
Non-life-threatening	2	200,606	15.3	94,500	2,127,973,169	13.3
Total Non-smoker Experience	8,278	3,081,428	49.4	741,352,241	286,031,627,115	50.3
Face Amount < \$50,000	1,965	607,981	46.4	46,666,217	14,752,071,005	46.5
Face Amount \$50,000–\$99,999	2,591	994,783	48.2	138,652,152	53,527,928,488	48.2
Face Amount \$100,000–\$249,999	3,153	1,284,375	51.7	358,867,377	146,875,340,818	51.2
Face Amount \$250,000 and Over	569	194,289	54.2	197,166,495	70,876,286,804	51.2
Cancer Group	6,160	3,081,428	64.2	547,582,803	286,031,627,115	67.3
Cardio Group	1,574	3,068,424	32.3	137,732,311	285,842,052,515	30.2
Organ Group	46	3,010,432	8.8	3,108,727	281,727,873,239	6.3
Neuro Group	373	3,010,312	27.6	39,357,973	281,719,080,480	33.8
Accident/Infectious	89	3,017,984	46.9	9,092,478	282,212,583,400	52.1
LOIE	12	1,190,993	19.5	2,440,000	85,310,290,897	46.3
Non-life-threatening	24	2,337,403	14.0	2,900,449	37,764,203,724	18.2

**Table C4h. Comparison of ratios (A/E) by number and amount.
Male experience for policy years 2007–2008 through 2015–2016**

Population—Male	A/E by Number			A/E by Amount		
	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	4,407	1,606,386	47.5	431,908,595	164,685,133,353	47.6
Face Amount < \$50,000	996	286,860	46.1	23,490,937	6,881,574,839	46.5
Face Amount \$50,000–\$99,999	1,310	486,465	46.8	69,646,507	26,347,855,206	46.2
Face Amount \$100,000–\$249,999	1,702	698,509	47.9	198,321,656	80,811,949,646	48.0
Face Amount \$250,000 and Over	399	134,552	51.3	140,449,495	50,643,753,662	47.9
Cancer Group	2,657	1,606,386	61.7	269,317,965	164,685,133,353	65.4
Cardio Group	1,454	1,600,013	38.5	129,410,472	164,587,055,589	34.5
Organ Group	34	1,566,371	9.9	2,317,273	162,059,971,462	6.6
Neuro Group	192	1,566,327	31.5	22,705,121	162,056,430,506	37.8
Accident/Infectious	52	1,571,057	47.0	6,197,478	162,366,253,454	55.2
LOIE	6	605,041	18.7	1,095,000	49,223,134,968	34.2
Non-life-threatening	12	1,212,676	11.2	1,507,786	21,244,536,930	13.7
Total Smoker Experience	496	163,495	74.3	34,567,359	12,102,865,585	76.1
Face Amount < \$50,000	186	49,600	71.1	4,230,371	1,120,026,656	74.8
Face Amount \$50,000–\$99,999	145	56,079	69.4	7,747,570	3,017,710,905	69.4
Face Amount \$100,000–\$249,999	144	51,781	84.6	16,114,418	5,813,429,176	83.4
Face Amount \$250,000 and Over	20	6,035	77.5	6,475,000	2,151,698,848	69.9
Cancer Group	241	163,495	79.5	16,665,369	12,102,865,585	82.3
Cardio Group	218	162,336	81.2	14,949,740	12,082,712,164	81.4
Organ Group	5	158,201	17.3	210,000	11,867,676,191	10.0
Neuro Group	27	158,201	58.9	2,442,250	11,867,676,191	75.9
Accident/Infectious	3	158,953	27.7	200,000	11,911,300,831	24.8
LOIE	1	64,241	35.3	50,000	3,675,469,792	25.7
Non-life-threatening	1	115,959	11.5	50,000	1,342,088,341	10.0
Total Non-smoker Experience	3,912	1,442,891	45.4	397,341,236	152,582,267,768	46.1
Face Amount < \$50,000	810	237,259	42.7	19,260,566	5,761,548,183	42.9
Face Amount \$50,000–\$99,999	1,165	430,387	45.0	61,898,937	23,330,144,301	44.3
Face Amount \$100,000–\$249,999	1,557	646,728	46.1	182,207,238	74,998,520,470	46.2
Face Amount \$250,000 and Over	379	128,517	50.4	133,974,495	48,492,054,814	47.2
Cancer Group	2,416	1,442,891	60.4	252,652,596	152,582,267,768	64.6
Cardio Group	1,236	1,437,677	35.2	114,460,732	152,504,343,425	32.1
Organ Group	29	1,408,170	9.2	2,107,273	150,192,295,271	6.4
Neuro Group	165	1,408,126	29.3	20,262,871	150,188,754,315	35.7
Accident/Infectious	49	1,412,103	49.1	5,997,478	150,454,952,624	57.5
LOIE	5	540,799	17.1	1,045,000	45,547,665,175	34.8
Non-life-threatening	12	1,096,717	11.2	1,457,786	19,902,448,589	13.8

**Table C4i. Comparison of ratios (A/E) by number and amount.
Female experience for policy years 2007–2008 through 2015–2016**

Population—Female	A/E by Number			A/E by Amount		
	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	4,777	1,765,446	55.0	364,880,131	140,580,064,115	57.0
Face Amount < \$50,000	1,362	424,938	52.0	31,833,422	10,168,960,418	51.9
Face Amount \$50,000–\$99,999	1,564	606,810	53.1	84,323,990	32,458,980,916	53.7
Face Amount \$100,000–\$249,999	1,655	666,083	58.6	183,370,719	74,974,688,047	57.6
Face Amount \$250,000 and Over	196	67,616	64.4	65,352,000	22,977,434,734	63.1
Cancer Group	4,081	1,765,446	68.3	312,202,604	140,580,064,115	70.8
Cardio Group	385	1,756,177	26.5	25,295,942	140,446,150,821	24.4
Organ Group	19	1,724,677	8.6	1,076,454	138,499,387,347	6.3
Neuro Group	229	1,724,598	27.2	20,511,968	138,493,975,544	32.9
Accident/Infectious	41	1,728,686	42.6	3,131,000	138,742,900,669	42.4
LOIE	9	697,875	26.1	1,495,000	41,814,377,426	63.1
Non-life-threatening	13	1,325,334	18.3	1,487,163	18,647,639,962	26.5
Total Smoker Experience	411	126,910	74.1	20,869,126	7,130,704,768	74.4
Face Amount < \$50,000	206	54,216	73.2	4,427,771	1,178,437,596	75.4
Face Amount \$50,000–\$99,999	138	42,413	83.6	7,570,775	2,261,196,729	86.0
Face Amount \$100,000–\$249,999	59	28,436	59.7	6,710,580	3,097,867,700	61.9
Face Amount \$250,000 and Over	7	1,844	90.5	2,160,000	593,202,744	85.2
Cancer Group	337	126,910	87.5	17,272,397	7,130,704,768	88.7
Cardio Group	47	125,430	53.4	2,024,363	7,108,441,730	47.1
Organ Group	2	122,416	13.6	75,000	6,963,809,379	9.5
Neuro Group	21	122,412	38.9	1,416,866	6,963,649,379	50.2
Accident/Infectious	1	122,805	15.6	36,000	6,985,269,893	10.2
LOIE	2	47,681	89.3	100,000	2,051,751,705	95.1
Non-life-threatening	1	84,648	22.1	44,500	785,884,828	21.3
Total Non-smoker Experience	4,367	1,638,536	53.6	344,011,005	133,449,359,347	56.2
Face Amount < \$50,000	1,156	370,722	49.4	27,405,651	8,990,522,823	49.4
Face Amount \$50,000–\$99,999	1,425	564,396	51.3	76,753,215	30,197,784,187	51.8
Face Amount \$100,000–\$249,999	1,596	637,646	58.6	176,660,139	71,876,820,347	57.5
Face Amount \$250,000 and Over	189	65,772	63.7	63,192,000	22,384,231,990	62.6
Cancer Group	3,744	1,638,536	67.0	294,930,207	133,449,359,347	69.9
Cardio Group	338	1,630,746	24.7	23,271,579	133,337,709,090	23.4
Organ Group	17	1,602,261	8.2	1,001,454	131,535,577,968	6.1
Neuro Group	208	1,602,187	26.4	19,095,102	131,530,326,165	32.1
Accident/Infectious	40	1,605,881	44.5	3,095,000	131,757,630,776	44.0
LOIE	7	650,194	21.7	1,395,000	39,762,625,722	61.6
Non-life-threatening	13	1,240,686	18.1	1,442,663	17,861,755,135	26.7

Table C4j. Comparison of ratios (A/E) by number and face band. Overall experience

Population—Overall	A/E by Number						S.D.
Under \$50,000	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	51.9	51.3	49.7	48.9	47.9	49.3	1.0
Cancer Group	62.3	63.3	61.4	61.2	59.9	60.8	1.5
Cardio Group	42.6	38.7	36.8	35.2	33.5	36.8	1.7
Organ Group	16.0	13.7	13.1	9.7	14.3	14.2	3.4
Neuro Group	28.9	26.3	26.3	23.7	24.1	26.0	2.6
\$50,000–\$99,999	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	51.9	52.7	50.5	50.9	49.5	50.0	0.9
Cancer Group	64.9	66.3	65.0	65.9	63.3	63.1	1.4
Cardio Group	38.6	38.6	34.5	34.2	33.8	36.3	1.5
Organ Group	12.1	13.2	12.0	8.3	11.9	11.6	2.5
Neuro Group	26.0	25.2	22.1	23.9	26.7	25.4	2.3
\$100,000–\$249,999	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	54.3	53.0	51.5	51.7	52.4	52.7	0.9
Cancer Group	71.9	70.4	67.1	68.4	69.9	70.2	1.4
Cardio Group	36.1	34.9	35.6	34.4	33.6	33.9	1.3
Organ Group	5.8	7.1	5.7	3.8	4.2	5.0	1.5
Neuro Group	29.1	29.9	32.6	32.1	32.5	31.3	2.5
\$250,000 and Over	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	58.6	58.5	57.2	56.7	53.5	55.0	2.3
Cancer Group	80.4	80.4	79.3	80.2	73.2	75.1	3.7
Cardio Group	32.1	32.9	32.6	30.2	31.0	30.9	2.9
Organ Group	5.8	10.3	9.3	8.5	7.9	7.8	4.5
Neuro Group	54.2	47.3	44.1	39.8	45.2	49.3	7.8

Table C4k. Comparison of ratios (A/E) by number and face band. Male experience

Population—Male	A/E by Number						S.D.
Under \$50,000	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	48.7	47.7	48.1	46.1	44.9	46.1	1.5
Cancer Group	57.2	59.5	59.3	56.2	53.5	54.7	2.3
Cardio Group	45.1	40.9	41.4	40.3	39.1	41.2	2.2
Organ Group	17.9	14.3	11.0	10.5	12.5	14.9	4.7
Neuro Group	31.5	23.8	27.5	25.9	32.4	31.0	4.7
\$50,000–\$99,999	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	51.3	51.6	47.8	46.9	44.0	46.8	1.3
Cancer Group	66.0	67.3	65.0	64.6	57.6	60.2	2.2
Cardio Group	43.6	43.3	37.1	35.8	35.5	39.6	1.9
Organ Group	14.5	15.1	12.1	6.4	13.4	14.4	3.7
Neuro Group	24.8	23.1	19.8	21.6	23.9	23.6	3.6
\$100,000–\$249,999	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	49.0	48.5	46.4	46.9	48.5	47.9	1.2
Cancer Group	65.4	65.5	59.6	61.6	65.4	65.0	2.0
Cardio Group	39.9	39.4	40.1	39.1	38.3	37.9	1.6
Organ Group	7.5	6.8	6.3	3.5	2.2	4.2	1.7
Neuro Group	30.9	30.9	33.2	34.6	36.3	33.3	3.7
\$250,000 and Over	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	58.0	57.9	53.9	51.5	49.1	51.3	2.6
Cancer Group	84.9	85.5	79.4	76.9	70.6	73.8	4.6
Cardio Group	32.3	32.1	30.3	28.4	30.0	30.6	3.1
Organ Group	7.3	13.1	11.9	10.9	10.1	10.0	5.8
Neuro Group	66.1	58.0	58.6	47.1	46.1	52.3	10.1

Table C4I. Comparison of ratios (A/E) by number and face band. Female experience

Population—Female	A/E by Number						S.D.
Under \$50,000	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	54.6	54.2	50.9	51.2	50.4	52.0	1.4
Cancer Group	65.3	65.6	62.6	64.2	63.7	64.4	1.9
Cardio Group	38.0	34.8	28.5	26.2	23.9	28.8	2.5
Organ Group	13.9	13.1	15.5	8.7	16.4	13.4	4.8
Neuro Group	27.4	27.7	25.7	22.5	19.6	23.3	3.1
\$50,000–\$99,999	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	52.6	53.7	53.1	54.7	54.7	53.1	1.3
Cancer Group	64.2	65.7	65.0	66.7	67.0	65.0	1.8
Cardio Group	26.4	27.4	28.4	30.7	30.1	28.8	2.4
Organ Group	8.7	10.4	11.8	10.8	9.9	7.9	3.2
Neuro Group	26.7	26.5	23.6	25.4	28.4	26.6	3.1
\$100,000–\$249,999	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	61.1	58.7	57.9	57.8	57.4	58.6	1.4
Cancer Group	77.2	74.4	73.2	74.0	73.6	74.5	2.0
Cardio Group	23.1	19.8	20.8	19.0	18.8	20.7	2.2
Organ Group	2.8	7.5	4.6	4.2	7.9	6.4	2.9
Neuro Group	27.7	29.0	32.0	30.0	29.2	29.7	3.3
\$250,000 and Over	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016	2007– 2016
Total Experience	60.2	60.1	65.7	69.8	64.7	64.4	4.6
Cancer Group	72.6	71.7	79.2	85.6	77.3	77.2	6.1
Cardio Group	30.6	39.0	48.6	42.5	37.5	32.7	8.2
Organ Group	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Neuro Group	32.4	27.9	18.3	27.2	43.9	43.9	12.2

Table C4m. Comparison of ratios (A/E) by amount and face band. Overall experience

Population—Overall	A/E by Amount					
Under \$50,000	2007–12	2008–2013	2009–2014	2010–2015	2011–2016	2007–2016
Total Experience	52.6	51.6	49.4	49.0	47.6	49.4
Cancer Group	62.5	63.1	60.4	61.0	59.2	60.4
Cardio Group	43.9	40.6	38.4	36.5	34.3	37.7
Organ Group	18.8	16.1	15.4	10.5	16.8	16.2
Neuro Group	31.7	27.2	26.0	23.0	23.0	26.9
\$50,000–\$99,999	2007–2012	2008–2013	2009–2014	2010–2015	2011–2016	2007–2016
Total Experience	52.1	52.6	50.4	50.9	49.5	50.0
Cancer Group	65.3	66.3	65.2	66.0	63.4	63.2
Cardio Group	37.7	37.8	33.5	33.3	32.6	35.2
Organ Group	12.1	13.0	11.9	8.3	12.1	11.5
Neuro Group	28.0	27.8	24.2	25.7	28.9	27.4
\$100,000–\$249,999	2007–2012	2008–2013	2009–2014	2010–2015	2011–2016	2007–2016
Total Experience	53.4	52.6	51.1	51.0	51.8	52.2
Cancer Group	70.4	69.6	66.8	67.6	69.3	69.6
Cardio Group	36.3	35.0	35.5	34.4	33.7	34.0
Organ Group	6.1	6.3	4.9	3.3	3.7	4.8
Neuro Group	27.9	30.0	30.8	30.3	31.3	30.4
\$250,000 and Over	2007–2012	2008–2013	2009–2014	2010–2015	2011–2016	2007–2016
Total Experience	53.6	52.0	50.7	53.7	50.4	51.9
Cancer Group	74.7	72.1	71.8	77.7	70.8	72.3
Cardio Group	24.4	24.7	25.5	25.7	27.3	26.5
Organ Group	4.0	7.7	7.0	3.6	3.3	3.9
Neuro Group	67.2	60.0	46.1	44.0	43.7	54.4

Table C4n. Comparison of ratios (A/E) by amount and face band. Male experience

Population—Male	A/E by Amount					
Under \$50,000	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016
Total Experience	49.3	48.1	48.3	46.4	45.0	46.5
Cancer Group	57.6	59.2	58.9	56.5	53.3	54.8
Cardio Group	45.8	42.2	42.7	41.1	39.3	41.7
Organ Group	17.1	13.2	10.3	9.7	13.7	14.9
Neuro Group	37.3	26.2	28.6	25.9	31.4	33.6
\$50,000–\$99,999	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016
Total Experience	50.5	50.7	47.3	46.4	43.5	46.2
Cancer Group	65.1	65.9	64.7	63.9	57.1	59.6
Cardio Group	42.4	42.2	36.0	34.8	34.1	38.3
Organ Group	14.9	15.3	12.4	7.0	14.2	14.5
Neuro Group	26.6	25.4	22.1	23.7	26.1	25.4
\$100,000–\$249,999	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016
Total Experience	48.4	48.4	46.5	47.0	48.7	48.0
Cancer Group	64.3	65.1	60.4	62.1	66.0	65.1
Cardio Group	40.1	39.3	39.7	38.8	38.1	38.0
Organ Group	7.7	5.9	5.4	3.0	1.9	4.2
Neuro Group	28.6	31.3	32.2	34.2	37.2	33.2
\$250,000 and Over	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016
Total Experience	51.8	51.1	47.7	48.6	46.1	47.9
Cancer Group	78.4	78.0	72.8	75.3	68.4	71.0
Cardio Group	24.6	24.2	24.2	24.8	27.1	26.6
Organ Group	4.9	9.6	8.6	4.5	4.1	4.9
Neuro Group	67.2	58.6	51.0	42.0	42.2	51.3

Table C4o. Comparison of ratios (A/E) by amount and face band. Female experience

Population—Female	A/E by Amount					
	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016
Under \$50,000						
Total Experience	55.3	54.6	50.3	51.3	49.8	51.9
Cancer Group	65.3	65.3	61.3	63.7	62.7	63.7
Cardio Group	40.3	37.6	30.3	28.4	25.5	30.4
Organ Group	20.8	19.3	21.3	11.4	20.2	17.7
Neuro Group	28.6	27.8	24.5	21.4	18.3	23.2
\$50,000–\$99,999						
Total Experience	53.5	54.4	53.4	55.2	55.3	53.7
Cancer Group	65.4	66.5	65.5	67.4	67.4	65.5
Cardio Group	26.1	27.1	27.3	29.9	29.2	28.0
Organ Group	8.1	9.8	11.1	10.1	9.3	7.4
Neuro Group	29.0	29.3	25.6	27.1	30.7	28.7
\$100,000–\$249,999						
Total Experience	60.0	58.1	57.1	56.3	55.9	57.6
Cancer Group	75.6	73.3	72.2	72.2	72.1	73.4
Cardio Group	22.9	20.2	21.1	19.6	19.1	20.6
Organ Group	3.1	7.3	4.1	3.8	7.0	6.0
Neuro Group	27.4	28.9	29.6	26.9	26.1	27.9
\$250,000 and Over						
Total Experience	59.1	54.8	59.2	68.1	62.0	63.1
Cancer Group	67.6	60.9	70.0	82.1	75.0	74.6
Cardio Group	22.4	28.7	35.7	32.4	28.8	25.7
Organ Group	0.0	0.0	0.0	0.0	0.0	0.0
Neuro Group	67.2	62.8	36.3	48.0	46.7	60.2

**TableC4p. Comparison of ratios (A/E) by number and amount and face band.
Overall experience for policy years 2007–2008 through 2015–2016**

Population—Overall	A/E by Number			A/E by Amount		
Under \$50,000	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	2,358	711,798	49.3	55,324,359	17,050,535,257	49.4
Cancer Group	1,731	711,798	60.8	39,948,335	17,050,535,257	60.4
Cardio Group	482	696,155	36.8	11,740,756	16,818,544,199	37.7
Organ Group	18	673,418	14.2	491,454	16,312,261,430	16.2
Neuro Group	101	673,407	26.0	2,450,475	16,311,861,430	26.9
\$50,000–\$99,999	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	2,874	1,093,275	50.0	153,970,497	58,806,836,122	50.0
Cancer Group	2,091	1,093,275	63.1	112,144,358	58,806,836,122	63.2
Cardio Group	597	1,093,275	36.3	31,075,164	58,806,836,122	35.2
Organ Group	21	1,070,764	11.6	1,117,273	57,577,307,741	11.5
Neuro Group	118	1,070,702	25.4	6,791,614	57,573,880,665	27.4
\$100,000–\$249,999	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	3,357	1,364,592	52.7	381,692,375	155,786,637,694	52.2
Cancer Group	2,496	1,364,592	70.2	282,980,376	155,786,637,694	69.6
Cardio Group	644	1,364,592	33.9	74,848,999	155,786,637,694	34.0
Organ Group	11	1,346,697	5.0	1,225,000	153,712,944,890	4.8
Neuro Group	162	1,346,646	31.3	17,955,000	153,707,819,207	30.4
\$250,000 and Over	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	596	202,168	55.0	205,801,495	73,621,188,395	51.9
Cancer Group	420	202,168	75.1	146,447,500	73,621,188,395	72.3
Cardio Group	116	202,168	30.9	37,041,495	73,621,188,395	26.5
Organ Group	3	200,169	7.8	560,000	72,956,844,747	3.9
Neuro Group	40	200,169	49.3	16,020,000	72,956,844,747	54.4

**Table C4q. Comparison of ratios (A/E) by number and amount and face band.
Male experience for policy years 2007–2008 through 2015–2016**

Population—Male	A/E by Number			A/E by Amount		
Under \$50,000	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	996	286,860	46.1	23,490,937	6,881,574,839	46.5
Cancer Group	581	286,860	54.7	13,357,703	6,881,574,839	54.8
Cardio Group	347	280,487	41.2	8,398,075	6,783,497,075	41.7
Organ Group	10	269,753	14.9	240,000	6,545,001,769	14.9
Neuro Group	43	269,753	31.0	1,095,873	6,545,001,769	33.6
\$50,000–\$99,999	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	1,310	486,465	46.8	69,646,507	26,347,855,206	46.2
Cancer Group	776	486,465	60.2	41,367,844	26,347,855,206	59.6
Cardio Group	455	486,465	39.6	23,715,164	26,347,855,206	38.3
Organ Group	15	475,235	14.4	817,273	25,729,541,155	14.5
Neuro Group	43	475,215	23.6	2,479,248	25,728,434,078	25.4
\$100,000–\$249,999	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	1,702	698,509	47.9	198,321,656	80,811,949,646	48.0
Cancer Group	1,043	698,509	65.0	121,556,918	80,811,949,646	65.1
Cardio Group	552	698,509	37.9	64,515,738	80,811,949,646	38.0
Organ Group	6	688,206	4.2	700,000	79,613,424,116	4.2
Neuro Group	79	688,181	33.3	9,160,000	79,610,990,236	33.2
\$250,000 and Over	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	399	134,552	51.3	140,449,495	50,643,753,662	47.9
Cancer Group	257	134,552	73.8	93,035,500	50,643,753,662	71.0
Cardio Group	100	134,552	30.6	32,781,495	50,643,753,662	26.6
Organ Group	3	133,178	10.0	560,000	50,172,004,423	4.9
Neuro Group	27	133,178	52.3	9,970,000	50,172,004,423	51.3

**Table C4r. Comparison of ratios (A/E) by number and amount and face band.
Female experience for policy years 2007–2008 through 2015–2016**

Population—Female	A/E by Number			A/E by Amount		
Under \$50,000	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	1,362	424,938	52.0	31,833,422	10,168,960,418	51.9
Cancer Group	1,150	424,938	64.4	26,590,632	10,168,960,418	63.7
Cardio Group	135	415,668	28.8	3,342,681	10,035,047,124	30.4
Organ Group	8	403,665	13.4	251,454	9,767,259,661	17.7
Neuro Group	58	403,654	23.3	1,354,602	9,766,859,661	23.2
\$50,000–\$99,999	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	1,564	606,810	53.1	84,323,990	32,458,980,916	53.7
Cancer Group	1,315	606,810	65.0	70,776,514	32,458,980,916	65.5
Cardio Group	142	606,810	28.8	7,360,000	32,458,980,916	28.0
Organ Group	6	595,529	7.9	300,000	31,847,766,587	7.4
Neuro Group	75	595,488	26.6	4,312,366	31,845,446,587	28.7
\$100,000–\$249,999	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	1,655	666,083	58.6	183,370,719	74,974,688,047	57.6
Cancer Group	1,453	666,083	74.5	161,423,458	74,974,688,047	73.4
Cardio Group	92	666,083	20.7	10,333,261	74,974,688,047	20.6
Organ Group	5	658,492	6.4	525,000	74,099,520,775	6.0
Neuro Group	83	658,465	29.7	8,795,000	74,096,828,971	27.9
\$250,000 and Over	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Total Experience	196	67,616	64.4	65,352,000	22,977,434,734	63.1
Cancer Group	163	67,616	77.2	53,412,000	22,977,434,734	74.6
Cardio Group	16	67,616	32.7	4,260,000	22,977,434,734	25.7
Organ Group	0	66,991	0.0	0	22,784,840,324	0.0
Neuro Group	13	66,991	43.9	6,050,000	22,784,840,324	60.2

Figure C1a. Average claim amount of seven claim conditions for 2007–2012

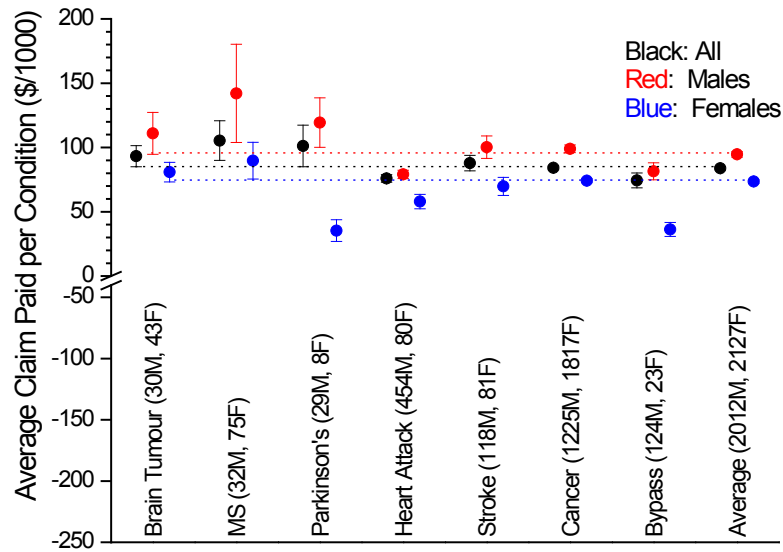


Figure C1b. Average claim amount of seven claim conditions for 2008–2013

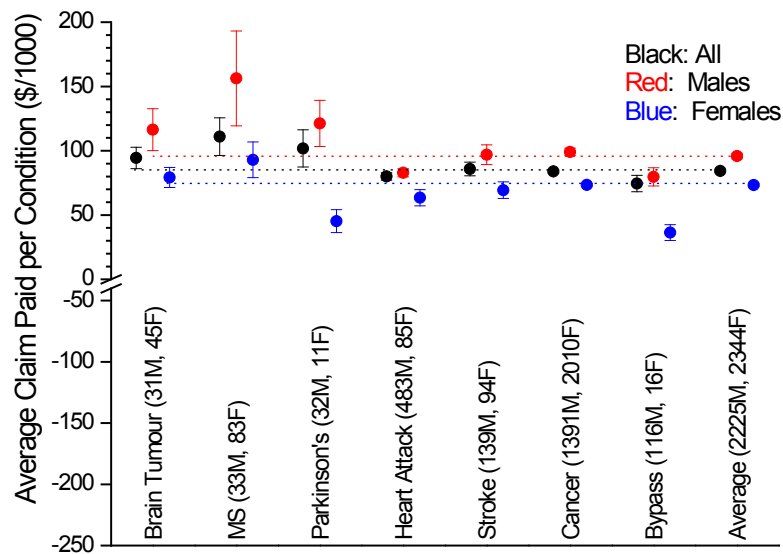


Figure C1c. Average claim amount of seven claim conditions for 2009–2014

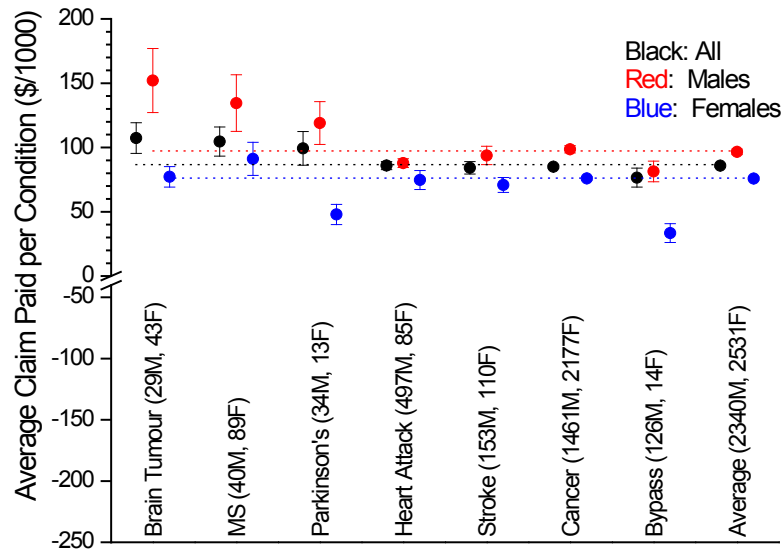


Figure C1d. Average claim amount of seven claim conditions for 2010–2015

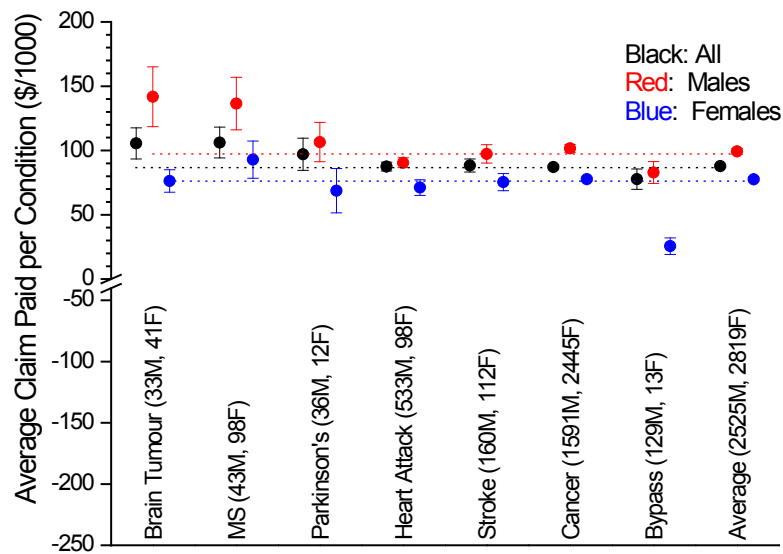


Figure C1e. Average claim amount of seven claim conditions for 2011–2016

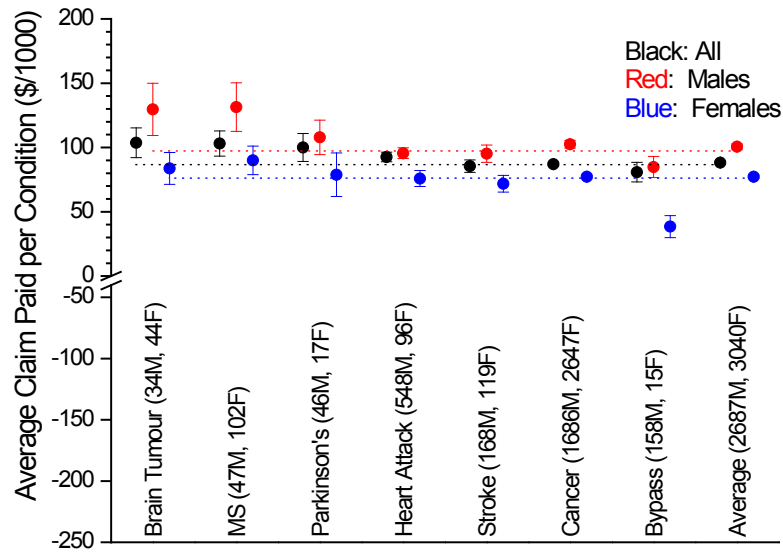


Figure C1f. Average claim amount of seven claim conditions for 2007–2016

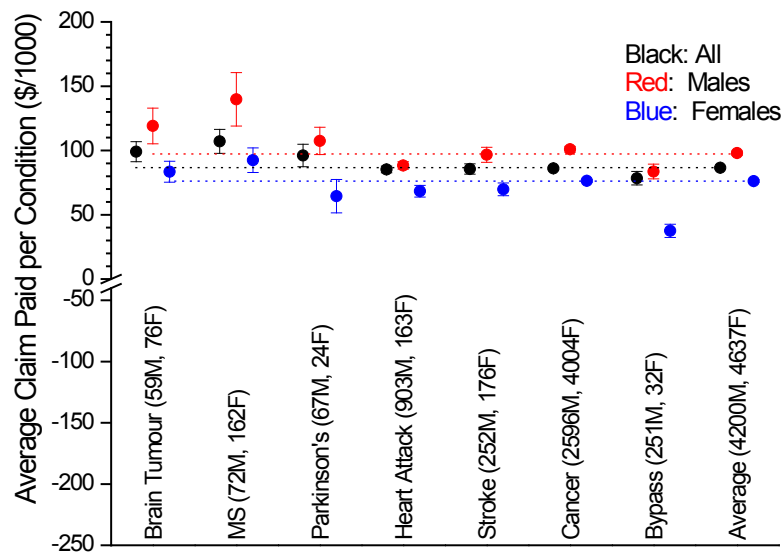


Table C5a. Comparison of ratios (A/E) by number for durations 1 to 15+ and for durations 1 to 15+ for three illnesses. Overall experience

Population—Overall	A/E by Number						S.D.
	2007–2012	2008–2013	2009–2014	2010–2015	2011–2016	2007–2016	2007–2016
Duration 1	26.3	25.8	21.9	23.2	22.6	24.1	1.3
Duration 2	47.8	50.9	47.1	44.9	45.1	45.9	1.9
Duration 3	53.1	53.3	52.0	52.9	52.4	52.4	2.0
Duration 4	54.2	53.7	49.1	48.7	48.2	50.5	1.9
Duration 5	54.7	54.9	51.9	52.2	52.9	53.8	1.9
Duration 6	56.2	54.3	53.6	54.1	54.9	55.4	1.9
Duration 7	60.5	58.0	57.6	55.4	52.9	56.7	1.9
Duration 8	55.1	54.7	53.5	55.1	54.6	53.8	1.9
Duration 9	55.1	54.6	54.2	53.8	54.6	54.5	2.0
Duration 10	60.1	58.3	56.5	57.4	57.0	57.5	2.1
Duration 11	62.8	56.9	54.7	54.3	53.3	54.2	2.3
Duration 12	66.5	58.0	52.1	50.1	49.1	51.5	2.4
Duration 13	61.1	60.2	56.3	53.1	51.2	52.6	2.8
Duration 14	63.3	70.2	62.5	55.9	50.1	50.9	3.3
Duration 15+	49.9	48.6	56.6	57.0	52.4	52.0	2.9
Duration 1—Heart Attack	38.3	40.5	35.2	32.5	25.6	33.3	4.3
Duration 2—Heart Attack	35.4	37.7	35.9	32.0	26.4	31.6	4.2
Duration 3—Heart Attack	39.3	34.3	32.6	34.0	37.7	39.0	4.5
Duration 4—Heart Attack	45.0	48.9	45.1	37.7	33.4	39.7	4.3
Duration 5—Heart Attack	46.6	45.8	40.1	46.0	43.1	44.2	4.4
Duration 6—Heart Attack	49.3	43.3	40.8	41.7	34.6	42.2	4.2
Duration 7—Heart Attack	38.8	38.4	36.6	36.1	35.9	39.6	4.1
Duration 8—Heart Attack	37.1	41.4	40.7	43.8	43.2	41.0	4.2
Duration 9—Heart Attack	37.1	32.8	35.9	36.0	35.0	37.8	4.1
Duration 10—Heart Attack	53.9	51.7	46.9	45.4	42.0	43.6	4.5
Duration 11—Heart Attack	47.4	37.0	38.8	32.9	31.7	33.8	4.6
Duration 12—Heart Attack	69.0	49.9	32.4	36.4	38.8	42.5	5.5
Duration 13—Heart Attack	53.9	40.3	31.2	34.8	32.5	33.7	5.6
Duration 14—Heart Attack	49.1	47.4	35.9	35.3	34.1	34.7	6.8
Duration 15+—Heart Attack	38.5	23.7	47.8	55.4	47.5	46.7	6.8
Duration 1—LT Cancer	30.4	29.3	24.6	26.3	27.4	28.2	1.9
Duration 2—LT Cancer	64.3	70.1	63.9	61.2	62.2	62.1	2.9
Duration 3—LT Cancer	68.9	72.1	71.3	71.4	68.8	68.4	3.0
Duration 4—LT Cancer	68.3	66.8	60.5	63.1	63.6	64.9	2.9
Duration 5—LT Cancer	68.0	68.8	66.1	67.3	69.5	69.0	2.9
Duration 6—LT Cancer	71.9	71.0	70.4	74.3	75.4	73.4	3.0
Duration 7—LT Cancer	78.2	76.5	77.2	74.9	73.8	75.4	3.0

Duration 8—LT Cancer	73.0	72.3	69.3	71.3	70.6	70.2	2.9
Duration 9—LT Cancer	70.1	70.6	69.2	70.4	70.5	69.9	3.0
Duration 10—LT Cancer	71.3	68.8	68.8	72.4	72.1	72.0	3.1
Duration 11—LT Cancer	75.9	71.5	70.3	72.5	72.7	72.4	3.5
Duration 12—LT Cancer	84.0	73.3	68.6	64.5	61.2	64.4	3.6
Duration 13—LT Cancer	80.0	81.6	76.7	68.6	62.6	64.9	4.1
Duration 14—LT Cancer	71.1	93.4	85.9	78.1	67.7	68.0	5.0
Duration 15+—LT Cancer	66.1	69.8	68.9	71.1	64.2	64.0	4.2
Duration 1—Stroke	24.2	23.6	23.9	32.8	30.6	25.6	5.6
Duration 2—Stroke	28.5	30.7	32.0	36.2	34.3	31.3	6.1
Duration 3—Stroke	38.1	40.8	40.8	28.7	36.7	34.5	6.3
Duration 4—Stroke	50.6	55.8	54.4	47.7	45.4	46.1	7.0
Duration 5—Stroke	36.8	43.2	42.0	44.4	41.9	38.7	6.3
Duration 6—Stroke	24.6	25.3	28.9	21.1	21.3	20.5	4.5
Duration 7—Stroke	38.7	40.8	40.3	38.0	33.0	34.3	5.7
Duration 8—Stroke	29.8	27.7	28.4	32.3	29.6	29.2	5.3
Duration 9—Stroke	38.6	38.6	39.7	37.1	33.7	35.3	6.0
Duration 10—Stroke	52.9	57.6	56.2	52.1	49.1	51.0	7.4
Duration 11—Stroke	69.9	58.9	50.9	47.1	38.3	43.5	7.7
Duration 12—Stroke	26.8	39.7	38.5	31.8	35.3	34.7	7.4
Duration 13—Stroke	0.0	8.7	24.1	34.4	37.3	34.4	8.3
Duration 14—Stroke	26.7	14.6	34.1	23.5	27.2	28.5	9.0
Duration 15+—Stroke	0.0	16.7	46.4	31.9	39.9	39.3	9.0

Table C5b. Comparison of ratios (A/E) by number for durations 1 to 15+ and for durations 1 to 15+ for three illnesses. Male experience

Population—Male	A/E by Number						S.D.
	2007–2012	2008–2013	2009–2014	2010–2015	2011–2016	2007–2016	2007–2016
Duration 1	28.1	26.2	21.1	20.6	18.5	22.4	1.9
Duration 2	41.0	45.4	40.7	38.7	39.9	40.4	2.5
Duration 3	47.7	47.7	46.4	48.8	50.0	48.8	2.7
Duration 4	50.9	49.9	46.2	40.5	40.9	45.3	2.5
Duration 5	51.6	50.8	47.5	48.5	45.5	48.9	2.5
Duration 6	48.7	47.5	46.7	49.0	51.1	49.3	2.5
Duration 7	58.7	57.5	56.3	55.1	51.9	54.2	2.6
Duration 8	52.9	53.0	52.8	54.4	53.5	52.4	2.6
Duration 9	54.1	52.5	51.0	49.7	48.9	51.3	2.6
Duration 10	55.1	56.5	54.1	52.2	52.6	52.6	2.7
Duration 11	61.4	54.7	50.9	46.8	45.8	48.0	2.9
Duration 12	68.4	53.9	46.2	45.9	44.8	47.9	3.2
Duration 13	57.3	59.2	51.2	46.6	46.1	48.0	3.6
Duration 14	65.2	66.7	55.9	53.6	46.9	48.4	4.3
Duration 15+	49.4	46.5	54.2	52.8	51.5	50.9	3.8
Duration 1—Heart Attack	46.6	48.4	40.0	37.8	31.3	40.4	5.5
Duration 2—Heart Attack	40.1	44.6	42.4	33.5	28.7	35.4	5.1
Duration 3—Heart Attack	43.0	40.2	38.1	39.1	45.3	44.8	5.5
Duration 4—Heart Attack	49.2	47.7	45.0	35.4	31.6	41.4	5.1
Duration 5—Heart Attack	50.6	48.7	44.9	51.6	49.2	49.2	5.4
Duration 6—Heart Attack	53.1	46.7	47.9	49.8	39.3	45.9	5.1
Duration 7—Heart Attack	42.4	42.9	40.3	42.1	43.5	45.1	5.0
Duration 8—Heart Attack	43.6	49.2	47.5	50.5	51.0	48.5	5.3
Duration 9—Heart Attack	47.3	41.3	44.1	43.3	40.0	45.4	5.2
Duration 10—Heart Attack	56.5	56.1	52.9	50.4	48.5	48.6	5.6
Duration 11—Heart Attack	61.3	46.5	41.8	35.2	31.8	35.4	5.5
Duration 12—Heart Attack	81.7	58.9	40.5	41.8	48.3	51.8	7.2
Duration 13—Heart Attack	53.6	43.6	33.8	38.2	35.5	35.1	6.8
Duration 14—Heart Attack	65.0	63.3	48.9	48.9	43.6	44.6	9.1
Duration 15+—Heart Attack	52.0	32.0	59.8	68.1	57.6	56.6	8.8
Duration 1—LT Cancer	31.8	27.4	20.7	20.9	19.4	23.2	2.9
Duration 2—LT Cancer	54.1	63.7	55.5	56.8	59.6	56.8	4.5
Duration 3—LT Cancer	60.4	65.3	66.4	69.7	67.5	64.4	4.7
Duration 4—LT Cancer	66.7	66.5	58.2	53.3	55.4	59.5	4.4
Duration 5—LT Cancer	66.8	65.3	61.6	63.0	58.0	63.8	4.4
Duration 6—LT Cancer	62.1	64.2	63.0	67.6	72.5	66.2	4.4
Duration 7—LT Cancer	79.6	80.0	81.8	79.8	76.8	75.2	4.6

Duration 8—LT Cancer	71.7	70.3	67.6	70.0	69.9	69.3	4.4
Duration 9—LT Cancer	67.3	69.3	64.8	64.2	60.9	64.7	4.3
Duration 10—LT Cancer	66.3	66.8	65.7	65.6	66.3	65.5	4.4
Duration 11—LT Cancer	74.5	69.5	69.3	65.9	65.6	66.7	5.1
Duration 12—LT Cancer	85.8	72.4	62.7	60.1	51.8	56.7	5.0
Duration 13—LT Cancer	77.6	86.1	72.6	60.0	55.4	59.5	5.7
Duration 14—LT Cancer	78.6	91.5	75.2	72.0	61.1	62.7	7.0
Duration 15+—LT Cancer	71.8	70.5	63.5	62.7	62.3	61.8	5.8
Duration 1—Stroke	16.0	11.8	20.0	28.3	28.5	20.2	6.7
Duration 2—Stroke	19.6	23.8	27.1	38.8	39.2	28.3	7.9
Duration 3—Stroke	52.1	53.3	53.8	40.6	51.7	45.1	9.6
Duration 4—Stroke	57.4	64.9	66.3	59.0	53.0	54.8	10.2
Duration 5—Stroke	36.3	42.2	34.7	42.4	38.9	39.2	8.3
Duration 6—Stroke	22.4	20.2	21.8	16.6	20.2	20.3	5.8
Duration 7—Stroke	44.0	53.5	49.6	50.4	47.4	42.6	8.4
Duration 8—Stroke	38.8	36.8	40.8	44.7	39.5	38.2	8.0
Duration 9—Stroke	39.8	34.3	37.7	36.5	35.1	37.6	8.0
Duration 10—Stroke	39.3	55.7	54.8	48.0	46.4	45.0	9.0
Duration 11—Stroke	75.8	72.6	44.0	38.0	27.9	37.6	9.4
Duration 12—Stroke	14.6	8.4	22.0	23.6	34.0	32.8	9.5
Duration 13—Stroke	0.0	14.4	16.4	21.6	26.7	24.5	9.2
Duration 14—Stroke	0.0	0.0	42.4	32.1	31.4	29.5	12.0
Duration 15+—Stroke	0.0	27.0	37.6	26.3	28.3	27.9	9.8

Table C5c. Comparison of ratios (A/E) by number for durations 1 to 15+ and for durations 1 to 15+ for three illnesses. Female experience

Population—Female	A/E by Number					S.D.	
	2007–2012	2008–2013	2009–2014	2010–2015	2011–2016	2007–2016	2007–2016
Duration 1	24.6	25.6	22.6	25.3	26.0	25.6	1.9
Duration 2	54.2	55.9	52.9	50.5	49.7	50.8	2.7
Duration 3	58.4	58.7	57.2	56.7	54.6	55.9	2.8
Duration 4	57.6	57.4	52.0	56.6	55.2	55.6	2.8
Duration 5	58.0	59.2	56.5	55.8	60.2	58.8	2.8
Duration 6	64.3	61.8	61.0	59.5	58.8	61.9	2.9
Duration 7	62.5	58.6	58.9	55.6	54.1	59.5	2.8
Duration 8	57.6	56.6	54.2	55.9	55.8	55.4	2.8
Duration 9	56.3	57.1	57.8	58.5	61.2	58.3	3.0
Duration 10	66.3	60.6	59.3	63.6	62.3	63.4	3.2
Duration 11	64.5	59.6	59.2	62.8	61.8	61.4	3.6
Duration 12	63.9	63.1	59.1	54.9	54.0	55.6	3.7
Duration 13	66.8	61.6	62.8	60.9	57.3	58.1	4.4
Duration 14	60.3	75.5	71.9	58.8	54.1	54.0	5.1
Duration 15+	50.6	51.8	60.2	63.0	53.5	53.5	4.6
Duration 1—Heart Attack	12.5	16.2	20.5	16.5	8.2	11.5	5.1
Duration 2—Heart Attack	20.4	16.3	15.8	27.5	19.7	20.1	6.7
Duration 3—Heart Attack	27.3	15.7	15.6	18.6	14.7	21.0	6.6
Duration 4—Heart Attack	31.8	52.6	45.3	44.6	38.7	34.7	8.2
Duration 5—Heart Attack	34.4	37.1	25.1	28.8	24.7	28.9	7.2
Duration 6—Heart Attack	37.7	32.7	19.2	17.0	20.5	31.0	7.3
Duration 7—Heart Attack	28.1	24.7	25.4	18.1	12.8	23.3	6.2
Duration 8—Heart Attack	18.1	18.6	20.8	24.0	20.0	18.6	5.6
Duration 9—Heart Attack	7.4	8.6	12.6	14.8	20.2	15.7	5.2
Duration 10—Heart Attack	46.2	39.0	30.1	31.2	23.4	29.3	7.3
Duration 11—Heart Attack	8.6	11.1	30.8	26.8	31.4	29.4	8.2
Duration 12—Heart Attack	31.8	25.3	10.8	22.5	14.4	18.2	6.9
Duration 13—Heart Attack	54.7	30.9	24.4	26.0	25.1	30.2	10.1
Duration 14—Heart Attack	0.0	0.0	0.0	0.0	10.0	9.5	6.7
Duration 15+—Heart Attack	0.0	0.0	14.0	21.1	21.6	21.3	8.7
Duration 1—LT Cancer	29.6	30.4	26.8	29.4	32.0	31.0	2.5
Duration 2—LT Cancer	70.3	73.9	68.8	63.8	63.7	65.3	3.7
Duration 3—LT Cancer	74.2	76.2	74.3	72.4	69.5	70.8	3.9
Duration 4—LT Cancer	69.4	67.1	62.0	69.2	68.5	68.4	3.7
Duration 5—LT Cancer	68.9	71.2	69.1	70.0	76.8	72.4	3.8
Duration 6—LT Cancer	78.9	75.8	75.6	78.8	77.2	78.3	4.0

Duration 7—LT Cancer	77.2	74.0	73.9	71.4	71.7	75.5	3.9
Duration 8—LT Cancer	74.0	73.8	70.6	72.3	71.2	70.9	3.9
Duration 9—LT Cancer	72.4	71.7	72.8	75.4	78.0	74.0	4.1
Duration 10—LT Cancer	75.7	70.6	71.3	78.1	76.9	77.5	4.4
Duration 11—LT Cancer	77.1	73.2	71.1	77.7	78.3	77.1	4.9
Duration 12—LT Cancer	82.0	74.2	73.9	68.3	68.9	70.8	5.1
Duration 13—LT Cancer	82.6	77.0	80.6	76.3	68.9	69.8	5.9
Duration 14—LT Cancer	62.2	95.6	97.3	83.9	73.9	73.0	7.3
Duration 15+—LT Cancer	59.6	69.0	75.3	80.6	66.2	66.4	6.2
Duration 1—Stroke	34.2	37.8	28.5	38.1	33.1	32.1	9.3
Duration 2—Stroke	39.7	39.4	38.1	32.9	28.3	35.0	9.7
Duration 3—Stroke	19.7	24.6	24.3	13.8	18.2	21.0	7.4
Duration 4—Stroke	41.3	43.5	38.7	33.2	35.8	34.7	9.3
Duration 5—Stroke	37.6	44.6	51.8	47.0	45.9	38.2	9.5
Duration 6—Stroke	27.6	32.3	38.7	27.2	22.7	20.9	7.0
Duration 7—Stroke	31.1	22.7	27.1	20.7	13.1	22.8	7.2
Duration 8—Stroke	16.9	14.9	10.8	14.8	15.8	16.4	6.2
Duration 9—Stroke	36.7	44.6	42.7	38.0	31.8	31.8	8.8
Duration 10—Stroke	73.1	60.5	58.3	57.9	53.0	59.7	12.5
Duration 11—Stroke	61.4	39.5	60.3	59.3	52.2	51.6	12.9
Duration 12—Stroke	45.8	84.8	61.6	42.8	37.0	37.3	11.8
Duration 13—Stroke	0.0	0.0	35.1	52.2	51.5	48.1	15.2
Duration 14—Stroke	72.4	38.6	21.5	11.3	21.5	27.2	13.6
Duration 15+—Stroke	0.0	0.0	60.5	40.4	56.7	55.9	16.8

Table C5d. Comparison of ratios (A/E) by amount for durations 1 to 15+ and for durations 1 to 15+ for three illnesses. Overall experience

Population—Overall	A/E by Amount					
	2007–2012	2008–2013	2009–2014	2010–2015	2011–2016	2007–2016
Duration 1	26.7	24.0	21.9	22.9	20.7	23.2
Duration 2	48.1	47.0	44.1	41.5	39.4	43.7
Duration 3	52.0	50.2	48.3	48.8	50.3	50.5
Duration 4	52.5	55.3	50.3	51.4	51.8	52.0
Duration 5	56.0	56.8	55.4	55.9	52.6	54.1
Duration 6	57.6	54.2	54.3	56.2	57.5	58.4
Duration 7	61.0	58.0	58.3	60.4	55.6	58.0
Duration 8	56.4	56.7	53.6	55.6	56.3	56.2
Duration 9	53.4	51.8	53.0	53.6	55.3	54.7
Duration 10	57.0	57.3	54.7	55.7	56.6	56.4
Duration 11	60.7	58.6	54.6	56.5	54.0	54.0
Duration 12	70.8	56.6	51.4	50.3	49.1	51.9
Duration 13	61.2	61.9	56.9	53.2	50.8	52.7
Duration 14	65.0	81.9	62.3	57.8	51.2	52.9
Duration 15+	34.1	40.0	50.5	51.0	50.5	49.9
Duration 1—Heart Attack	32.2	31.3	29.5	26.8	20.9	27.8
Duration 2—Heart Attack	30.1	30.2	30.5	23.7	22.2	26.9
Duration 3—Heart Attack	35.9	31.3	34.5	39.6	44.4	40.4
Duration 4—Heart Attack	32.7	37.7	36.8	28.0	26.2	30.0
Duration 5—Heart Attack	40.7	45.0	40.1	39.9	38.2	38.5
Duration 6—Heart Attack	37.3	30.4	30.8	29.0	21.6	30.2
Duration 7—Heart Attack	31.9	29.6	28.8	30.0	25.7	30.8
Duration 8—Heart Attack	32.6	39.0	38.4	42.6	47.5	42.0
Duration 9—Heart Attack	31.0	26.3	34.5	39.0	43.1	40.7
Duration 10—Heart Attack	46.9	56.7	48.4	47.0	53.4	50.1
Duration 11—Heart Attack	52.6	38.3	37.1	31.5	32.1	32.9
Duration 12—Heart Attack	55.8	40.2	29.9	30.0	30.9	34.9
Duration 13—Heart Attack	38.2	32.2	42.0	37.9	31.8	32.3
Duration 14—Heart Attack	45.0	78.8	56.3	59.7	47.8	47.9
Duration 15+—Heart Attack	13.6	9.5	28.9	45.8	40.7	39.8
Duration 1—LT Cancer	32.8	29.5	26.3	26.4	26.2	28.3
Duration 2—LT Cancer	68.1	67.2	62.8	60.9	57.0	62.0
Duration 3—LT Cancer	67.0	67.0	67.4	65.4	65.3	65.4
Duration 4—LT Cancer	68.6	72.6	66.7	72.5	74.5	71.8
Duration 5—LT Cancer	73.7	72.7	69.5	70.9	68.8	71.2
Duration 6—LT Cancer	76.2	71.2	71.9	78.6	81.9	79.8
Duration 7—LT Cancer	80.1	79.7	83.2	88.0	86.8	82.8

Duration 8—LT Cancer	78.1	77.6	74.2	76.3	76.0	76.2
Duration 9—LT Cancer	67.8	68.6	67.0	69.5	68.9	68.2
Duration 10—LT Cancer	68.6	65.1	65.5	69.5	70.0	70.3
Duration 11—LT Cancer	73.5	71.9	70.8	78.2	75.9	74.4
Duration 12—LT Cancer	94.1	77.4	71.4	69.6	64.5	68.0
Duration 13—LT Cancer	87.3	90.4	79.3	71.6	62.7	66.4
Duration 14—LT Cancer	77.6	104.7	81.0	74.9	67.2	68.6
Duration 15+—LT Cancer	50.8	61.6	62.9	64.1	63.2	62.5
Duration 1—Stroke	21.3	16.2	19.9	33.8	31.4	25.9
Duration 2—Stroke	21.3	23.5	35.4	35.1	42.4	33.6
Duration 3—Stroke	45.8	45.6	45.2	34.1	41.4	37.7
Duration 4—Stroke	61.4	67.1	54.5	48.8	44.1	51.3
Duration 5—Stroke	34.9	38.6	40.6	50.2	43.0	37.8
Duration 6—Stroke	24.7	27.7	28.9	24.0	20.1	20.0
Duration 7—Stroke	38.8	41.1	37.8	40.0	30.5	29.3
Duration 8—Stroke	27.8	25.8	23.9	28.3	24.2	25.6
Duration 9—Stroke	39.9	36.3	32.6	27.1	23.7	30.9
Duration 10—Stroke	40.7	56.7	55.6	54.9	49.2	47.3
Duration 11—Stroke	83.7	71.4	50.8	47.5	41.7	47.3
Duration 12—Stroke	48.2	22.9	27.7	21.8	27.8	33.1
Duration 13—Stroke	0.0	2.5	17.0	36.7	44.1	40.1
Duration 14—Stroke	68.6	40.0	42.4	27.0	18.4	25.7
Duration 15+—Stroke	0.0	16.9	61.4	36.2	31.9	31.3

Table C5e. Comparison of ratios (A/E) by amount for durations 1 to 15+ and for durations 1 to 15+ for three illnesses. Male experience

Population—Male	A/E by Amount					
	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016
Duration 1	28.2	23.3	20.8	19.7	16.6	20.9
Duration 2	43.1	43.6	40.2	36.0	32.6	38.7
Duration 3	41.3	40.3	40.9	43.9	47.3	43.7
Duration 4	48.5	52.1	45.3	42.1	42.9	45.7
Duration 5	52.1	52.9	52.5	52.9	48.1	49.3
Duration 6	46.3	43.3	42.8	46.2	53.1	50.2
Duration 7	62.5	60.3	60.2	64.6	56.2	57.7
Duration 8	54.9	55.7	48.8	51.3	53.1	53.9
Duration 9	54.4	50.1	51.7	50.5	51.9	53.4
Duration 10	54.8	58.0	52.6	51.0	52.8	52.1
Duration 11	56.3	55.4	47.3	45.3	43.2	44.9
Duration 12	71.8	56.6	49.3	50.3	47.4	49.8
Duration 13	59.0	61.1	55.0	48.9	47.2	49.9
Duration 14	58.1	76.2	58.0	55.6	48.4	50.4
Duration 15+	35.1	35.4	45.6	47.5	49.3	48.5
Duration 1—Heart Attack	37.6	36.3	31.5	28.5	22.7	31.4
Duration 2—Heart Attack	33.4	34.0	34.5	22.5	21.9	28.7
Duration 3—Heart Attack	37.9	34.0	35.5	41.9	48.6	44.1
Duration 4—Heart Attack	36.2	38.2	38.6	27.3	24.5	30.8
Duration 5—Heart Attack	42.5	45.1	43.3	42.8	41.2	40.7
Duration 6—Heart Attack	37.0	29.7	32.2	33.3	22.9	30.5
Duration 7—Heart Attack	34.4	31.8	29.9	32.3	27.8	33.1
Duration 8—Heart Attack	36.8	44.3	41.6	47.0	53.3	47.2
Duration 9—Heart Attack	36.3	30.9	38.7	44.1	48.6	46.4
Duration 10—Heart Attack	50.6	61.9	53.7	51.2	60.1	55.0
Duration 11—Heart Attack	64.7	46.2	37.0	31.1	31.5	33.4
Duration 12—Heart Attack	61.8	45.9	36.9	35.7	38.2	41.7
Duration 13—Heart Attack	36.6	33.8	46.5	41.4	34.1	33.6
Duration 14—Heart Attack	55.6	98.6	71.7	76.6	59.4	59.6
Duration 15+—Heart Attack	17.1	12.0	31.9	53.5	47.2	46.3
Duration 1—LT Cancer	34.8	26.0	22.3	21.6	20.4	24.1
Duration 2—LT Cancer	61.6	64.6	58.8	57.9	50.9	57.5
Duration 3—LT Cancer	53.1	56.0	58.9	58.2	61.7	57.1
Duration 4—LT Cancer	62.8	70.9	59.3	60.1	64.1	64.4
Duration 5—LT Cancer	76.1	75.1	69.8	70.6	64.6	69.3
Duration 6—LT Cancer	66.6	63.6	62.6	70.4	84.4	75.6
Duration 7—LT Cancer	88.2	90.1	96.4	106.8	101.1	91.3

Duration 8—LT Cancer	79.3	78.4	68.5	71.4	74.6	75.8
Duration 9—LT Cancer	68.6	68.2	64.5	63.4	61.4	64.5
Duration 10—LT Cancer	66.3	64.3	60.5	61.9	62.4	63.1
Duration 11—LT Cancer	67.7	68.5	64.5	65.7	63.0	63.6
Duration 12—LT Cancer	98.2	85.6	72.7	74.4	63.5	66.0
Duration 13—LT Cancer	90.0	98.0	81.4	69.2	59.1	65.1
Duration 14—LT Cancer	73.2	96.8	73.2	66.5	58.6	61.9
Duration 15+—LT Cancer	59.5	58.3	53.4	56.8	60.9	60.0
Duration 1—Stroke	20.3	11.7	20.5	22.6	22.8	19.6
Duration 2—Stroke	16.7	20.3	39.9	45.4	48.6	33.8
Duration 3—Stroke	53.7	53.7	53.6	48.2	59.2	46.2
Duration 4—Stroke	76.7	84.3	67.2	61.1	56.5	65.5
Duration 5—Stroke	32.2	35.7	30.4	47.4	39.0	37.2
Duration 6—Stroke	21.0	18.3	17.6	14.7	11.5	16.0
Duration 7—Stroke	47.0	52.7	45.1	48.6	41.3	35.4
Duration 8—Stroke	33.2	31.4	29.5	35.1	31.2	31.6
Duration 9—Stroke	43.2	35.4	31.2	21.6	20.8	32.8
Duration 10—Stroke	30.7	59.8	57.3	53.2	48.3	44.0
Duration 11—Stroke	73.3	73.3	35.1	34.3	27.5	39.3
Duration 12—Stroke	52.8	2.2	19.1	19.1	25.6	32.7
Duration 13—Stroke	0.0	3.7	10.8	25.1	34.7	31.3
Duration 14—Stroke	0.0	0.0	27.5	20.2	22.3	20.7
Duration 15+—Stroke	0.0	24.7	72.2	43.0	31.4	30.8

Table C5f. Comparison of ratios (A/E) by amount for durations 1 to 15+ and for durations 1 to 15+ for three illnesses. Female experience

Population—Female	A/E by Amount					
	2007–2012	2008–2013	2009–2014	2010–2015	2011–2016	2007–2016
Duration 1	24.8	24.9	23.3	26.8	25.5	26.0
Duration 2	54.4	51.3	49.0	48.3	47.7	49.9
Duration 3	66.1	63.0	57.8	55.0	54.0	59.1
Duration 4	58.1	59.6	57.0	63.7	63.4	60.4
Duration 5	61.4	62.2	59.5	59.9	58.6	60.6
Duration 6	74.0	69.8	70.6	70.3	63.7	70.0
Duration 7	58.9	54.7	55.6	54.5	54.6	58.4
Duration 8	58.7	58.2	60.8	61.9	61.1	59.7
Duration 9	52.0	54.3	54.9	58.2	60.3	56.8
Duration 10	60.6	56.1	58.1	63.0	62.6	63.0
Duration 11	67.8	63.4	65.4	72.6	69.5	67.3
Duration 12	69.0	56.5	54.7	50.2	51.5	55.0
Duration 13	65.4	63.5	59.9	59.9	56.2	57.0
Duration 14	79.6	93.1	70.1	61.4	55.6	56.9
Duration 15+	31.9	49.3	60.3	57.8	52.7	52.4
Duration 1—Heart Attack	7.6	8.8	20.5	19.1	13.1	11.6
Duration 2—Heart Attack	15.4	13.0	12.5	29.1	23.7	18.9
Duration 3—Heart Attack	27.2	19.3	29.8	29.2	26.1	23.8
Duration 4—Heart Attack	16.8	35.6	28.6	31.5	33.8	26.1
Duration 5—Heart Attack	32.6	44.9	26.1	27.2	25.1	29.1
Duration 6—Heart Attack	38.6	33.5	24.7	10.5	16.0	29.1
Duration 7—Heart Attack	21.3	20.0	24.5	20.2	16.7	21.3
Duration 8—Heart Attack	15.6	17.3	25.6	24.7	23.7	20.6
Duration 9—Heart Attack	9.2	8.1	17.6	18.6	21.1	17.4
Duration 10—Heart Attack	32.0	36.1	27.5	30.4	27.0	30.5
Duration 11—Heart Attack	6.2	8.8	37.7	33.0	34.0	30.9
Duration 12—Heart Attack	32.3	19.2	4.7	10.1	5.5	10.5
Duration 13—Heart Attack	44.9	26.0	25.8	25.7	23.6	27.8
Duration 14—Heart Attack	0.0	0.0	0.0	0.0	8.6	8.1
Duration 15+—Heart Attack	0.0	0.0	17.7	18.2	18.1	17.7
Duration 1—LT Cancer	31.3	32.2	29.3	30.0	30.4	31.5
Duration 2—LT Cancer	73.2	69.2	65.8	63.2	61.6	65.5
Duration 3—LT Cancer	78.4	76.0	74.1	71.1	68.2	72.0
Duration 4—LT Cancer	73.6	73.9	72.8	82.7	83.1	77.9
Duration 5—LT Cancer	71.6	70.6	69.3	71.2	72.3	72.8
Duration 6—LT Cancer	85.2	78.1	80.4	85.8	79.7	83.6
Duration 7—LT Cancer	72.3	69.8	70.7	70.4	73.7	74.8

Duration 8—LT Cancer	76.8	76.7	79.9	81.1	77.4	76.5
Duration 9—LT Cancer	66.9	69.0	69.6	75.7	76.4	71.9
Duration 10—LT Cancer	71.3	65.9	70.9	77.5	77.9	78.0
Duration 11—LT Cancer	80.2	75.6	77.3	90.6	88.4	85.2
Duration 12—LT Cancer	88.9	67.8	69.9	64.4	65.5	70.0
Duration 13—LT Cancer	83.5	80.8	76.8	74.2	66.5	67.7
Duration 14—LT Cancer	84.4	115.9	91.3	85.2	76.9	76.3
Duration 15+—LT Cancer	37.8	66.6	77.1	74.7	66.3	66.0
Duration 1—Stroke	23.1	23.8	18.8	52.5	45.2	36.2
Duration 2—Stroke	29.3	29.0	27.7	17.6	31.9	33.4
Duration 3—Stroke	31.6	31.2	30.3	9.2	10.6	22.7
Duration 4—Stroke	33.1	35.4	31.7	26.8	22.0	25.6
Duration 5—Stroke	39.9	43.9	59.4	55.5	50.4	38.8
Duration 6—Stroke	31.8	45.7	50.5	41.5	36.1	27.5
Duration 7—Stroke	23.1	18.8	24.1	23.6	10.2	17.7
Duration 8—Stroke	17.4	15.0	13.0	15.5	10.9	14.0
Duration 9—Stroke	33.5	38.2	35.3	37.5	29.1	27.3
Duration 10—Stroke	60.6	50.7	52.3	58.1	51.0	53.9
Duration 11—Stroke	104.2	67.9	79.5	70.9	66.7	61.7
Duration 12—Stroke	38.8	63.0	43.4	26.5	31.7	33.9
Duration 13—Stroke	0.0	0.0	28.9	57.7	60.6	56.1
Duration 14—Stroke	228.2	126.8	72.3	39.9	11.5	34.9
Duration 15+—Stroke	0.0	0.0	38.3	22.4	32.9	32.4

**Table C5g. Comparison of ratios (A/E) by number and amount.
Overall experience for policy years 2007–2008 through 2015–2016**

Population—Overall	A/E by Number			A/E by Amount		
	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Duration 1	322	433,078	24.1	25,550,403	37,632,444,636	23.2
Duration 2	611	388,543	45.9	49,094,576	34,521,704,342	43.7
Duration 3	720	359,786	52.4	59,436,532	32,514,669,506	50.5
Duration 4	731	340,651	50.5	65,327,786	31,110,533,334	52.0
Duration 5	804	315,985	53.8	70,371,005	28,981,028,103	54.1
Duration 6	847	291,951	55.4	78,036,182	26,788,238,052	58.4
Duration 7	878	265,808	56.7	78,402,026	24,457,800,356	58.0
Duration 8	806	231,285	53.8	73,654,739	21,378,145,837	56.2
Duration 9	779	198,445	54.5	68,338,570	18,378,588,333	54.7
Duration 10	768	168,428	57.5	65,734,683	15,535,947,885	56.4
Duration 11	560	123,432	54.2	47,141,459	11,154,076,712	54.0
Duration 12	450	95,729	51.5	38,060,820	8,571,235,337	51.9
Duration 13	352	67,247	52.6	29,369,103	5,948,201,782	52.7
Duration 14	237	43,202	50.9	20,687,189	3,819,480,073	52.9
Duration 15+	320	48,265	52.0	27,583,653	4,473,103,181	49.9
Duration 1—Heart Attack	59	427,907	33.3	4,564,714	37,558,347,086	27.8
Duration 2—Heart Attack	58	384,448	31.6	4,651,250	34,461,671,430	26.9
Duration 3—Heart Attack	76	356,704	39.0	7,484,995	32,468,264,380	40.4
Duration 4—Heart Attack	84	338,395	39.7	6,031,651	31,075,571,117	30.0
Duration 5—Heart Attack	99	314,946	44.2	8,149,470	28,964,534,848	38.5
Duration 6—Heart Attack	99	291,951	42.2	6,659,193	26,788,238,052	30.2
Duration 7—Heart Attack	95	265,808	39.6	6,921,999	24,457,800,356	30.8
Duration 8—Heart Attack	96	231,285	41.0	9,191,133	21,378,145,837	42.0
Duration 9—Heart Attack	85	198,445	37.8	8,502,800	18,378,588,333	40.7
Duration 10—Heart Attack	92	168,428	43.6	9,772,814	15,535,947,885	50.1
Duration 11—Heart Attack	55	123,432	33.8	4,789,765	11,154,076,712	32.9
Duration 12—Heart Attack	59	95,729	42.5	4,278,038	8,571,235,337	34.9
Duration 13—Heart Attack	36	67,247	33.7	3,030,722	5,948,201,782	32.3
Duration 14—Heart Attack	26	43,202	34.7	3,164,833	3,819,480,073	47.9
Duration 15+—Heart Attack	47	48,265	46.7	3,756,500	4,473,103,181	39.8
Duration 1—LT Cancer	211	433,078	28.2	16,314,589	37,632,444,636	28.3
Duration 2—LT Cancer	461	388,543	62.1	36,444,826	34,521,704,342	62.0
Duration 3—LT Cancer	519	359,786	68.4	40,288,564	32,514,669,506	65.4
Duration 4—LT Cancer	518	340,651	64.9	47,307,127	31,110,533,334	71.8
Duration 5—LT Cancer	566	315,985	69.0	48,739,285	28,981,028,103	71.2
Duration 6—LT Cancer	615	291,951	73.4	56,358,805	26,788,238,052	79.8
Duration 7—LT Cancer	642	265,808	75.4	59,558,997	24,457,800,356	82.8
Duration 8—LT Cancer	581	231,285	70.2	53,404,795	21,378,145,837	76.2

Duration 9—LT Cancer	553	198,445	69.9	45,825,311	18,378,588,333	68.2
Duration 10—LT Cancer	535	168,428	72.0	44,425,342	15,535,947,885	70.3
Duration 11—LT Cancer	420	123,432	72.4	35,671,858	11,154,076,712	74.4
Duration 12—LT Cancer	319	95,729	64.4	27,685,622	8,571,235,337	68.0
Duration 13—LT Cancer	248	67,247	64.9	20,722,116	5,948,201,782	66.4
Duration 14—LT Cancer	182	43,202	68.0	15,195,256	3,819,480,073	68.6
Duration 15+—LT Cancer	230	48,265	64.0	19,995,843	4,473,103,181	62.5
Duration 1—Stroke	21	427,907	25.6	1,838,000	37,558,347,086	25.9
Duration 2—Stroke	26	384,448	31.3	2,467,000	34,461,671,430	33.6
Duration 3—Stroke	30	356,704	34.5	2,920,000	32,468,264,380	37.7
Duration 4—Stroke	43	338,395	46.1	4,280,000	31,075,571,117	51.3
Duration 5—Stroke	38	314,946	38.7	3,295,700	28,964,534,848	37.8
Duration 6—Stroke	21	291,951	20.5	1,810,000	26,788,238,052	20.0
Duration 7—Stroke	36	265,808	34.3	2,710,000	24,457,800,356	29.3
Duration 8—Stroke	30	231,285	29.2	2,315,000	21,378,145,837	25.6
Duration 9—Stroke	35	198,445	35.3	2,694,765	18,378,588,333	30.9
Duration 10—Stroke	48	168,428	51.0	3,892,064	15,535,947,885	47.3
Duration 11—Stroke	32	123,432	43.5	2,933,952	11,154,076,712	47.3
Duration 12—Stroke	22	95,729	34.7	1,751,617	8,571,235,337	33.1
Duration 13—Stroke	17	67,247	34.4	1,638,327	5,948,201,782	40.1
Duration 14—Stroke	10	43,202	28.5	751,500	3,819,480,073	25.7
Duration 15+—Stroke	19	48,265	39.3	1,351,310	4,473,103,181	31.3

**Table C5h. Comparison of ratios (A/E) by number and amount.
Male experience for policy years 2007–2008 through 2015–2016**

Population—Male	A/E by Number			A/E by Amount		
	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Duration 1	140	202,128	22.4	12,515,214	20,063,663,340	20.9
Duration 2	257	182,567	40.4	24,168,973	18,543,691,071	38.7
Duration 3	326	170,106	48.8	28,985,476	17,513,087,812	43.7
Duration 4	325	161,788	45.3	32,761,372	16,787,073,547	45.7
Duration 5	368	150,647	48.9	37,079,054	15,680,805,014	49.3
Duration 6	387	139,974	49.3	39,321,330	14,547,014,269	50.2
Duration 7	438	127,903	54.2	46,202,144	13,293,467,905	57.7
Duration 8	416	111,787	52.4	42,242,019	11,635,724,048	53.9
Duration 9	394	96,262	51.3	40,258,426	10,005,366,520	53.4
Duration 10	383	81,789	52.6	37,039,610	8,443,524,678	52.1
Duration 11	265	59,046	48.0	23,332,789	5,937,358,374	44.9
Duration 12	226	45,657	47.9	21,857,833	4,555,518,631	49.8
Duration 13	176	32,157	48.0	16,878,152	3,179,531,003	49.9
Duration 14	125	20,779	48.4	12,085,581	2,044,559,027	50.4
Duration 15+	182	23,798	50.9	17,180,622	2,454,748,113	48.5
Duration 1—Heart Attack	54	200,028	40.4	4,214,714	20,032,356,346	31.4
Duration 2—Heart Attack	49	180,894	35.4	4,056,250	18,518,296,474	28.7
Duration 3—Heart Attack	66	168,852	44.8	6,675,995	17,493,448,055	44.1
Duration 4—Heart Attack	66	160,868	41.4	5,058,000	16,772,295,010	30.8
Duration 5—Heart Attack	83	150,220	49.2	6,994,470	15,673,847,135	40.7
Duration 6—Heart Attack	81	139,974	45.9	5,449,193	14,547,014,269	30.5
Duration 7—Heart Attack	81	127,903	45.1	6,005,499	13,293,467,905	33.1
Duration 8—Heart Attack	85	111,787	48.5	8,312,133	11,635,724,048	47.2
Duration 9—Heart Attack	76	96,262	45.4	7,782,800	10,005,366,520	46.4
Duration 10—Heart Attack	76	81,789	48.6	8,574,548	8,443,524,678	55.0
Duration 11—Heart Attack	42	59,046	35.4	3,819,765	5,937,358,374	33.4
Duration 12—Heart Attack	52	45,657	51.8	3,993,038	4,555,518,631	41.7
Duration 13—Heart Attack	27	32,157	35.1	2,450,722	3,179,531,003	33.6
Duration 14—Heart Attack	24	20,779	44.6	3,044,833	2,044,559,027	59.6
Duration 15+—Heart Attack	41	23,798	56.6	3,380,000	2,454,748,113	46.3
Duration 1—LT Cancer	63	202,128	23.2	5,928,000	20,063,663,340	24.1
Duration 2—LT Cancer	156	182,567	56.8	14,797,723	18,543,691,071	57.5
Duration 3—LT Cancer	185	170,106	64.4	15,661,108	17,513,087,812	57.1
Duration 4—LT Cancer	184	161,788	59.5	19,315,264	16,787,073,547	64.4
Duration 5—LT Cancer	208	150,647	63.8	22,026,625	15,680,805,014	69.3
Duration 6—LT Cancer	227	139,974	66.2	25,397,764	14,547,014,269	75.6
Duration 7—LT Cancer	269	127,903	75.2	31,886,115	13,293,467,905	91.3
Duration 8—LT Cancer	248	111,787	69.3	26,344,878	11,635,724,048	75.8

Duration 9—LT Cancer	228	96,262	64.7	21,950,800	10,005,366,520	64.5
Duration 10—LT Cancer	222	81,789	65.5	20,613,498	8,443,524,678	63.1
Duration 11—LT Cancer	174	59,046	66.7	15,358,607	5,937,358,374	63.6
Duration 12—LT Cancer	129	45,657	56.7	13,750,351	4,555,518,631	66.0
Duration 13—LT Cancer	107	32,157	59.5	10,679,218	3,179,531,003	65.1
Duration 14—LT Cancer	81	20,779	62.7	7,360,148	2,044,559,027	61.9
Duration 15+—LT Cancer	115	23,798	61.8	11,020,675	2,454,748,113	60.0
Duration 1—Stroke	9	200,028	20.2	869,000	20,032,356,346	19.6
Duration 2—Stroke	13	180,894	28.3	1,570,000	18,518,296,474	33.8
Duration 3—Stroke	22	168,852	45.1	2,285,000	17,493,448,055	46.2
Duration 4—Stroke	29	160,868	54.8	3,520,000	16,772,295,010	65.5
Duration 5—Stroke	22	150,220	39.2	2,105,700	15,673,847,135	37.2
Duration 6—Stroke	12	139,974	20.3	945,000	14,547,014,269	16.0
Duration 7—Stroke	26	127,903	42.6	2,145,000	13,293,467,905	35.4
Duration 8—Stroke	23	111,787	38.2	1,880,000	11,635,724,048	31.6
Duration 9—Stroke	22	96,262	37.6	1,884,765	10,005,366,520	32.8
Duration 10—Stroke	25	81,789	45.0	2,387,064	8,443,524,678	44.0
Duration 11—Stroke	16	59,046	37.6	1,570,139	5,937,358,374	39.3
Duration 12—Stroke	12	45,657	32.8	1,110,856	4,555,518,631	32.7
Duration 13—Stroke	7	32,157	24.5	825,000	3,179,531,003	31.3
Duration 14—Stroke	6	20,779	29.5	390,000	2,044,559,027	20.7
Duration 15+—Stroke	8	23,798	27.9	874,947	2,454,748,113	30.8

**Table C5i. Comparison of ratios (A/E) by number and amount.
Female experience for policy years 2007–2008 through 2015–2016**

Population—Female	A/E by Number			A/E by Amount		
	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Duration 1	182	230,950	25.6	13,035,189	17,568,781,297	26.0
Duration 2	354	205,976	50.8	24,925,603	15,978,013,271	49.9
Duration 3	394	189,680	55.9	30,451,056	15,001,581,694	59.1
Duration 4	406	178,864	55.6	32,566,414	14,323,459,786	60.4
Duration 5	435	165,338	58.8	33,291,951	13,300,223,089	60.6
Duration 6	460	151,977	61.9	38,714,852	12,241,223,783	70.0
Duration 7	441	137,905	59.5	32,199,882	11,164,332,451	58.4
Duration 8	390	119,498	55.4	31,412,720	9,742,421,789	59.7
Duration 9	385	102,183	58.3	28,080,144	8,373,221,813	56.8
Duration 10	386	86,639	63.4	28,695,073	7,092,423,207	63.0
Duration 11	294	64,385	61.4	23,808,670	5,216,718,338	67.3
Duration 12	224	50,072	55.6	16,202,987	4,015,716,705	55.0
Duration 13	176	35,089	58.1	12,490,951	2,768,670,780	57.0
Duration 14	112	22,423	54.0	8,601,608	1,774,921,046	56.9
Duration 15+	138	24,467	53.5	10,403,031	2,018,355,067	52.4
Duration 1—Heart Attack	5	227,879	11.5	350,000	17,525,990,740	11.6
Duration 2—Heart Attack	9	203,554	20.1	595,000	15,943,374,956	18.9
Duration 3—Heart Attack	10	187,852	21.0	809,000	14,974,816,325	23.8
Duration 4—Heart Attack	18	177,527	34.7	973,651	14,303,276,108	26.1
Duration 5—Heart Attack	16	164,726	28.9	1,155,000	13,290,687,713	29.1
Duration 6—Heart Attack	18	151,977	31.0	1,210,000	12,241,223,783	29.1
Duration 7—Heart Attack	14	137,905	23.3	916,500	11,164,332,451	21.3
Duration 8—Heart Attack	11	119,498	18.6	879,000	9,742,421,789	20.6
Duration 9—Heart Attack	9	102,183	15.7	720,000	8,373,221,813	17.4
Duration 10—Heart Attack	16	86,639	29.3	1,198,266	7,092,423,207	30.5
Duration 11—Heart Attack	13	64,385	29.4	970,000	5,216,718,338	30.9
Duration 12—Heart Attack	7	50,072	18.2	285,000	4,015,716,705	10.5
Duration 13—Heart Attack	9	35,089	30.2	580,000	2,768,670,780	27.8
Duration 14—Heart Attack	2	22,423	9.5	120,000	1,774,921,046	8.1
Duration 15+—Heart Attack	6	24,467	21.3	376,500	2,018,355,067	17.7
Duration 1—LT Cancer	148	230,950	31.0	10,386,589	17,568,781,297	31.5
Duration 2—LT Cancer	305	205,976	65.3	21,647,103	15,978,013,271	65.5
Duration 3—LT Cancer	334	189,680	70.8	24,627,456	15,001,581,694	72.0
Duration 4—LT Cancer	334	178,864	68.4	27,991,863	14,323,459,786	77.9
Duration 5—LT Cancer	358	165,338	72.4	26,712,660	13,300,223,089	72.8
Duration 6—LT Cancer	388	151,977	78.3	30,961,041	12,241,223,783	83.6
Duration 7—LT Cancer	373	137,905	75.5	27,672,882	11,164,332,451	74.8
Duration 8—LT Cancer	333	119,498	70.9	27,059,917	9,742,421,789	76.5

Duration 9—LT Cancer	325	102,183	74.0	23,874,511	8,373,221,813	71.9
Duration 10—LT Cancer	313	86,639	77.5	23,811,844	7,092,423,207	78.0
Duration 11—LT Cancer	246	64,385	77.1	20,313,251	5,216,718,338	85.2
Duration 12—LT Cancer	190	50,072	70.8	13,935,271	4,015,716,705	70.0
Duration 13—LT Cancer	141	35,089	69.8	10,042,898	2,768,670,780	67.7
Duration 14—LT Cancer	101	22,423	73.0	7,835,108	1,774,921,046	76.3
Duration 15+—LT Cancer	115	24,467	66.4	8,975,168	2,018,355,067	66.0
Duration 1—Stroke	12	227,879	32.1	969,000	17,525,990,740	36.2
Duration 2—Stroke	13	203,554	35.0	897,000	15,943,374,956	33.4
Duration 3—Stroke	8	187,852	21.0	635,000	14,974,816,325	22.7
Duration 4—Stroke	14	177,527	34.7	760,000	14,303,276,108	25.6
Duration 5—Stroke	16	164,726	38.2	1,190,000	13,290,687,713	38.8
Duration 6—Stroke	9	151,977	20.9	865,000	12,241,223,783	27.5
Duration 7—Stroke	10	137,905	22.8	565,000	11,164,332,451	17.7
Duration 8—Stroke	7	119,498	16.4	435,000	9,742,421,789	14.0
Duration 9—Stroke	13	102,183	31.8	810,000	8,373,221,813	27.3
Duration 10—Stroke	23	86,639	59.7	1,505,000	7,092,423,207	53.9
Duration 11—Stroke	16	64,385	51.6	1,363,813	5,216,718,338	61.7
Duration 12—Stroke	10	50,072	37.3	640,761	4,015,716,705	33.9
Duration 13—Stroke	10	35,089	48.1	813,327	2,768,670,780	56.1
Duration 14—Stroke	4	22,423	27.2	361,500	1,774,921,046	34.9
Duration 15+—Stroke	11	24,467	55.9	476,363	2,018,355,067	32.4

Table C6a. Comparison of ratios (A/E) by number and amount for underwriting, policy year, and issue year. Overall experience for 2007–2008 through 2015–2016⁴

Population—Overall	A/E by Number			A/E by Amount		
	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Medical						
Non-medical	3,309	1,638,542	53.6	213,906,689	117,938,297,306	54.5
Paramedical	1,820	567,534	44.7	174,891,529	61,039,502,019	47.4
Policy Year 2007–2008	678	266,737	54.2	57,937,885	23,464,744,115	56.3
Policy Year 2008–2009	798	295,749	55.7	66,000,457	26,115,383,486	55.6
Policy Year 2009–2010	846	325,756	52.1	70,114,054	28,869,960,886	51.6
Policy Year 2010–2011	893	356,532	48.8	77,645,668	31,711,398,678	50.3
Policy Year 2011–2012	1,081	366,849	55.6	90,963,994	33,957,459,667	53.3
Policy Year 2012–2013	1,126	399,318	52.1	98,050,301	36,892,945,970	51.8
Policy Year 2013–2014	1,111	423,022	47.3	97,689,218	38,856,522,013	47.5
Policy Year 2014–2015	1,330	453,037	51.7	122,586,831	41,326,948,142	54.7
Policy Year 2015–2016	1,320	484,834	46.9	115,800,318	44,069,834,510	47.2
Issue Year 1996	35	5,144	57.5	3,725,000	522,505,114	59.8
Issue Year 1997	92	10,962	65.7	8,707,560	1,080,125,243	65.1
Issue Year 1998	135	18,144	63.6	11,514,968	1,784,962,061	56.9
Issue Year 1999	207	34,626	56.6	19,463,243	3,112,174,280	62.7
Issue Year 2000	327	60,852	56.5	25,633,319	5,420,436,001	52.4
Issue Year 2001	685	146,403	55.8	57,028,580	12,851,034,372	56.3
Issue Year 2002	804	201,559	51.8	65,620,861	17,245,922,448	52.6
Issue Year 2003	1,030	266,789	54.1	83,942,789	23,611,469,880	53.1
Issue Year 2004	1,083	301,157	55.8	91,862,672	27,385,057,660	55.0
Issue Year 2005	878	278,805	54.8	81,320,064	25,884,612,098	57.5
Issue Year 2006	764	286,303	52.2	67,363,194	26,166,184,136	53.0
Issue Year 2007	651	279,767	50.6	60,077,528	26,504,018,979	51.7
Issue Year 2008	577	277,565	49.4	53,670,316	25,535,871,977	51.4
Issue Year 2009	511	270,451	47.0	48,716,284	24,666,665,700	50.1
Issue Year 2010	434	243,201	46.0	41,887,920	22,305,469,915	49.4
Issue Year 2011	398	214,577	48.1	29,879,375	19,544,408,545	42.5
Issue Year 2012	289	196,266	40.8	24,020,964	17,782,856,312	39.4
Issue Year 2013	143	130,643	32.3	12,062,000	11,236,515,874	33.2
Issue Year 2014	103	94,015	33.8	7,325,500	7,982,935,387	29.9
Issue Year 2015	35	54,170	21.7	2,466,589	4,581,316,280	19.0

⁴ Some of the results cannot be presented due to confidentiality rules (shaded cells).

Table C6b. Comparison of ratios (A/E) by number and amount for underwriting, policy year, and issue year. Male experience for 2007–2008 through 2015–2016⁵

Population—Male	A/E by Number			A/E by Amount		
	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Medical						
Non-medical	1,376	745,003	48.9	95,396,652	57,886,739,748	50.0
Paramedical	934	286,029	42.0	101,442,759	35,936,818,074	44.3
Policy Year 2007–2008	328	130,393	50.5	30,074,928	12,894,281,310	49.8
Policy Year 2008–2009	400	143,785	53.8	36,771,193	14,322,453,148	52.6
Policy Year 2009–2010	406	157,378	48.2	39,428,287	15,773,826,853	49.2
Policy Year 2010–2011	444	171,385	46.8	42,249,931	17,299,286,672	46.3
Policy Year 2011–2012	531	174,479	52.8	51,934,351	18,302,368,894	51.9
Policy Year 2012–2013	550	189,161	49.3	54,153,061	19,832,052,132	48.7
Policy Year 2013–2014	522	199,585	43.0	49,528,394	20,807,108,031	41.1
Policy Year 2014–2015	596	213,100	45.0	64,533,608	22,058,477,163	49.3
Policy Year 2015–2016	632	227,119	43.7	63,234,842	23,395,279,151	44.2
Issue Year 1996	19	2,585	52.5	2,150,000	291,248,224	53.2
Issue Year 1997	61	5,740	71.6	5,667,560	631,422,952	63.3
Issue Year 1998	80	9,543	60.7	7,635,968	1,047,079,052	55.4
Issue Year 1999	120	17,527	56.0	12,767,446	1,728,437,430	64.2
Issue Year 2000	178	29,811	55.0	15,400,156	2,935,031,598	51.2
Issue Year 2001	332	70,524	50.5	32,761,041	7,003,353,330	53.3
Issue Year 2002	410	97,303	49.1	38,102,009	9,314,942,219	51.1
Issue Year 2003	506	127,949	50.2	46,462,912	12,844,046,762	49.2
Issue Year 2004	498	143,907	49.4	45,443,487	14,623,028,245	46.4
Issue Year 2005	431	136,112	51.0	45,704,298	14,042,980,442	54.7
Issue Year 2006	392	139,715	51.6	34,588,790	14,232,076,010	46.5
Issue Year 2007	304	135,464	46.3	33,778,248	14,617,299,770	49.8
Issue Year 2008	257	131,287	44.2	28,600,821	13,812,040,493	47.6
Issue Year 2009	217	126,285	40.9	24,414,422	13,124,917,014	44.4
Issue Year 2010	201	113,436	43.8	23,105,723	12,024,553,465	48.1
Issue Year 2011	166	98,765	42.4	13,913,500	10,358,956,933	35.6
Issue Year 2012	121	91,429	36.1	11,748,214	9,524,947,957	34.5
Issue Year 2013	65	60,457	31.3	6,046,000	5,917,407,801	30.7
Issue Year 2014	38	43,390	26.9	2,873,000	4,217,968,410	21.4
Issue Year 2015	10	24,886	13.7	645,000	2,352,388,121	9.6

⁵ Some of the results cannot be presented due to confidentiality rules (shaded cells).

Table C6c. Comparison of ratios (A/E) by number and amount for underwriting, policy year, and issue year. Female experience for 2007–2008 through 2015–2016⁶

Population—Female	A/E by Number			A/E by Amount		
	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
Medical						
Non-medical	1,933	893,539	57.5	118,510,037	60,051,557,558	58.8
Paramedical	887	281,505	47.9	73,448,770	25,102,683,945	52.7
Policy Year 2007–2008	351	136,344	58.1	27,862,957	10,570,462,805	65.5
Policy Year 2008–2009	399	151,964	57.8	29,229,264	11,792,930,338	59.9
Policy Year 2009–2010	440	168,377	56.3	30,685,767	13,096,134,033	55.1
Policy Year 2010–2011	449	185,147	51.0	35,395,737	14,412,112,006	56.1
Policy Year 2011–2012	550	192,370	58.6	39,029,643	15,655,090,774	55.4
Policy Year 2012–2013	577	210,157	55.1	43,897,240	17,060,893,839	56.0
Policy Year 2013–2014	590	223,437	51.8	48,160,824	18,049,413,982	56.5
Policy Year 2014–2015	735	239,936	58.8	58,053,223	19,268,470,979	62.2
Policy Year 2015–2016	688	257,714	50.3	52,565,476	20,674,555,360	51.3
Issue Year 1996	16	2,559	64.9	1,575,000	231,256,889	72.0
Issue Year 1997	31	5,222	56.5	3,040,000	448,702,291	68.8
Issue Year 1998	55	8,601	68.2	3,879,000	737,883,009	60.2
Issue Year 1999	87	17,099	57.6	6,695,797	1,383,736,850	59.9
Issue Year 2000	149	31,041	58.3	10,233,163	2,485,404,403	54.2
Issue Year 2001	353	75,880	62.0	24,267,539	5,847,681,042	60.9
Issue Year 2002	394	104,256	55.1	27,518,852	7,930,980,229	54.9
Issue Year 2003	524	138,841	58.6	37,479,877	10,767,423,118	59.0
Issue Year 2004	585	157,250	62.8	46,419,185	12,762,029,415	67.3
Issue Year 2005	446	142,693	59.1	35,615,766	11,841,631,656	61.6
Issue Year 2006	372	146,588	52.8	32,774,404	11,934,108,126	62.2
Issue Year 2007	347	144,303	55.0	26,299,280	11,886,719,208	54.4
Issue Year 2008	320	146,278	54.6	25,069,495	11,723,831,484	56.5
Issue Year 2009	295	144,166	52.8	24,301,862	11,541,748,686	57.5
Issue Year 2010	234	129,765	48.1	18,782,197	10,280,916,451	51.1
Issue Year 2011	232	115,812	53.3	15,965,875	9,185,451,612	51.1
Issue Year 2012	167	104,837	45.0	12,272,750	8,257,908,355	45.6
Issue Year 2013	78	70,185	33.2	6,016,000	5,319,108,073	36.1
Issue Year 2014	65	50,624	39.7	4,452,500	3,764,966,977	40.1
Issue Year 2015	25	29,284	28.4	1,821,589	2,228,928,160	29.2

⁶ Some of the results cannot be presented due to confidentiality rules (shaded cells).

Table C7a. Comparison of ratios (A/E) by number for ROP. Overall experience

Population—Overall	A/E by Number						S.D.
ROP	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011–2016	2007–2016	2007–2016
• on Surrender	51.4	50.8	48.3	49.1	48.9	49.4	0.9
• on Expiry75/100	56.7	57.4	61.0	61.7	62.3	59.8	2.0
• only on Death	54.6	54.3	52.7	52.5	51.3	52.0	0.9
No ROP	51.1	50.8	48.2	47.6	46.8	48.3	1.2
Total Experience	53.2	52.8	51.0	51.0	50.4	51.1	0.5

Table C7b. Comparison of ratios (A/E) by number for ROP. Male experience

Population—Male	A/E by Number						S.D.
ROP	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011–2016	2007–2016	2007–2016
• on Surrender	45.6	46.2	43.4	42.9	42.9	43.3	1.2
• on Expiry75/100	50.5	54.3	58.6	58.5	56.6	52.9	2.5
• only on Death	55.0	53.4	50.7	49.3	48.9	50.8	1.2
No ROP	46.9	47.2	44.8	45.2	43.4	44.9	1.6
Total Experience	50.3	50.0	47.8	47.1	46.4	47.5	0.7

Table C7c. Comparison of ratios (A/E) by number for ROP. Female experience

Population—Female	A/E by Number						S.D.
ROP	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011–2016	2007–2016	2007–2016
• on Surrender	57.1	55.4	53.4	55.5	55.0	55.4	1.4
• on Expiry75/100	64.1	61.0	63.8	65.1	68.3	67.4	3.0
• only on Death	54.1	55.3	55.1	56.1	53.9	53.4	1.3
No ROP	55.5	54.5	51.6	50.0	50.3	51.7	1.7
Total Experience	56.2	55.7	54.4	55.2	54.7	55.0	0.8

Table C7d. Comparison of ratios (A/E) by amount for ROP. Overall experience

Population—Overall	A/E by Amount					
	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011–2016	2007–2016
ROP						
• on Surrender	49.3	48.3	46.1	48.9	47.5	48.2
• on Expiry75/100	55.6	55.4	57.8	58.7	60.6	57.7
• only on Death	56.8	55.5	54.3	52.9	52.4	54.0
No ROP	50.7	52.6	50.0	51.4	50.0	50.1
Total Experience	53.1	52.4	50.7	51.6	50.7	51.5

Table C7e. Comparison of ratios (A/E) by amount for ROP. Male experience

Population—Male	A/E by Amount					
	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011– 2016	2007– 2016
ROP						
• on Surrender	44.6	44.3	41.1	41.8	41.2	42.1
• on Expiry75/100	49.5	51.2	53.0	55.7	58.3	52.5
• only on Death	55.9	54.4	51.9	50.0	50.0	52.0
No ROP	46.5	49.6	47.1	50.4	48.1	47.7
Total Experience	49.9	49.6	47.2	47.4	46.8	47.6

Table C7f. Comparison of ratios (A/E) by amount for ROP. Female experience

Population—Female	A/E by Amount					
	2007– 2012	2008– 2013	2009– 2014	2010– 2015	2011–2016	2007–2016
ROP						
• on Surrender	55.8	53.9	53.1	59.0	56.5	56.7
• on Expiry75/100	65.3	61.9	64.7	62.9	63.5	65.2
• only on Death	58.0	57.0	57.6	57.2	55.9	56.8
No ROP	56.6	56.8	54.0	52.8	52.7	53.5
Total Experience	57.8	56.3	55.9	57.8	56.2	57.0

Table C7g. Comparison of ratios (A/E) by number and amount for ROP.
Overall experience for 2007–2008 through 2015–2016

Population—Overall	A/E by Number			A/E by Amount		
	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
ROP						
• on Surrender	2,849	1,249,541	49.4	275,861,777	125,633,228,852	48.2
• on Expiry75/100	932	291,449	59.8	83,929,926	28,101,244,434	57.7
• only on Death	3,664	1,043,508	52.0	308,106,248	92,844,888,141	54.0
No ROP	1,728	781,327	48.3	128,167,275	58,008,979,804	50.1
Total Experience*	9,185	3,371,833	51.1	796,788,726	305,265,197,468	51.5

Table C7h. Comparison of ratios (A/E) by number and amount for ROP.
Male experience for 2007–2008 through 2015–2016

Population—Male	A/E by Number			A/E by Amount		
	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
ROP						
• on Surrender	1,254	589,738	43.3	140,573,925	68,362,428,458	42.1
• on Expiry75/100	434	141,244	52.9	44,998,589	15,073,631,338	52.5
• only on Death	1,902	500,426	50.8	174,672,127	49,296,716,914	52.0
No ROP	813	371,206	44.9	71,407,954	31,460,667,210	47.7
Total Experience*	4,407	1,606,386	47.5	431,908,595	164,685,133,353	47.6

Table C7i. Comparison of ratios (A/E) by number and amount for ROP.
Female experience for 2007–2008 through 2015–2016

Population—Female	A/E by Number			A/E by Amount		
	Claims	Exposures	A/E	Claims \$	Exposures \$	A/E
ROP						
• on Surrender	1,595	659,803	55.4	135,287,852	57,270,800,394	56.7
• on Expiry75/100	499	150,205	67.4	38,931,337	13,027,613,096	65.2
• only on Death	1,762	543,082	53.4	133,434,121	43,548,171,227	56.8
No ROP	916	410,121	51.7	56,759,321	26,548,312,594	53.5
Total Experience*	4,777	1,765,446	55.0	364,880,131	140,580,064,115	57.0

* See observation #3 in the main body of the report.