

MEDAMERICA INSURANCE COMPANY

Address: 165 Court Street, Rochester, New York 14647

Series 11 Group Actuarial Memorandum

April 27, 2017

Product

Comprehensive Form
Comprehensive Certificate

Number

GRP11-341-MA-MD-601
GRP11-342-MA-MD-601

This a group policy form that provides tax-qualified long-term care coverage. MedAmerica Insurance Company (MedAmerica) issued certificates on this form in Maryland in April 2003. The form is no longer being marketed in any jurisdiction.

The experience provided in this actuarial memorandum reflects the combined experience of the policy form listed above as well as similar nationwide individual and group policy forms of the same product series. The company is making a similar request on the Series 11 and Prior Individual policy forms in a concurrent filing (SERFF tracking # MILL-130993131). Section 14 provides a description as to the appropriateness of pooling the experience of these policy forms.

The requested rate increase exceeds 15%; therefore, the increase must be capped at 15% annually, in accordance with COMAR 31.14.01.04(5). Upon reaching agreement with the Department on the number of years in which to spread the rate increases, the company will provide the actuarially equivalent rate increases and rate schedules. The company will notify policyholders of the series of rate increases and cumulative rate increase at the time of implementation of the first year's rate increase.

The justification and support provided in this memorandum serve to demonstrate the appropriateness of the nationwide request, described below in Section 18. Because the Maryland request will be set as actuarially equivalent to the nationwide request, this justification and support is applicable to this request in Maryland.

1. Purpose of Filing

This actuarial memorandum has been prepared for the purpose of demonstrating that the requested rate increase meets the minimum requirements of your jurisdiction and demonstrating compliance with its pre- and post-rate stability regulation, where applicable. It may not be suitable for other purposes.

2. Description of Benefits

These policy forms provide long-term care coverage. Each form has benefit eligibility requirements that involve activities of daily living (ADL) deficiencies or cognitive impairment. Waiver of premium is provided when certain benefits are being paid. A daily benefit, benefit period, and elimination period were selected at issue.

At issue, the insured may have had the option to choose one of the following inflation options, the availability of which varied by policy form: simple inflation for life, simple inflation for 20 years, or compound inflation. The two simple inflation options provide for benefit levels that increase on each anniversary date by 5% of the daily benefit amount chosen at issue for either the life of the insured or 20 years depending on the option chosen. The compound inflation option provides for benefit levels that increase on each anniversary date by 5% compounded annually for the life of the insured. These automatic increasing benefits apply even when the insured is in claim status. For Series 11 Group forms, the insured may have also had the option of a guaranteed purchase option. Under this option, the insured can purchase additional coverage amounts of 5% per year without additional underwriting.

The available choices for benefit period, elimination period, and inflation option are shown in Section 21.

At issue the insured may have had the option of selecting riders that provide the following types of coverage: nonforfeiture, restoration of benefits, return of premium, shortened benefit period, spousal benefit transfer, survivorship benefit, or monthly home health care benefit. The insured may have had the option to select a lifetime, ten-year, or twenty-year premium payment option.

A contingent benefit upon lapse (CBUL) will be available to all insureds at the time of the rate increase.

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3. Renewability

These policies are guaranteed renewable for life.

4. Applicability

This rate increase applies to all policies issued on these forms in this state. The rate changes will apply to the premium of the base form and all applicable options and riders associated with the base form.

5. Actuarial Assumptions

The following assumptions are used to project the experience shown in this filing.

- a. Morbidity reflects claim costs developed using the 2014 Milliman *Long-Term Care Guidelines (Guidelines)* with adjustments for the level of individual vs. group underwriting selection and an all-lives exposure basis. The claim costs were further adjusted based on historical claim experience by policy form cohort, attained age, duration, and coverage type, to the extent credible. One year of retrospective improvement was applied to bring these assumptions forward to 2015 using scalars of 0.990 for females and 0.985 for males.
- b. Mortality Rates reflect the 1994 Group Annuitant Mortality (GAM) Static gender-distinct table with 21 years of retrospective improvement applied to bring this table forward to 2015 using scalars of 0.900 for females and 0.810 for males. These mortality rates are further adjusted based on historical mortality experience by individual/group, issue age band, and duration as shown in the following tables.

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Mortality Durational Adjustment Factors for Individual Business												
Duration*	Issue Age											
	<25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
1	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	20%
2	35	35	35	35	35	35	35	35	35	35	35	30
3	40	40	40	40	40	40	40	40	40	40	40	45
4	43	43	43	43	43	43	43	43	44	45	45	50
5	46	46	46	46	46	46	46	46	48	50	50	55
6	49	49	49	49	49	49	49	49	52	55	55	60
7	52	52	52	52	52	52	52	52	56	60	60	65
8	55	55	55	55	55	55	55	55	60	65	65	70
9	56	56	56	56	56	56	56	56	61	68	69	76
10	57	57	57	57	57	57	57	57	62	71	73	82
11	58	58	58	58	58	58	58	58	63	74	77	88
12	59	59	59	59	59	59	59	59	64	77	81	94
13	60	60	60	60	60	60	60	60	65	80	85	100
14	62	62	62	62	62	62	62	62	69	82	88	101
15	64	64	64	64	64	64	64	64	73	84	91	102
16	66	66	66	66	66	66	66	66	77	86	94	103
17	68	68	68	68	68	68	68	68	81	88	97	104
18	70	70	70	70	70	70	70	70	85	90	100	105
23	70	70	70	70	70	70	70	85	90	100	105	105
28	70	70	70	70	70	70	70	85	90	100	105	105
33	70	70	70	70	70	85	90	100	105	105	105	105
38	70	70	70	70	85	90	100	105	105	105	105	105
43	70	70	70	85	90	100	105	105	105	105	105	105
48	70	70	85	90	100	105	105	105	105	105	105	105
53	70	85	90	100	105	105	105	105	105	105	105	105
58	85	90	100	105	105	105	105	105	105	105	105	105
63	90	100	105	105	105	105	105	105	105	105	105	105
68	100	105	105	105	105	105	105	105	105	105	105	105
73+	105	105	105	105	105	105	105	105	105	105	105	105

* The assumption varies by duration for 18+, but is shown every five years for display purposes.

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Mortality Durational Adjustment Factors for Group Business												
Duration*	Issue Age											
	<25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
1	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	40%
2	70	70	70	70	70	70	70	70	70	70	70	60
3	80	80	80	80	80	80	80	80	80	80	80	90
4	86	86	86	86	86	86	86	86	88	90	90	100
5	92	92	92	92	92	92	92	92	96	100	100	105
6	83	83	83	83	83	83	83	83	88	94	94	102
7	83	83	83	83	83	83	83	83	90	96	96	104
8	83	83	83	83	83	83	83	83	90	98	98	105
9	81	81	81	81	81	81	81	81	88	98	99	105
10	79	79	79	79	79	79	79	79	86	98	101	105
11	77	77	77	77	77	77	77	77	83	98	102	105
12	74	74	74	74	74	74	74	74	81	97	102	105
13	72	72	72	72	72	72	72	72	78	96	102	105
14	74	74	74	74	74	74	74	74	82	98	105	105
15	76	76	76	76	76	76	76	76	86	99	105	105
16	77	77	77	77	77	77	77	77	90	101	105	105
17	79	79	79	79	79	79	79	79	94	102	105	105
18	81	81	81	81	81	81	81	81	98	104	105	105
23	77	77	77	77	77	77	77	94	99	105	105	105
28	74	74	74	74	74	74	89	95	105	105	105	105
33	70	70	70	70	70	85	90	100	105	105	105	105
38	70	70	70	70	85	90	100	105	105	105	105	105
43	70	70	70	85	90	100	105	105	105	105	105	105
48	70	70	85	90	100	105	105	105	105	105	105	105
53	70	85	90	100	105	105	105	105	105	105	105	105
58	85	90	100	105	105	105	105	105	105	105	105	105
63	90	100	105	105	105	105	105	105	105	105	105	105
68	100	105	105	105	105	105	105	105	105	105	105	105
73+	105	105	105	105	105	105	105	105	105	105	105	105

* The assumption varies by duration for 18+, but is shown every five years for display purposes.

c. Voluntary Lapse Rates vary by policy duration and policy form cohort.

Duration	Prior to Series 11	Series 11 Individual	Series 11 Group
1	16.50%	8.50%	6.50%
2	8.50	4.00	6.00
3	5.00	2.75	4.00
4	3.50	2.00	3.50
5	2.00	1.50	3.00
6	1.50	1.25	2.50
7	1.50	1.25	2.00
8	1.50	1.00	1.50
9	1.50	0.75	1.30
10+	1.00	0.60	1.30

The lapse rates in the above table were adjusted based on the following criteria for the limited-pay options:

- For the ten-pay option, a reduction of 65% of the above lapse rates is assumed for durations one through four, a reduction of 70% of the above lapse rates is assumed for durations five through eight, and 0% lapse thereafter.

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- For the twenty-pay option, a reduction of 50% of the above lapse rates is assumed for durations one through eight, a reduction of 75% of the above lapse rates is assumed for durations nine through fifteen, and 0% lapse thereafter.
- d. Benefit Expiry Rates reflect assumed policy termination due to exhaustion of benefits on limited benefit period policies. The rates are based on the *Guidelines* with adjustments for historical benefit expiry experience and vary by gender, benefit period, and attained age as shown in the following table.

Gender	Benefit Period in Years	Attained Age*										
		<65	65	70	75	80	85	90	95	100	105	110+
Female	1	0.0%	0.1%	0.1%	0.3%	0.7%	2.5%	6.1%	10.7%	13.4%	16.7%	33.0%
	2	0.0	0.0	0.1	0.2	0.5	1.6	4.5	8.7	11.7	16.3	33.0
	3	0.0	0.0	0.1	0.1	0.4	1.2	3.4	6.9	9.7	15.0	33.0
	4	0.0	0.0	0.0	0.1	0.3	1.0	2.5	5.0	7.8	13.2	33.0
	5	0.0	0.0	0.0	0.1	0.2	0.7	1.7	3.8	6.3	11.2	33.0
	Unlimited	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Male	1	0.0	0.0	0.1	0.2	0.5	1.5	3.9	6.3	7.8	9.4	33.0
	2	0.0	0.0	0.1	0.1	0.3	1.0	2.5	4.3	5.4	7.3	33.0
	3	0.0	0.0	0.1	0.1	0.2	0.7	1.7	3.0	4.0	5.8	33.0
	4	0.0	0.0	0.0	0.1	0.1	0.4	1.1	2.0	2.8	4.6	33.0
	5	0.0	0.0	0.0	0.0	0.1	0.3	0.8	1.5	2.3	3.6	33.0
	Unlimited	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

* The assumption varies by attained age, but is shown every five years for display purposes.

- e. Policyholder Behavior Due to the Rate Increase. At the time of a rate increase, insureds have the option to elect a CBUL or reduced benefit options (RBO). An increase in morbidity for adverse selection due to the rate increase based on the percentage of policies that elect CBUL and RBO is assumed.

Insureds who elect a CBUL are modeled as a lapse (i.e., the CBUL benefit is not modeled), which results in a slightly lower lifetime loss ratio than if the CBUL benefit had been modeled. The following table provides the CBUL and RBO election rates, reduction to premiums and benefits due to the impact of RBO elections, and increase in morbidity. These assumptions are shown for each of the requested rate increase cohorts.

Benefit Period	CBUL Election Rate	RBO Election Rate	Approximate Reduction for RBO ^[1]	Morbidity Increase for Adverse Selection
Non-Lifetime	8%	15%	7.5%	2%
Lifetime	12	25	19.0	3

[1] The reduction in premiums and benefits due to the impact of RBO election varies based on the level of the rate increase.

- f. Interest Rate of 5.00% is used for accumulating and discounting earned premiums and incurred claims in the calculation of cumulative loss ratios. This rate represents MedAmerica's expectation of its long-term investment earnings rate, which is supported by the average net investment earnings rate projected for MedAmerica's cash flow testing. The maximum valuation interest rate is used to demonstrate compliance with the 58%/85% test required by rate stability regulation, as described in Section 18 below.
- g. Annual Improvement in the mortality and morbidity assumptions is assumed for 15 years starting in 2016. Annual mortality improvement is assumed to be 0.5% and 1.0% for females and males,

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respectively. Annual morbidity improvement is assumed to be 1.0% and 1.5% for females and males, respectively.

- h. Expenses have not been explicitly projected. Originally filed expense assumptions are assumed to remain appropriate, except that reductions are made to the renewal commission rates so that the total commissions paid before and after any increase in premium are similar (i.e., commissions are not paid on the increased premium).

The above assumptions are based on the experience of MedAmerica and its affinity partners that issued the same products, industry experience, and judgment. These assumptions are based on the experience of the particular policy forms in this filing and other similar policy forms where appropriate. In developing the persistency assumptions, policy termination experience through December 31, 2015 was used, whereas for the morbidity assumption, claim experience through December 31, 2014 was used. The above assumptions are deemed reasonable for the particular policy forms in this filing and are considered "most likely" (without explicit margin).

In establishing the assumptions described in this section, the policy design, underwriting, and claims adjudication practices for the above-referenced policy forms were taken into consideration. Appendix A to this memorandum provides a description of the development of and justification for the assumptions used in this filing.

The company is not currently marketing long-term care products. As a result, the requirement to reflect on any assumptions that deviate from those used for pricing other forms currently available for sale is not applicable.

6. Marketing Method

These policy forms were marketed by agents and brokers of the company.

7. Underwriting Description

Policies on the individual forms were fully underwritten.

On the group forms, actively at work employees were subject to short form underwriting. All others were subject to full underwriting.

Groups of at least 500 employees were eligible to elect modified guaranteed issue underwriting for those actively at work. If the employer agreed to contribute 100% of premium for a base plan for a minimum of three years, no underwriting was required for those actively at work.

For both individual and group business, the company used various underwriting tools in addition to the application, which may have included medical records, an attending physician's statement, telephone interview, and/or face-to-face assessment.

8. Premiums

Premiums are unisex and payable for life unless the insured selected a ten-year or twenty-year premium payment option. The premiums may vary by policy form, issue age, elimination period, benefit period, initial daily benefit, inflation option, premium payment option, underwriting class, joint/group discounts, home care percentage, copayment option, marital status at issue, and the selection of any riders.

9. Issue Age Range

Issue ages are from 18 to 85.

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10. Area Factors

Area factors are not used for these products.

11. Premium Modalization Rules

The following modal factors and percent distributions (based on the nationwide combined individual and group forms in-force count as of December 31, 2015) are applied to the annual premium (AP):

Premium Mode	Modal Factors	Percent Distribution
Annual	1.00*AP	45%
Semi-Annual	0.52*AP	4
Quarterly	0.26*AP	22
Monthly	0.09*AP	29

12. Reserves

Active life reserves and reserves for the election of a CBUL have not been used in the experience exhibits for this rate increase analysis. Claim reserves as of December 31, 2015 have been discounted to the incurral date of each respective claim and included in historical incurred claims. An incurred but not reported (IBNR) reserve balance as of December 31, 2015 has been allocated to the 2015 calendar year and included in historical incurred claims.

13. Trend Assumptions

As this is not medical insurance, an explicit medical cost trend is not included in the projections.

14. Actual to Expected Experience

This filing uses nationwide experience of MedAmerica and its affinity partners that issued the above-listed forms and similar individual and group nationwide policy forms. Pooling this experience is appropriate to increase credibility and allow for a uniform rate increase request across similar business. Applying a uniform rate increase to the pool of forms maintains the original pricing relationships of the product design and differences between individual and group business.

Further, pooling MedAmerica’s experience with its affinity partners’ is considered appropriate because the products issued by each affinity partner are identical to those included in this filing, the marketing and distribution employed by each affinity partner is similar to that of MedAmerica, and because the same company (MedAmerica) administers and manages the entire block (including underwriting and claims handling). MedAmerica has 50% to 100% of the risk of the affinity partner forms via reinsurance arrangements with each affinity partner.

Exhibit I provides a comparison of actual and projected experience using current assumptions to that expected using original pricing assumptions. Values in Exhibit I are shown (a) before and (b) after the requested rate increase. Included are calendar year earned premiums, incurred claims, end of year lives, annual loss ratios, cumulative loss ratios, and the ratio of actual-to-expected (A:E) loss ratios.

Exhibit II provides A:E lifetime loss ratios by policy form cohort and benefit period (non-lifetime versus lifetime), which are subsets of the actual and expected nationwide experience underlying Exhibit I.

Actual experience is provided from inception through 2015 and then projected on a seriatim basis for 60 years using the current assumptions described above in Section 5. The actual and projected experience is based on nationwide premiums that reflect prior rate increases filed for use between 2010 and 2015, which average 30% across all jurisdictions. The after increase projected experience reflects the additional increase needed to achieve the cumulative increase on a seriatim basis.

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Expected experience was projected on a seriatim basis from issue using the original pricing assumptions and the actual mix of policies sold.

Exhibit III provides a comparison of the current and original pricing assumptions, which underlie the actual and expected experience described above.

15. History of Previous Rate Revisions

In this jurisdiction, an average cumulative increase of 39% has been filed for use on these individual and group policy forms. The department of insurance filed these increases for use in June 2010, May 2012, and December 2014.

Nationwide, there has been one prior rate increase request on this block of business, which began in December 2009. On average, a cumulative increase of 30% has been filed for use on the above-listed forms and similar individual and group nationwide forms. Departments of insurance filed these increases for use between 2010 and 2015.

Regardless of the prior increase implemented in a particular jurisdiction, the company anticipates requesting an actuarially equivalent cumulative rate increase level in all jurisdictions, except where it is not cost effective to file an increase due to the limited amount of in-force business or regulatory requirements.

16. Analysis Performed to Consider a Rate Increase

Exhibit I demonstrates that experience has been more adverse from that expected in original pricing as the A:E loss ratio exceeds 1.0. The adverse experience is due to a combination of higher persistency and lower interest.

Exhibit IV provides a comparison of actual and projected nationwide experience to that expected in pricing with respect to morbidity, mortality, lapse, interest, and improvement. Please note that to isolate the impact of each changed assumption from pricing, the experience in Exhibit IV has been restated to reflect no prior rate increases.

For the business subject to rate stability regulation, an analysis of the projected loss ratio compared to that assumed at the time of original pricing revealed that experience has unfolded more than moderately adverse and crossed the original pricing threshold for which the company could consider a rate increase. At the time the product was priced, MedAmerica management determined the threshold for future increases would be defined as experience exhibiting deterioration of more than 10% of premium compared to that assumed in pricing. The lifetime loss ratio based on the current assumptions described above in Section 5 is over 100% and well in excess of this original pricing threshold.

17. Requested Rate Increase

The company is requesting a rate increase that varies by benefit period as shown in the following table. The company is seeking this current rate increase request to help alleviate the poor performance on this block of business. While a significantly larger rate increase is needed to restore the performance to the original pricing expectation, the company is willing to shoulder a portion of the needed rate increase for consumers.

The cumulative rate increase levels were determined to allow certification to rate stability, where applicable, and vary by benefit period to better align the rate increase with the adverse experience. MedAmerica's goal is equity across all jurisdictions, to the extent practical. The rate increase was determined in such a way that minimizes subsidization across jurisdictions due to differences in the previously filed rate increases.

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The table below provides the cumulative requested increase for each benefit period cohort, as well as the average cumulative prior increase and resulting current requested premium rate increase based on the nationwide distribution of combined individual and group business as of December 31, 2015.

Benefit Period	Cumulative Requested Increase	Cumulative Prior Increase	Current Requested Increase
Non-Lifetime	135%	28.5%	82.9%
Lifetime	299	33.5	198.8

The increases in the above table are based on the nationwide distribution of business. For similar information based on the distribution of business in this jurisdiction, please see the enclosed cover letter.

For policies with a non-lifetime benefit period, the cumulative rate increase was determined such that the business would break even going forward under moderately adverse conditions for the subset of policies with a lifetime-pay option (i.e., 0% profit margin going forward).

Using a similar approach for policies with a lifetime benefit period, a significantly higher increase is needed (400%+ cumulative increase). Therefore, to reduce the impact of the rate increase on policyholders to the extent possible, the company capped the cumulative rate increase at 299%.

For policies with a non-lifetime benefit period, company management has indicated that if the requested rate increase described above is filed for use, no future premium rate increases are anticipated on policies with a non-lifetime benefit period unless the non-lifetime benefit period experience deteriorates beyond an 85% lifetime loss ratio. Moderately adverse experience (MAE) for the purposes of certification to rate stability is then defined as an approximate 10% multiplicative increase in the lifetime loss ratio for experience of non-lifetime benefit period policies, as shown in Exhibit II (i.e., 85% \approx 1.10 x 78% after increase lifetime loss ratio). This 10% multiplicative increase may be due to any combination of deterioration in the experience from that expected using the current assumptions described in Section 5.

Because policies with a lifetime benefit period have a voluntarily capped requested rate increase, it may not be sufficient to alleviate poor performance and the company may request future increases.

Revised rate tables reflecting the proposed rate increase will be filed with the Department upon approval of this rate filing.

As the company is not currently marketing new business, the required statement that the renewal premium rate schedules are not greater than the new business premium rate schedules is not applicable.

18. Demonstration of Satisfaction of Loss Ratio Requirements

Projected experience assuming the requested increase is implemented is shown in Exhibit I. As shown in Exhibit I, the anticipated lifetime loss ratio without and with the requested rate increase exceeds that expected in original pricing. The projected lifetime loss ratio after the requested increase using the maximum valuation interest rate for contract reserves applicable for the year of issue (ranges from 3.5% to 5.5% and averages 4.3%) is 94%, which is well in excess of the minimum loss ratio required by loss ratio regulation.

Exhibit V provides a demonstration that the requested rate increase meets the 58%/85% test required by rate stability regulation. This exhibit shows that the sum of the accumulated value of incurred claims

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without the inclusion of active life reserves, and the present value of projected incurred claims, without the inclusion of active life reserves, will not be less than the sum of the following:

1. Accumulated value of the initial earned premium times 58%,
2. 85% of the accumulated value of prior premium rate schedule increases,
3. Present value of projected initial earned premium times 58%, and
4. 85% of the present value of projected premium in excess of the projected initial earned premium.

The projected incurred claims in Exhibit V were increased by 14% from the current assumptions described in Section 5 to reflect assumptions that include moderately adverse conditions. A 14% increase in projected incurred claims was determined as one scenario that results in a lifetime loss ratio of 85% (which is the threshold for MAE as described above). It is among many possible alternative adverse experience scenarios, but considered one of the simplest since it involves only one assumption shift. Present and accumulated values in Exhibit V are determined at the maximum valuation interest rate for contract reserves applicable for the year of issue, which as described above, averages 4.3%.

19. Average Annual Premium in Maryland (Based on December 31, 2015 In-Force^[1])

The number of insureds and the corresponding average annual premium that will be affected by this and the identical, concurrent rate increase filing are:

Benefit Period & Cumulative Increase^[2]	Number of Insureds	Before Increase Premium	After Increase Premium
<u>Series 11 and Prior Individual</u>	<u>98</u>	<u>\$2,222</u>	<u>\$4,485</u>
Non-Lifetime Benefit Periods & 135%	76	2,071	3,501
Lifetime Benefit Period & 299%	22	2,746	7,884
<u>Series 11 Group</u>	<u>2</u>	<u>\$1,379</u>	<u>\$2,819</u>
Non-Lifetime Benefit Periods & 135%	2	1,379	2,819
Lifetime Benefit Period & 299%	0	0	0

[1] Excludes policies assumed to be paid up prior to implementation of the requested rate increase.

Annualized premium reflects all rate increases filed for use as of December 31, 2016.

[2] Cumulative increase reflects any prior implemented increases and the requested increase.

20. Proposed Effective Date

This rate increase will apply to policies on their next premium payment date following at least a 60-day policyholder notification period following being filed for use by the department of insurance. Should a multi-year implementation schedule be filed for use, no policyholder will receive more than one increase during a 12 month period.

21. Distribution of Business as of December 31, 2015 (Based on Nationwide In-Force Insured Count of Combined Individual and Group Forms)

Issue Ages	Percent Distribution
<40	8%
40-44	6
45-49	11
50-54	16
55-59	20
60-64	18
65-69	12
70-74	7
75+	2

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Elimination Period	Percent Distribution
0-Day	5%
20-Day	22
30-Day	<1
60-Day	6
90-Day	52
100-Day	5
180-Day	10
365-Day	<1

Benefit Period	Percent Distribution
1-Year	<1%
2-Year	17
3-Year	38
4-Year	8
5-Year	18
Lifetime	19

Inflation Option	Percent Distribution
None	41%
Simple for Life	3
Compound for Life	37
Simple for 20 Years	19
GPO	<1

Premium Payment Option	Percent Distribution
Ten-Pay	14%
Twenty-Pay	9
Lifetime-Pay	77

Coverage Type	Percent Distribution
Facility Only	12%
Comprehensive	87
Home Health Only	1

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22. Number of Insureds and Annualized Premium (Based on December 31, 2015 In-Force^[1])

The number of insureds and annualized premium that will be affected by this and the identical, concurrent rate increase filing are:

Policy Forms	Number of Insureds	Annualized Premium
Maryland - MedAmerica		
Series 11 and Prior Individual	98	\$217,796
Series 11 Group	2	2,759
Total	100	220,555
Nationwide - MedAmerica and Affinity Partners		
Series 11 and Prior Individual	9,001	\$16,082,991
Series 11 Group	5,171	5,851,060
Total	14,172	21,934,051

[1] Excludes policies assumed to be paid up prior to implementation of the requested rate increase. Annualized premium reflects all rate increases filed for use nationwide as of December 31, 2016.

MEDAMERICA INSURANCE COMPANY

Address: 165 Court Street, Rochester, New York 14647

Series 11 Group Actuarial Memorandum

April 27, 2017

23. Actuarial Certification

I am a Principal and Consulting Actuary for Milliman, Inc. and retained by MedAmerica to render an opinion with regard to long-term care insurance rates. I am a member of the American Academy of Actuaries. I meet the Academy's qualification standards to render this actuarial opinion and am familiar with the requirements for filing long-term care insurance premiums and rate increases.

This memorandum has been prepared in conformity with all applicable Actuarial Standards of Practice, including Actuarial Standards of Practice No. 8, "Regulatory Filings for Health Benefits, Accident and Health Insurance, and Entities Providing Health Benefits" and 18, "Long-Term Care Insurance".

I hereby certify that, to the best of my knowledge and judgment, this rate submission is in compliance with the applicable laws and regulations of this jurisdiction and the rules of the department of insurance.

In my opinion, the rates are not excessive or unfairly discriminatory, and bear reasonable relationship to the benefits based on the loss ratio standards of this jurisdiction.

For policies with a non-lifetime benefit period, if the requested one-time premium rate schedule increase is implemented and the underlying assumptions, with moderately adverse conditions reflected, are realized, no further premium rate schedule increases are anticipated on such policies. Moderately adverse conditions are defined as any combination of deterioration in the experience or assumptions that results in a lifetime loss ratio for non-lifetime benefit period policies in excess of 85%.

For policies with a lifetime benefit period, this filing will enhance premium adequacy, but may not be sufficient to prevent future rate action. Therefore, rate stability under moderately adverse conditions cannot be certified to, as required by regulation, for the lifetime benefit period policies.

In forming my opinion, I have used actuarial assumptions and actuarial methods (which gave consideration to policy design, underwriting, and claim adjudication) and such tests of the actuarial calculations as I considered necessary. Based on these assumptions, or statutory requirements where necessary, the premium rate filing is in compliance with the loss ratio standards of this jurisdiction.

I have relied on data and information provided by MedAmerica to develop this memorandum, including but not limited to management's view of when a rate change may be considered, policy design, underwriting and claim adjudication process, seriatim in-force data, claim data, and the company's long-term earnings rate. I have not audited or independently verified the data and information provided, but have reviewed it for reasonableness.

The basis for contract reserves has been previously filed and there is no anticipation of any changes.



Missy Gordon, FSA, MAAA
Principal and Consulting Actuary

Date: April 27, 2017

Exhibit I-a
MedAmerica and Affinity Partners
Actual-to-Expected Experience by Calendar Year
Nationwide Experience Before Requested Rate Increase
Series 11 and Prior Policy Forms

	Calendar Year	Actual or Projected Experience using Current Assumptions				Expected Experience using Pricing Assumptions				Cumulative Loss Ratios with Interest		
		A	B	C = B / A	D	E	F	G = F / E	H	I	J	K = I / J
		Earned Premium	Incurred Claims	Incurred Loss Ratio	End of Year Lives	Earned Premium	Incurred Claims	Incurred Loss Ratio	End of Year Lives	Actual (Column C) with 5.00% Interest	Expected (Column G) with Average 7.24% Interest	Actual-to-Expected Ratio
Historical Experience	1992	17,324	0	0%	111	16,565	3,460	21%	110	0%	21%	0.00
	1993	557,528	112,935	20%	634	556,576	127,290	23%	664	20%	23%	0.86
	1994	1,501,263	28,746	2%	1,377	1,556,224	431,321	28%	1,446	7%	26%	0.27
	1995	2,485,725	109,652	4%	1,944	2,626,940	825,928	31%	2,090	6%	29%	0.19
	1996	3,463,885	134,262	4%	2,689	3,655,699	1,213,762	33%	2,838	5%	31%	0.16
	1997	4,394,237	264,541	6%	3,003	4,557,379	1,550,641	34%	3,068	5%	32%	0.17
	1998	5,341,744	631,867	12%	3,666	5,238,873	1,842,618	35%	3,506	7%	32%	0.22
	1999	6,829,900	1,469,714	22%	4,764	6,315,324	2,175,807	34%	4,387	11%	33%	0.33
	2000	8,941,708	1,172,992	13%	6,200	7,989,544	2,546,851	32%	5,580	11%	32%	0.35
	2001	11,912,872	2,210,887	19%	8,456	10,492,015	2,959,250	28%	7,606	13%	31%	0.41
	2002	16,102,548	4,131,980	26%	11,472	14,152,917	3,467,804	25%	10,303	16%	30%	0.53
	2003	21,498,563	3,506,680	16%	17,713	18,850,587	4,189,633	22%	16,163	16%	28%	0.57
	2004	27,112,675	6,602,535	24%	19,114	23,841,586	5,075,261	21%	17,327	18%	27%	0.66
	2005	28,577,291	6,824,784	24%	20,242	24,495,154	5,782,321	24%	18,002	19%	26%	0.71
	2006	28,838,021	7,359,318	26%	20,095	24,112,407	6,452,826	27%	17,519	20%	26%	0.75
2007	28,383,240	10,552,392	37%	20,146	23,121,105	7,118,474	31%	17,282	22%	27%	0.81	
2008	27,837,724	8,394,073	30%	19,941	22,245,491	7,783,650	35%	16,837	23%	28%	0.82	
2009	26,881,835	11,313,758	42%	19,482	21,096,208	8,413,116	40%	16,173	24%	28%	0.86	
2010	25,544,191	15,723,015	62%	18,494	19,836,480	9,005,281	45%	15,500	27%	29%	0.92	
2011	24,603,117	13,541,344	55%	17,664	18,515,528	9,540,277	52%	14,878	29%	30%	0.95	
2012	25,248,567	17,141,023	68%	17,596	17,260,679	10,108,733	59%	14,699	31%	32%	0.98	
2013	24,384,255	14,626,127	60%	17,264	15,689,414	10,688,938	68%	14,145	32%	33%	0.99	
2014	22,506,450	22,967,435	102%	16,809	14,048,401	11,280,560	80%	13,595	35%	34%	1.04	
2015	21,584,067	20,806,755	96%	16,292	12,930,951	11,880,612	92%	13,054	38%	35%	1.07	
Projected Future Experience (60 Years)	2016	21,357,049	19,334,171	91%	15,800	11,987,427	12,477,661	104%	12,419	39%	36%	1.08
	2017	20,472,802	21,088,277	103%	15,305	11,103,840	13,071,513	118%	11,811	41%	38%	1.09
	2018	19,369,621	22,918,883	118%	14,806	10,227,054	13,665,357	134%	11,225	43%	39%	1.11
	2019	18,406,508	24,740,141	134%	14,304	9,482,088	14,256,157	150%	10,658	45%	40%	1.13
	2020	17,470,951	26,500,160	152%	13,798	8,784,402	14,832,531	169%	10,108	47%	41%	1.14
	2021	16,538,030	28,210,705	171%	13,291	8,115,800	15,406,878	190%	9,577	50%	43%	1.16
	2022	15,596,044	29,815,323	191%	12,781	7,468,255	15,975,430	214%	9,063	52%	44%	1.18
	2023	14,489,872	31,375,747	217%	12,273	6,733,253	16,534,812	246%	8,565	54%	45%	1.20
	2024	13,397,604	32,971,001	246%	11,765	6,043,030	17,067,285	282%	8,083	57%	46%	1.22
	2025	12,476,171	34,561,357	277%	11,259	5,475,192	17,573,477	321%	7,617	59%	47%	1.24
	2026	11,620,802	36,172,635	311%	10,756	4,968,176	18,057,192	363%	7,167	61%	48%	1.26
	2027	10,822,954	37,816,276	349%	10,257	4,514,355	18,522,411	410%	6,733	64%	49%	1.29
	2028	10,000,914	39,512,240	395%	9,763	4,060,850	18,956,201	467%	6,314	66%	50%	1.31
	2029	9,271,931	41,185,438	444%	9,275	3,672,763	19,351,676	527%	5,911	68%	51%	1.33
	2030	8,576,548	42,755,298	499%	8,794	3,315,943	19,702,876	594%	5,524	71%	52%	1.35
	2031	7,910,616	44,446,472	562%	8,319	2,985,585	19,993,572	670%	5,152	73%	53%	1.37
	2032	7,271,681	46,240,732	636%	7,851	2,679,836	20,211,586	754%	4,796	75%	54%	1.39
	2033	6,661,754	47,792,004	717%	7,390	2,398,298	20,342,430	848%	4,455	78%	55%	1.41
	2034	6,080,987	49,155,738	808%	6,939	2,139,370	20,391,336	953%	4,130	80%	56%	1.44
	2035	5,529,732	50,362,279	911%	6,498	1,902,009	20,339,645	1,069%	3,821	82%	56%	1.46
	2036	5,008,443	51,278,195	1,024%	6,067	1,685,080	20,170,560	1,197%	3,527	85%	57%	1.48
	2037	4,517,582	51,873,842	1,148%	5,648	1,487,391	19,884,616	1,337%	3,249	87%	58%	1.50
	2038	4,057,385	52,130,147	1,285%	5,243	1,308,096	19,493,671	1,490%	2,986	89%	58%	1.52
	2039	3,627,888	52,101,378	1,436%	4,851	1,146,276	19,007,851	1,658%	2,738	91%	59%	1.54
	2040	3,228,952	51,679,979	1,601%	4,475	1,000,696	18,430,215	1,842%	2,506	93%	59%	1.56
	2041	2,860,493	50,967,588	1,782%	4,116	870,303	17,768,381	2,042%	2,289	94%	60%	1.58
	2042	2,522,341	49,872,848	1,977%	3,775	753,998	17,026,548	2,258%	2,086	96%	60%	1.60
2043	2,213,884	48,483,371	2,190%	3,452	650,748	16,213,604	2,492%	1,897	98%	60%	1.62	
2044	1,934,179	46,882,208	2,424%	3,148	559,501	15,348,616	2,743%	1,722	99%	61%	1.63	
2045	1,681,891	45,060,682	2,679%	2,863	479,283	14,446,595	3,014%	1,561	100%	61%	1.64	
2046-2050	5,488,041	190,766,034	3,476%	10,711	1,509,875	58,130,778	3,850%	5,799	105%	62%	1.70	
2051-2055	2,424,067	128,724,395	5,310%	6,298	634,353	36,722,123	5,789%	3,381	108%	62%	1.73	
2056-2060	992,438	76,404,751	7,699%	3,589	250,171	21,163,743	8,460%	1,880	109%	62%	1.74	
2061-2065	383,592	41,684,985	10,867%	1,948	93,253	11,560,061	12,396%	966	109%	62%	1.75	
2066-2070	138,711	20,516,091	14,791%	951	32,089	5,999,597	18,697%	429	110%	63%	1.75	
2071-2075	45,729	8,673,354	18,967%	386	9,810	2,666,351	27,181%	150	110%	63%	1.75	

Exhibit I-b
MedAmerica and Affinity Partners
Actual-to-Expected Experience by Calendar Year
Nationwide Experience After Requested Rate Increase
Series 11 and Prior Policy Forms

	Calendar Year	Actual or Projected Experience using Current Assumptions				Expected Experience using Pricing Assumptions				Cumulative Loss Ratios with Interest		
		A	B	C = B / A	D	E	F	G = F / E	H	I	J	K = I / J
		Earned Premium	Incurred Claims	Incurred Loss Ratio	End of Year Lives	Earned Premium	Incurred Claims	Incurred Loss Ratio	End of Year Lives	Actual (Column C) with 5.00% Interest	Expected (Column G) with Average 7.24% Interest	Actual-to-Expected Ratio
Historical Experience	1992	17,324	0	0%	111	16,565	3,460	21%	110	0%	21%	0.00
	1993	557,528	112,935	20%	634	556,576	127,290	23%	664	20%	23%	0.86
	1994	1,501,263	28,746	2%	1,377	1,556,224	431,321	28%	1,446	7%	26%	0.27
	1995	2,485,725	109,652	4%	1,944	2,626,940	825,928	31%	2,090	6%	29%	0.19
	1996	3,463,885	134,262	4%	2,689	3,655,699	1,213,762	33%	2,838	5%	31%	0.16
	1997	4,394,237	264,541	6%	3,003	4,557,379	1,550,641	34%	3,068	5%	32%	0.17
	1998	5,341,744	631,867	12%	3,666	5,238,873	1,842,618	35%	3,506	7%	32%	0.22
	1999	6,829,900	1,469,714	22%	4,764	6,315,324	2,175,807	34%	4,387	11%	33%	0.33
	2000	8,941,708	1,172,992	13%	6,200	7,989,544	2,546,851	32%	5,580	11%	32%	0.35
	2001	11,912,872	2,210,887	19%	8,456	10,492,015	2,959,250	28%	7,606	13%	31%	0.41
	2002	16,102,548	4,131,980	26%	11,472	14,152,917	3,467,804	25%	10,303	16%	30%	0.53
	2003	21,498,563	3,506,680	16%	17,713	18,850,587	4,189,633	22%	16,163	16%	28%	0.57
	2004	27,112,675	6,602,535	24%	19,114	23,841,586	5,075,261	21%	17,327	18%	27%	0.66
	2005	28,577,291	6,824,784	24%	20,242	24,495,154	5,782,321	24%	18,002	19%	26%	0.71
	2006	28,838,021	7,359,318	26%	20,095	24,112,407	6,452,826	27%	17,519	20%	26%	0.75
2007	28,383,240	10,552,392	37%	20,146	23,121,105	7,118,474	31%	17,282	22%	27%	0.81	
2008	27,837,724	8,394,073	30%	19,941	22,245,491	7,783,650	35%	16,837	23%	28%	0.82	
2009	26,881,835	11,313,758	42%	19,482	21,096,208	8,413,116	40%	16,173	24%	28%	0.86	
2010	25,544,191	15,723,015	62%	18,494	19,836,480	9,005,281	45%	15,500	27%	29%	0.92	
2011	24,603,117	13,541,344	55%	17,664	18,515,528	9,540,277	52%	14,878	29%	30%	0.95	
2012	25,248,567	17,141,023	68%	17,596	17,260,679	10,108,733	59%	14,699	31%	32%	0.98	
2013	24,384,255	14,626,127	60%	17,264	15,689,414	10,688,938	68%	14,145	32%	33%	0.99	
2014	22,506,450	22,967,435	102%	16,809	14,048,401	11,280,560	80%	13,595	35%	34%	1.04	
2015	21,584,067	20,806,755	96%	16,292	12,930,951	11,880,612	92%	13,054	38%	35%	1.07	
Projected Future Experience (60 Years)	2016	21,357,049	19,334,171	91%	15,800	11,987,427	12,477,661	104%	12,419	39%	36%	1.08
	2017	22,583,348	20,688,725	92%	14,753	11,103,840	13,071,513	118%	11,811	41%	38%	1.09
	2018	31,032,913	20,353,300	66%	13,841	10,227,054	13,665,357	134%	11,225	42%	39%	1.08
	2019	30,913,659	21,517,495	70%	13,368	9,482,088	14,256,157	150%	10,658	43%	40%	1.07
	2020	29,403,820	22,963,832	78%	12,902	8,784,402	14,832,531	169%	10,108	44%	41%	1.07
	2021	27,844,194	24,394,151	88%	12,434	8,115,800	15,406,878	190%	9,577	45%	43%	1.06
	2022	26,258,749	25,736,673	98%	11,964	7,468,255	15,975,430	214%	9,063	47%	44%	1.07
	2023	24,378,350	27,045,226	111%	11,495	6,733,253	16,534,812	246%	8,565	48%	45%	1.07
	2024	22,514,244	28,386,826	126%	11,026	6,043,030	17,067,285	282%	8,083	50%	46%	1.07
	2025	20,961,536	29,732,623	142%	10,558	5,475,192	17,573,477	321%	7,617	51%	47%	1.08
	2026	19,521,016	31,110,143	159%	10,093	4,968,176	18,057,192	363%	7,167	53%	48%	1.09
	2027	18,184,397	32,524,059	179%	9,631	4,514,355	18,522,411	410%	6,733	54%	49%	1.10
	2028	16,805,411	33,989,625	202%	9,174	4,060,850	18,956,201	467%	6,314	56%	50%	1.11
	2029	15,582,294	35,449,678	227%	8,722	3,672,763	19,351,676	527%	5,911	57%	51%	1.12
	2030	14,414,799	36,828,290	255%	8,275	3,315,943	19,702,876	594%	5,524	59%	52%	1.13
	2031	13,296,068	38,320,299	288%	7,835	2,985,585	19,993,572	670%	5,152	61%	53%	1.14
	2032	12,222,121	39,906,539	327%	7,400	2,679,836	20,211,586	754%	4,796	62%	54%	1.15
	2033	11,196,397	41,294,287	369%	6,971	2,398,298	20,342,430	848%	4,455	64%	55%	1.17
	2034	10,219,348	42,528,304	416%	6,551	2,139,370	20,391,336	953%	4,130	66%	56%	1.18
	2035	9,291,779	43,632,182	470%	6,139	1,902,009	20,339,645	1,069%	3,821	67%	56%	1.20
	2036	8,414,582	44,489,420	529%	5,737	1,685,080	20,170,560	1,197%	3,527	69%	57%	1.21
	2037	7,588,607	45,072,217	594%	5,346	1,487,391	19,884,616	1,337%	3,249	71%	58%	1.22
	2038	6,814,260	45,359,929	666%	4,967	1,308,096	19,493,671	1,490%	2,986	72%	58%	1.24
	2039	6,091,626	45,399,463	745%	4,600	1,146,276	19,007,851	1,658%	2,738	74%	59%	1.25
	2040	5,420,469	45,089,432	832%	4,248	1,000,696	18,430,215	1,842%	2,506	75%	59%	1.27
	2041	4,800,652	44,530,891	928%	3,910	870,303	17,768,381	2,042%	2,289	76%	60%	1.28
	2042	4,231,786	43,632,878	1,031%	3,590	753,998	17,026,548	2,258%	2,086	78%	60%	1.29
2043	3,712,865	42,483,318	1,144%	3,286	650,748	16,213,604	2,492%	1,897	79%	60%	1.30	
2044	3,242,305	41,140,419	1,269%	2,999	559,501	15,348,616	2,743%	1,722	80%	61%	1.32	
2045	2,817,854	39,597,301	1,405%	2,730	479,283	14,446,595	3,014%	1,561	81%	61%	1.33	
2046-2050	9,173,643	168,070,583	1,832%	10,243	1,509,875	58,130,778	3,850%	5,799	85%	62%	1.37	
2051-2055	4,021,162	113,671,834	2,827%	6,054	634,353	36,722,123	5,789%	3,381	87%	62%	1.39	
2056-2060	1,624,306	67,465,499	4,153%	3,467	250,171	21,163,743	8,460%	1,880	87%	62%	1.40	
2061-2065	617,110	36,830,659	5,968%	1,890	93,253	11,560,061	12,396%	966	88%	62%	1.41	
2066-2070	219,541	18,132,511	8,259%	925	32,089	5,999,597	18,697%	429	88%	63%	1.41	
2071-2075	71,513	7,646,541	10,692%	376	9,810	2,666,351	27,181%	150	88%	63%	1.41	

Exhibit II
MedAmerica and Affinity Partners
Actual-to-Expected Experience by Policy Form Cohort and Benefit Period
Nationwide Experience

Policy Form Cohort	Benefit Period	Lifetime Loss Ratio with Interest			Actual-to-Expected	
		Before Increase	After Increase	Expected	Before Increase	After Increase
Prior to Series 11	All	97%	88%	66%	1.47	1.34
Series 11 Individual	All	117%	90%	58%	2.02	1.56
Series 11 Group	All	108%	82%	70%	1.56	1.18
All	Non-Lifetime	93%	78%	64%	1.46	1.22
All	Lifetime	153%	113%	59%	2.57	1.90
All	All	110%	88%	63%	1.75	1.41

**Exhibit III
MedAmerica and Affinity Partners
Comparison of Current and Original Pricing Assumptions**

		Morbidity
Current Assumptions	Series 11 and Prior	Expected claim costs are developed using the 2014 Milliman <i>Long-Term Care Guidelines (Guidelines)</i> with adjustments for individual vs. group underwriting selection and an all-lives exposure basis. The claim costs are further adjusted based on historical claim experience by policy form group, attained age, duration, and coverage type, to the extent credible. One year of retrospective improvement was applied to bring these assumptions forward to 2015 using scalars of 0.990 for females and 0.985 for males.
Original Assumptions	Prior to Series 11	For Series 5, the original pricing expected nursing home incidence rates and continuance tables were developed from a number of sources, but primarily using data published by the Connecticut Department of Health Services. The 1985 National Nursing Home Survey was also used. Selected frequencies were adjusted up for up to the first 12 years following issue to reflect the favorable morbidity expected as a result of the underwriting process. Frequency and length of treatment of the home care and adult day care benefit were based on the 1982 National Long-Term Care Survey. They are adjusted to reflect the effects of elimination periods, policy maximums, and eligibility standards. For Series 8 and 9, the Institutional Benefit rates were developed using source data from the 1977 and 1985 National Nursing Home Surveys. The Home and Community Benefits were developed using source data from the 1989 National Long-Term Care Survey. Adjustments were made to the source data to reflect the selection effect of underwriting and the non-duplication of benefits with other payment sources.
	Series 11	The original pricing expected nursing home and home care incidence rates and continuance tables were taken from the 1997 <i>Guidelines</i> and adjusted for MedAmerica's experience available at the time this rate schedule was developed relative to the <i>Guidelines</i> . All values were adjusted to reflect the effects of product types, elimination periods, policy maximums, and the eligibility standards.
		Mortality
Current Assumptions	Series 11 and Prior	1994 Group Annuitant Mortality (GAM) Static gender-distinct table with 21 years of retrospective improvement applied to bring this table forward to 2015 using scalars of 0.900 for females and 0.810 for males. These mortality rates are further adjusted based on historical mortality experience by individual/group, issue age band, and duration. Tables providing these adjustment factors are provided in Section 5 of the actuarial memorandum.
Original Assumptions	Prior to Series 11	Series 5 policy forms used the 1965-70 US Society of Actuaries Basic Mortality Table without selection. Series 8 and Series 9 policy forms used the 1980 Commissioners Standard Ordinary Basic Mortality Tables assuming a gender mix of 60% female and 40% male and without selection.
	Series 11 Individual	1980 Commissioners Standard Ordinary Basic Mortality Table.
	Series 11 Group	Premier Group policy forms use the 1980 Commissioners Standard Ordinary Basic Mortality Table. TNSE policy forms use the 1983 GAM Static table.

**Exhibit III
MedAmerica and Affinity Partners
Comparison of Current and Original Pricing Assumptions**

		Lapse Rates			
		Voluntary lapse rates (excludes benefit expiry) vary by policy duration and policy form group.			
Current Assumptions	Series 11 and Prior	Lifetime-Pay Lapse Rates			
		Duration	Prior to Series 11	Series 11 Individual	Series 11 Group
		1	16.50%	8.50%	6.50%
		2	8.50%	4.00%	6.00%
		3	5.00%	2.75%	4.00%
		4	3.50%	2.00%	3.50%
		5	2.00%	1.50%	3.00%
		6	1.50%	1.25%	2.50%
		7	1.50%	1.25%	2.00%
		8	1.50%	1.00%	1.50%
		9	1.50%	0.75%	1.30%
10+	1.00%	0.60%	1.30%		
<p>For the 10-pay option, a reduction of 65% of these lapse rates is assumed for durations 1 to 4, a reduction of 70% of these lapse rates is assumed for durations 5 to 8, and 0% lapse thereafter. For the 20-pay option, a reduction of 50% of these lapse rates is assumed for durations 1 to 8, a reduction of 75% of these lapse rates is assumed for durations 9 to 15, and 0% lapse thereafter.</p>					

**Exhibit III
MedAmerica and Affinity Partners
Comparison of Current and Original Pricing Assumptions**

Original Assumptions

Prior to Series 11

Lapse Rates

Lapse rates vary by policy form series, duration, premium payment option, and issue age.

Series 5 Lapse Rates											
Duration	Issue Age										
	<61	61	62	63	64	65	66	67	68	69	70+
1	20.00%	19.00%	18.00%	17.00%	16.00%	15.00%	14.00%	13.00%	12.00%	11.00%	10.00%
2	15.00%	14.00%	13.00%	12.00%	11.00%	10.00%	9.00%	8.00%	7.00%	6.00%	5.00%
3	10.00%	9.40%	8.80%	8.20%	7.60%	7.00%	6.40%	5.80%	5.20%	4.60%	4.00%
4	8.00%	7.60%	7.20%	6.80%	6.40%	6.00%	5.60%	5.20%	4.80%	4.40%	4.00%
5	6.00%	5.70%	5.40%	5.10%	4.80%	4.50%	4.20%	3.90%	3.60%	3.30%	3.00%
6	5.00%	4.80%	4.60%	4.40%	4.20%	4.00%	3.80%	3.60%	3.40%	3.20%	3.00%
7	5.00%	4.80%	4.60%	4.40%	4.20%	4.00%	3.80%	3.60%	3.40%	3.20%	3.00%
8	5.00%	4.80%	4.60%	4.40%	4.20%	4.00%	3.80%	3.60%	3.40%	3.20%	3.00%
9+	5.00%	4.70%	4.40%	4.10%	3.80%	3.50%	3.20%	2.90%	2.60%	2.30%	2.00%

Series 8 Lapse Rates		
Duration	Issue Age	
	<85	85+
1	15.00%	12.00%
2	10.00%	8.00%
3	8.00%	6.40%
4	6.00%	4.80%
5+	5.00%	4.00%

Series 9 Lapse Rates											
Duration	Issue Age										
	<76	76	77	78	79	80	81	82	83	84	85+
1	15.00%	14.70%	14.40%	14.10%	13.80%	13.50%	13.20%	12.90%	12.60%	12.30%	12.00%
2	10.00%	9.80%	9.60%	9.40%	9.20%	9.00%	8.80%	8.60%	8.40%	8.20%	8.00%
3	8.00%	7.84%	7.68%	7.52%	7.36%	7.20%	7.04%	6.88%	6.72%	6.56%	6.40%
4	6.00%	5.88%	5.76%	5.64%	5.52%	5.40%	5.28%	5.16%	5.04%	4.92%	4.80%
5+	5.00%	4.90%	4.80%	4.70%	4.60%	4.50%	4.40%	4.30%	4.20%	4.10%	4.00%

Policy Form Series 8 and 9 issued business under a group trust in a small number of jurisdictions. The original pricing assumptions for claim costs, mortality, and interest did not vary between individual and group trust business but the original pricing voluntary termination rates did. The Series 8 and 9 group trust original pricing voluntary termination rates are shown in the following table:

Series 8 and 9 Group Trust										
Duration	Issue Age									
	<25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
1	16.00%	15.00%	13.50%	12.00%	11.00%	10.00%	8.00%	6.00%	4.00%	3.00%
2	11.00%	10.00%	8.50%	7.00%	7.00%	7.00%	5.50%	4.50%	3.50%	3.00%
3	7.00%	6.00%	6.00%	6.00%	6.00%	6.00%	5.00%	4.50%	3.00%	2.00%
4	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	4.50%	3.00%	2.00%
5	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	4.50%	3.00%	2.00%
6	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	4.50%	3.00%	2.00%
7+	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

The original pricing voluntary lapse rates were expected to be 0.0% for durations 10 and later for policyholders who selected the 10-pay option.

**Exhibit III
MedAmerica and Affinity Partners
Comparison of Current and Original Pricing Assumptions**

		Lapse Rates						
		Lapse rates vary by duration, premium payment option, and issue age. Lapse rates for the lifetime payment option are provided in the tables below for Series 11 Individual, Premier Group, and TNSE policy forms.						
Original Assumptions	Series 11	Series 11 Individual						
			Lapse Rates by Issue Age					
		Duration	<60	60-64	65-69	70-74	75-79	80+
		1	10.00%	11.00%	12.00%	12.00%	12.00%	12.00%
		2	7.00%	7.00%	7.00%	6.00%	4.00%	2.00%
		3	5.00%	4.00%	3.00%	3.00%	3.00%	2.00%
		4	3.00%	3.00%	2.00%	2.00%	2.00%	2.00%
		5	3.00%	2.00%	2.00%	2.00%	2.00%	2.00%
		6+	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
		Premier Group						
			Lapse Rates by Issue Age					
		Duration	<60	60-64	65-69	70-74	75-79	80+
		1	10.00%	11.00%	12.00%	12.00%	12.00%	12.00%
		2	7.00%	7.00%	7.00%	6.00%	4.00%	2.00%
		3	5.00%	4.00%	3.00%	3.00%	3.00%	2.00%
		4	3.00%	3.00%	2.00%	2.00%	2.00%	2.00%
		5	3.00%	2.00%	2.00%	2.00%	2.00%	2.00%
		6+	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
		TNSE						
	Lapse Rates by Issue Age							
Duration	<60	60-64	65-69	70-79	80+			
1	5.00%	5.00%	5.00%	4.00%	3.00%			
2	5.00%	5.00%	5.00%	4.00%	3.00%			
3	5.00%	4.00%	3.00%	3.00%	3.00%			
4	4.00%	4.00%	3.00%	3.00%	3.00%			
5	4.00%	3.00%	3.00%	3.00%	3.00%			
6+	3.00%	3.00%	3.00%	3.00%	3.00%			
For the 10-pay option, a reduction of 50% of these lapse rates is assumed for durations 1 to 6, and 0% lapse thereafter. For the 20-pay option, a reduction of 50% of these lapse rates is assumed for durations 1 to 13, and 0% lapse thereafter.								

**Exhibit III
MedAmerica and Affinity Partners
Comparison of Current and Original Pricing Assumptions**

		Benefit Expiry Rates
Current Assumptions	Series 11 and Prior	Benefit expiry rates reflect assumed policy termination due to exhaustion of benefits on limited benefit period policies. The rates are based on the <i>Guidelines</i> with adjustments for historical benefit expiry experience and vary by gender, benefit period, and attained age. A table containing the benefit expiry rates is provided in Section 5 of the actuarial memorandum.
Original Assumptions	Series 11 and Prior	Benefit expiry was not separated from the lapse assumption.
		Interest Rate
Current Assumptions	Series 11 and Prior	5.00%
Original Assumptions	Prior to Series 11	Series 5 policy forms used 7.10% and Series 8 and 9 policy forms used 7.50%.
	Series 11 Individual	7.50%
	Series 11 Group	Premier Group policy forms used 7.50% and TNSE policy forms used 6.00%.
		Improvement
Current Assumptions	Series 11 and Prior	Annual improvement in the mortality and morbidity assumptions is assumed for 15 years starting in 2016. Annual mortality improvement is assumed to be 0.5% and 1.0% for females and males, respectively. Annual morbidity improvement is assumed to be 1.0% and 1.5% for females and males, respectively.
Original Assumptions	Series 11 and Prior	No mortality or morbidity improvement was assumed.

Exhibit IV
MedAmerica and Affinity Partners
Nationwide Experience Restated to No Prior Rate Increases
Impact of Changing from Pricing to Current Assumptions
Series 11 and Prior Policy Forms

Scenario	Lifetime Loss Ratio	Impact of Each Assumption on the Lifetime Loss Ratio ^[1]	Increase Needed to Produce Lifetime Loss Ratio Expected in Pricing ^{[1][2]}
Original Pricing Assumptions	63%	N/A	N/A
Historical Experience through 2015 & Projections with Original Pricing Assumptions	69%	10%	103%
Historical Experience through 2015 & Projections with Prior Assumptions except for Current:			
Morbidity	69%	0%	4%
Mortality	83%	21%	192%
Voluntary Lapse and Benefit Expiry	72%	5%	47%
Interest	88%	29%	223%
Improvement ^[3]	64%	-7%	-41%
Historical Experience through 2015 & Projections with All Current Most Likely Assumptions ^[4]	118%	89%	528%

[1] Isolates the impact on the lifetime loss ratio/needed increase due to changes in each projection assumption. To isolate these changes, these rows show the increase impact/needed increase relative to a lifetime loss ratio of 69% (i.e., actual historical experience with projections using pricing assumptions). However, the "Historical Experience through 2015 & Projections with Original Pricing Assumptions" row is calculated with regard to 63% to show the isolated impact of historical deviations from that expected based on original pricing from inception.

[2] Calculated without regard to CBUL, RBO, adverse selection, and higher waiver claims due to the needed rate increase.

[3] As a modeling simplification, the isolated impact of improvement on the lifetime loss ratio was approximated by removing the improvement assumption from a projection based on all current assumptions.

[4] The lifetime loss ratios for each change in the rows above do not reflect any synergy of the changes. As a result, compositing across rows will not equal the value in the last row, which is calculated relative to 63% and captures all changes in unison.

Exhibit V
Demonstration that the Requested Cumulative Rate Increase Passes the 58%/85% Loss Ratio Minimum
MedAmerica and Affinity Partners' Nationwide Experience with Prior Approved Increases
Series 11 and Prior Policy Forms

1	Accumulated value of initial earned premium	561,186,775	x	58%	=	325,488,330
2a	Accumulated value of earned premium	579,746,867				
2b	Accumulated value of prior premium rate schedule increases (2a - 1)	18,560,092	x	85%	=	15,776,078
3	Present value of future projected initial earned premium	130,305,350	x	58%	=	75,577,103
4a	Present value of future projected premium	309,359,645				
4b	Present value of future projected premium in excess of the projected initial earned premiums (4a - 3)	179,054,295	x	85%	=	152,196,151
5	Lifetime Earned Premium Times Prescribed Factor: Sum of 1, 2b, 3, and 4b					569,037,662
6a	Accumulated value of incurred claims without the inclusion of active life reserves					220,537,499
6b	Present value of future projected incurred claims without the inclusion of active life reserves					706,064,111
7	Lifetime Incurred Claims with Rate Increase: Sum 6a and 6b					926,601,610
8	Test: 7 is not less than 5					Pass
<p><i>All values are accumulated or discounted at the maximum valuation interest rate for contract reserves applicable for the year of issue, which ranges from 3.5% to 5.5%.</i></p> <p><i>Future projected initial earned premium schedule (i.e., without the requested rate increase) reflects the assumed impact of CBUL and RBO.</i></p> <p><i>The future projected incurred claims (item 6b) were increased by 14% to reflect assumptions with moderately adverse experience.</i></p>						

Appendix A Development and Justification of Current Assumptions

The assumptions for mortality, voluntary lapse, benefit expiry, and morbidity were developed by Milliman based on historical experience. Where actual experience had low credibility or did not exist, industry experience was also used. The experience used to develop these assumptions includes historical experience of MedAmerica Insurance Company (MAPA); MAPA's two sister companies, MedAmerica Insurance Company of Florida (MAFL) and MedAmerica Insurance Company of New York (MANY) (MAPA, MAFL, and MANY collectively referred to as MedAmerica); and MedAmerica's affinity partners that issued the same products. For persistency, policy termination experience through December 31, 2015 was used, except to develop the limited-pay voluntary lapse assumption, which used experience through March 31, 2015. For morbidity, claim experience through December 31, 2014 was used. The methodology used to develop these assumptions is provided below.

Persistency

The assumptions for mortality and lifetime-pay voluntary lapse were developed based on detailed historical experience through December 31, 2015 for MedAmerica's organic (including affinity partners) and acquired business. For the acquired business, experience prior to acquisition was excluded as it predates MedAmerica's administration of the block.

The benefit expiry assumption was developed using the 2014 Milliman *Long-Term Care Guidelines (Guidelines)* with adjustments based on MedAmerica's actual benefit expiry experience through December 31, 2015 on its organic business.

Mortality Durational Factors for Individual Policies

Exhibit A-1a supports the individual business mortality assumption and provides the following information for all companies and products (both individual and group) combined, but separately for issue age bands (i) 75 and older, (ii) 70 to 74, (iii) 65 to 69, and (iv) 60 to 64:

- Exposure that reflects a full year of exposure for each death and the length of time a covered life is exposed to the risk of death during the year for each life that does not die.
- Mortality rates for actual, expected, and an additional standard table for comparison. All of these rates were brought forward to 2015 for consistency with the basis of the expected table by applying mortality improvement factors that reflect annual improvement of 0.5% for females and 1.0% for males.

Actual mortality rates equal the number of deaths divided by exposure. The number of deaths includes a scalar to capture improvement between the year of death and 2015. For example, if 10 males died in 2010, then the number of deaths (10) would be multiplied by 5 years of improvement (0.951).

2015GAM mortality rates equal 94GAM with 21 years of improvement, which results in scalars of 0.900 for females and 0.810 for males. These are the expected mortality rates to which the factors in Section 5 of the actuarial memorandum are applied.

2015IAM is equal to 2012 Individual Annuity Mortality Period (2012IAM) standard table mortality rates with 3 years of improvement (scalars of 0.985 for females and 0.970 for males).

- Ratios of actual and standard table mortality rates to the 2015GAM expected (A:E) mortality rates.
- Credibility percentage based on the number of deaths (with improvement scalars described above) and the credibility measure described at the end of this appendix.
- A:E ratio that is credibility weighted with the two standard table options for a complement.
- Smoothed durational factors that correspond to that shown in Section 5 of the actuarial memorandum.

We developed the smoothed factors by issue age band and duration. We started with the older issue ages to develop an ultimate factor and then worked backward to younger issue age bands, making experience adjustments for the first 20 durations. In developing these experience adjustments, we considered the A:E ratios, level of credibility, whether in the select or ultimate period, and A:E credibility-weighted ratios.

An ultimate level of 105% of 2015GAM was assumed based on the combined experience of issue ages 70 and older for attained ages older than 95 to the extent credible. For the first 20 durations, the factors were pegged for the mid-point of a quinquennial durational band and then interpolated in between to develop smoothed factors. The smoothed factors were determined such that the bands of quinquennial durations reproduced the actual experience, to the extent credible.

Appendix A
Development and Justification of Current Assumptions

Theoretical adjustments are made, following the diagonal, according to the adjustments made for older issue age bands to maintain mortality relationships across attained ages. For example, we assume an 85% factor for attained age 80, which appears in duration 18 for issue age 62 and duration 23 for issue age 57 as shown in Section 5 of the actuarial memorandum; following along this diagonal the assumption is consistent.

Exhibit A-1b provides similar information as Exhibit A-1a for individual business only with issue ages under 60. For development of the mortality assumption for issue ages under 60, the experience was split between individual and group because there is a material amount of group experience under 60. Mortality can differ between individual and group business because of adverse selection associated with group underwriting.

Mortality Durational Factors for Group Certificates

Exhibit A-1c supports the group business mortality assumption and provides exposure, actual and expected mortality rates, mortality A:E ratios, credibility percent, and smoothed scalars. The expected mortality rates include the individual durational mortality factors described above. The smoothed scalars were developed based on group products for issue ages under 60 only because it captures most of the group experience. We did not analyze group experience for other issue ages. These scalars are applied to the individual mortality durational factors, but capped at 105%, to produce the group mortality durational factors shown in Section 5 of the actuarial memorandum.

Lifetime-Pay Voluntary Lapse Rates

Exhibit A-2a provides total exposure, composite termination rates, expected mortality rates, derived voluntary lapse rates, credibility percent, and smoothed voluntary lapse rates for Prior to Series 11 policies by duration. Exhibit A-2b and Exhibit A-2c provide similar information for Series 11 Individual and Series 11 Group policies, respectively.

In general, the smoothed voluntary lapse rates were set in such a way that the combined duration smoothed rates were close to the derived voluntary lapse rates (see the rows at the bottom of the exhibits). The smoothed voluntary lapse rates in the early durations were chosen to reproduce actual history, to the extent possible, so that the transition from historical to projected policy persistency was smooth. In developing the ultimate voluntary lapse rate, the level of credibility of the actual voluntary lapse experience and the experience of other form groups were considered, as applicable. The degree of closeness of the smoothed voluntary lapse rate compared to actual experience depends on the level of credibility.

The actual composite (mortality and voluntary lapse) termination rates were calculated by duration as follows:

$$\text{Annualized Composite Termination Rate} = \frac{\text{Number of Deaths and Voluntary Lapses during the Year}}{\text{Number of Lives Exposed during the Year}}$$

A death or voluntary lapse (excluding benefit expiry) was assigned to the duration in which it occurred, or the preceding duration, if the termination was on the anniversary date. Each death or voluntary lapse contributes 1.0 to the numerator and a full year to the denominator. For lives whose benefits expire or do not terminate, the number of lives exposed to termination is based on the length of time a covered life is exposed to the risk of termination due to death or voluntary lapse during the year. This calculation logic is consistent with that used in the LTC Insurance Persistency Experience reports sponsored by LIMRA International and the SOA LTC Experience Committee.

The expected mortality rate assumes the gender-distinct 2015GAM table with the durational factors shown in Section 5 of the actuarial memorandum applied by duration.

The derived voluntary lapse rate is then calculated according to the following formula:

$$\text{Derived Voluntary Lapse Rate} = 1 - \frac{1 - \text{Composite Termination Rate}}{1 - \text{Expected Mortality Rate}}$$

Limited-Pay Voluntary Lapse Rates

The algorithm for the limited-pay options is similar to that used in original pricing. The smoothed lapse rates are a scalar of the lifetime-pay lapse rates. Only 23% of the in-force policies on these forms have a limited-pay option and thus the impact of these assumptions on the projections is assumed to be immaterial.

For the 10-pay and 20-pay options, the scalars were developed from a comparison of the lifetime-pay derived lapse rates to the limited-pay option's derived lapse rates based on MedAmerica and its affinity partners' experience on all

Appendix A

Development and Justification of Current Assumptions

products combined. The relationships derived from this analysis were used to develop the smoothed lapse assumptions for the 10- and 20-pay options shown in Section 5 of the actuarial memorandum.

Benefit Expiry

Benefit expiry rates reflect assumed policy lapses due to exhaustion of benefits based on the 2014 *Guidelines* with adjustments for historical benefit expiry experience and vary by attained age, gender, and benefit period. Policies with lifetime benefits do not have an expiry assumption (i.e., rate of 0%).

We compared MedAmerica's actual benefit expiry experience through December 31, 2015 to that expected by the 2014 *Guidelines*. We developed adjustment factors by attained age based on the experience of a subset of MedAmerica's organic business, which included the Series 11 and Prior business. Factors were developed by quinquennial attained age band and then interpolated to produce scalars for each attained age. These scalars were then applied to the benefit expiry rates developed by the 2014 *Guidelines* in order to produce the final benefit expiry assumptions shown in Section 5 of the actuarial memorandum.

Exhibit A-3 provides exposure, actual and expected benefit expiry rates, A:E ratios, credibility percent, credibility-weighted A:E ratios, and smoothed adjustment factors. The exposure used reflects a full year of exposure for each benefit expiry and the length of time a covered life is exposed to the risk of benefit expiry during the year for each life that does not expire benefits.

Morbidity

The claims costs were developed using the 2014 *Guidelines*. A:E experience analyses were performed to develop most likely (with no explicit margin) morbidity experience adjustments to be applied to the 2014 *Guidelines* claim costs. The experience used includes historical experience for all products of MedAmerica, its affinity partners, and any acquired business from 2004 through 2014, with runout through June 2015. The claim costs were then further adjusted based on historical claim experience by policy duration, attained age, and coverage-type, to the extent credible.

A:E adjustment factors were developed using a complex and proprietary Excel-based model. Adjustments were developed by the following parameters: policy duration, attained age, coverage type, group/individual, benefit payment type, company, and product. The adjustment factors were calculated using an algorithm that simultaneously and iteratively updates the adjustment factors until the adjusted expected incurred claims match actual incurred claims, to the extent credible. The adjusted expected incurred claims equal the 2014 *Guidelines* (with adjustments for historical improvement) multiplied by the A:E adjustment factors. The iterative process normalizes the adjustments for each parameter because the adjusted expected incurred claims capture the adjustments made for the other characteristics and thus normalizes the underlying mix differences.

Exhibit A-4a provides separate A:E adjustment factors for the Prior to Series 11, Series 11 Individual, and Series 11 Group blocks after multiplying the appropriate combination of factors for policy duration, attained age, and coverage type.

Exhibit A-4b provides an indication of the goodness of fit for each product. Exhibit A-4b provides the credibility and ratio of actual to adjusted expected incurred claims by policy duration band and attained age band. The credibility and ratio's numerator (actual incurred claims) is shown for the Prior to Series 11, Series 11 Individual, and Series 11 Group blocks' separate experience. The ratio's denominator (adjusted expected incurred claims) is equal to the unadjusted expected incurred claims (2014 *Guidelines*) multiplied by the A:E adjustment factors. The actual-to-adjusted expected ratio provides an indication of the goodness of fit of the assumption relative to actual experience, where a ratio close to 1.00 is a good fit. The actual-to-adjusted expected ratio is close to 1.00 where the experience is fully credible. As can be seen from the Total row (shaded grey), the actual to adjusted expected ratio is close to 1.00. The goodness-of-fit test by attained age band includes only experience for durations seven and later to reduce the impact of the selection period.

Improvement

For projected mortality improvement, levels of 0.5% and 1.0% are assumed for 15 years beginning in calendar year 2016 for females and males, respectively. The Society of Actuaries (SOA) June 2011 study, *Global Mortality Improvement Experience and Projection Techniques*, provides most-likely mortality improvement assumptions for the period 2011 to 2025 by gender and attained age, for individual annuitants and the general population. For individual annuitants, the average annual improvement rates for males and females are approximately 1.5% and 1.0%, respectively. These rates were about 25 basis points higher than that for the general population. Based on this

Appendix A Development and Justification of Current Assumptions

study, a reasonable range for mortality improvement is 0.0% to 1.5% for males and 0.0% to 1.0% for females for 10 to 20 years.

For projected morbidity improvement, levels of 1.0% and 1.5% are assumed for 15 years beginning in calendar year 2016 for females and males, respectively. This assumption is reasonable based on the SOA July 2016 study, *Long Term Care Morbidity Improvement Study: Estimates for the Non-Insured U.S. Elderly Population Based on the National Long Term Care Survey 1984-2004*. This study reported population annual morbidity improvement of 2.3% for unisex, 2.5% for males, and 2.1% for females. The SOA July 2016 study uses population data, so it is uncertain how well these findings will translate to an insured population. The SOA June 2011 study suggests that an annuitant cohort has more mortality improvement over the general population, so it is possible that this could be true for morbidity as well. Based on these studies, a reasonable range for morbidity improvement is between 0.0% to 2.5% for males and 0.0% to 2.1% for females for 10 to 20 years.

Rate Increase Dependent Assumptions

At the time of a rate increase, insureds have options to elect a contingent benefit upon lapse (CBUL) or reduced benefit options (RBO). Adverse selection is assumed relative to CBUL elections. In determining the justified rate increase amounts, rate increase dependent assumptions were also developed. Very little industry data exists to help determine these assumptions, especially for the magnitude of rate increases that are requested. These insured behavior assumptions are provided below, and are based on MedAmerica's actual CBUL/RBO election experience to the extent applicable, assumptions for rate increase filings of other carriers in the LTC industry, and actuarial judgment.

Contingent Benefit Upon Lapse Election

Based on the average rate increase requests nationwide, we assume a CBUL election rate of 8% for the rate increase for non-lifetime benefit periods and 12% for lifetime benefit periods. No CBUL elections are assumed for limited-pay policies.

Reduced Benefit Options

It is assumed that there will be an approximate 7.5% reduction to premium and benefits due to RBO elections for non-lifetime benefit period policies and an approximate 19% reduction to premium and benefits due to RBO elections for lifetime benefit period policies. These assumed reductions to premium and benefits due to RBO elections were derived from actual RBO election rates based on the combined experience of MedAmerica and its affinity partners following a prior rate increase on this and similar blocks of business along with actuarial judgment. We assume that those electing RBO will reduce their benefits so that premiums after the increase are closer to those before the increase. We assume that the percent reduction in premium corresponds to an equivalent percent reduction in claims. Based on the nationwide average rate increase requested on these policy forms, we assume 15% of non-lifetime benefit period policies and 25% of lifetime benefit period policies will elect RBO. No RBO elections are assumed for limited-pay policies. The reduction to premium and claims can then be determined as follows:

Reduction to premium and claims due to the election of RBO
= $1 - (\text{Average premium level after the rate increase with RBO election} / \text{Premium level after the full rate increase without any RBO election})$, where

Average premium level after the rate increase with RBO election
= weighted average premium level of those assumed to elect RBO with those assumed to accept the full rate increase

Adverse Selection

The 2% to 3% increase to morbidity due to adverse selection was developed from the following formula and actuarial judgment. We assume that at the time of the rate increase, insureds that elect a CBUL will be selective in that their relative morbidity is 25% lower than that of the remaining pool.

$\text{PoolMorb} = \text{AdvSelMorb} \times (1 - \text{CBUL}) + [(1 - 25\%) \times \text{AdvSelMorb}] \times \text{CBUL}$, where

PoolMorb = morbidity of the pool before the rate increase = 1.0
AdvSelMorb = adverse morbidity of the remaining pool after the rate increase due to selective lapses
CBUL = percentage of policies that elect CBUL

Appendix A
Development and Justification of Current Assumptions

Solving the above for the adverse selection component results in the following formula:

$$\begin{aligned} \text{Adverse Selection} &= 1 / (1 - 25\% \times \text{CBUL}) \\ 1.02 &\sim 1 / (1 - 25\% \times 8\%) \text{ for non-lifetime benefit period policies} \\ 1.03 &\sim 1 / (1 - 25\% \times 12\%) \text{ for lifetime benefit period policies} \end{aligned}$$

Credibility

The methodology employed to develop the assumptions considers actual historical experience and its associated credibility. The credibility percentage for each assumption was determined as $(\text{Number of Events} / \text{Credibility Threshold})^{1/2}$, with events defined as deaths, voluntary lapses, benefit expiries, or claims. A credibility standard of a 90% confidence interval for the number of events with an error of plus or minus 7.5% was chosen. Based on these parameters, 481 events is the criterion for full credibility.

Exhibit A-1a
Actual-to-Expected (A:E) Mortality Experience through December 31, 2015
All Products

Duration	Exposure	Mortality Rate			Ratios to 2015GAM		Credibility Percent	A:E Credibility-Weighted with:		Smoothed Durational Factors
		Actual (A)	2015GAM (E)	2015IAM (X)	Actual (A:E)	2015IAM (X:E)		2015GAM (E:E=1.00)	2015IAM (X:E)	
Issue Age 75+										
1-5	24,998	1.8%	4.4%	3.1%	0.40	0.70	95%	0.43	0.41	0.41
6-10	20,553	5.0%	7.0%	5.5%	0.71	0.78	100%	0.71	0.71	0.71
11-15	11,268	10.1%	10.5%	8.8%	0.96	0.84	100%	0.96	0.96	0.96
16-20	3,330	16.3%	16.1%	14.2%	1.02	0.88	100%	1.02	1.02	1.04
21-25	415	25.3%	22.2%	20.6%	1.14	0.93	47%	1.07	1.03	1.05
26+	25	7.8%	32.1%	30.8%	0.24	0.96	6%	0.95	0.91	1.05
21+	440	24.3%	22.8%	21.2%	1.07	0.93	47%	1.03	0.99	1.05
All	60,589	5.4%	7.2%	5.7%	0.75	0.79	100%	0.75	0.75	0.75
Issue Ages 70 - 74										
1-5	39,706	0.9%	2.2%	1.4%	0.41	0.64	87%	0.49	0.45	0.40
6-10	38,186	2.4%	3.7%	2.5%	0.66	0.67	100%	0.66	0.66	0.65
11-15	27,286	4.9%	6.0%	4.4%	0.83	0.74	100%	0.83	0.83	0.84
16-20	10,157	9.1%	9.4%	7.7%	0.98	0.82	100%	0.98	0.98	0.98
21-25	2,029	14.6%	14.3%	12.3%	1.02	0.86	78%	1.02	0.99	1.04
26+	138	25.8%	20.4%	18.6%	1.27	0.91	27%	1.07	1.01	1.05
21+	2,167	15.3%	14.7%	12.7%	1.04	0.87	83%	1.03	1.01	1.04
All	117,501	3.3%	4.4%	3.2%	0.75	0.73	100%	0.75	0.75	0.75
Issue Ages 65 - 69										
1-5	67,094	0.6%	1.4%	0.9%	0.42	0.65	90%	0.48	0.44	0.40
6-10	65,409	1.4%	2.2%	1.4%	0.64	0.64	100%	0.64	0.64	0.65
11-15	50,103	2.9%	3.7%	2.4%	0.78	0.66	100%	0.78	0.78	0.79
16-20	23,101	5.3%	5.9%	4.3%	0.90	0.74	100%	0.90	0.90	0.90
21-25	6,829	9.5%	9.3%	7.6%	1.03	0.82	100%	1.03	1.03	0.99
26+	533	13.8%	13.6%	11.6%	1.01	0.86	39%	1.01	0.92	1.04
21+	7,362	9.8%	9.6%	7.9%	1.03	0.82	100%	1.03	1.03	0.99
All	213,069	2.2%	3.0%	2.0%	0.75	0.69	100%	0.75	0.75	0.74
Issue Ages 60 - 64										
1-5	93,335	0.3%	0.9%	0.6%	0.41	0.72	82%	0.51	0.46	0.39
6-10	85,284	0.8%	1.4%	0.9%	0.57	0.65	100%	0.57	0.57	0.59
11-15	58,636	1.5%	2.3%	1.5%	0.68	0.65	100%	0.68	0.68	0.67
16-20	27,386	3.2%	3.8%	2.5%	0.85	0.67	100%	0.85	0.85	0.83
21-25	9,435	5.5%	6.1%	4.5%	0.90	0.75	100%	0.90	0.90	0.90
26+	782	9.5%	9.1%	7.5%	1.05	0.82	39%	1.02	0.91	0.97
21+	10,217	5.8%	6.3%	4.8%	0.92	0.76	100%	0.92	0.92	0.91
All	274,857	1.2%	1.8%	1.2%	0.68	0.68	100%	0.68	0.68	0.67

Exhibit A-1b
Actual-to-Expected (A:E) Mortality Experience through December 31, 2015
Individual Products

Duration	Exposure	Mortality Rate			Ratios to 2015GAM		Credibility Percent	A:E Credibility-Weighted with:		Smoothed Durational Factors
		Actual (A)	2015GAM (E)	2015IAM (X)	Actual (A:E)	2015IAM (X:E)		2015GAM (E:E=1.00)	2015IAM (X:E)	
Issue Age <60										
1-5	213,822	0.1%	0.3%	0.2%	0.39	0.86	66%	0.59	0.55	0.38
6-10	134,800	0.3%	0.5%	0.4%	0.54	0.77	88%	0.59	0.56	0.54
11-15	57,646	0.6%	0.9%	0.7%	0.61	0.69	83%	0.67	0.62	0.60
16-20	24,577	1.1%	1.5%	1.0%	0.70	0.67	74%	0.78	0.69	0.70
21-25	9,193	1.7%	2.4%	1.6%	0.70	0.67	57%	0.83	0.68	0.79
26+	759	2.9%	4.4%	3.1%	0.65	0.72	21%	0.93	0.70	0.87
21+	9,952	1.8%	2.6%	1.7%	0.69	0.68	61%	0.81	0.68	0.80
All	440,797	0.3%	0.6%	0.4%	0.56	0.75	100%	0.56	0.56	0.57

Exhibit A-1c
Actual-to-Expected (A:E) Mortality Experience through December 31, 2015
Group Products

Duration	Exposure	Actual Mortality Rate	Expected Mortality Rate ^[1]	Mortality A:E	Credibility Percent	Smoothed Scalars
Issue Age <60						
1-5	120,598	0.2%	0.1%	2.00	65%	2.00
6-10	109,681	0.3%	0.2%	1.48	85%	1.50
11-15	71,689	0.5%	0.4%	1.20	83%	1.20
16-20	25,556	0.7%	0.6%	1.15	59%	1.15
21-25	11,926	0.8%	0.9%	0.93	45%	1.10
26-30	305	1.3%	1.2%	1.06	9%	1.05
31+	0	N/A	N/A	N/A	0%	1.00

[1] Includes the durational adjustment factors developed for individual business.

Exhibit A-2a
Derived Lifetime-Pay Voluntary Lapse Experience through December 31, 2015
Prior to Series 11 Policy Forms

Duration	Exposure	Composite Termination Rates	Expected Mortality Rates	Derived Lapse Rates	Credibility Percent	Smoothed Lapse Rates
1	5,409	16.9%	0.6%	16.4%	100%	16.50%
2	4,493	9.3%	0.9%	8.4%	89%	8.50%
3	4,076	6.5%	1.3%	5.2%	68%	5.00%
4	3,810	5.3%	1.5%	3.6%	55%	3.50%
5	3,607	4.0%	1.9%	2.0%	41%	2.00%
6	3,457	3.1%	2.0%	0.9%	34%	1.50%
7	3,345	3.7%	2.3%	1.2%	29%	1.50%
8	3,209	4.6%	2.5%	1.8%	33%	1.50%
9	3,047	4.0%	2.8%	1.0%	30%	1.50%
10	2,913	4.5%	3.1%	1.2%	31%	1.00%
11	2,765	5.4%	3.4%	1.8%	27%	1.00%
12	2,604	5.2%	3.7%	1.3%	25%	1.00%
13	2,447	5.5%	3.9%	1.4%	22%	1.00%
14	2,289	5.6%	4.2%	1.2%	20%	1.00%
15	2,087	4.9%	4.6%	0.2%	16%	1.00%
16	1,858	5.7%	5.0%	0.6%	18%	1.00%
17	1,504	6.8%	5.5%	1.3%	18%	1.00%
18	1,104	6.6%	6.0%	0.5%	9%	1.00%
19	710	7.2%	6.6%	0.5%	8%	1.00%
20	422	8.8%	7.1%	1.7%	6%	1.00%
21	224	8.9%	7.5%	1.4%	6%	1.00%
22	99	12.1%	8.9%	3.5%	6%	1.00%
23	28	7.2%	10.6%	-3.8%	5%	1.00%
24	1	0.0%	12.6%	-14.4%	0%	1.00%
1-3	13,978	11.4%	0.9%	10.5%	100%	10.6%
4-6	10,875	4.1%	1.8%	2.2%	77%	2.4%
7-9	9,601	4.1%	2.5%	1.4%	53%	1.5%
5+	37,720	4.8%	3.4%	1.3%	100%	1.3%
6+	34,113	4.9%	3.6%	1.2%	92%	1.2%
7+	30,656	5.1%	3.8%	1.2%	85%	1.2%
8+	27,311	5.3%	4.0%	1.2%	80%	1.1%
9+	24,103	5.4%	4.2%	1.1%	73%	1.1%
10+	21,056	5.6%	4.3%	1.1%	66%	1.0%
All	55,509	6.5%	2.7%	3.8%	100%	3.8%

Exhibit A-2b
Derived Lifetime-Pay Voluntary Lapse Experience through December 31, 2015
Series 11 Individual Policy Forms

Duration	Exposure	Composite Termination Rates	Expected Mortality Rates	Derived Lapse Rates	Credibility Percent	Smoothed Lapse Rates
1	12,157	8.6%	0.2%	8.3%	100%	8.50%
2	11,116	4.4%	0.4%	4.0%	96%	4.00%
3	10,632	3.4%	0.5%	2.8%	79%	2.75%
4	10,244	2.6%	0.6%	2.0%	65%	2.00%
5	9,933	2.1%	0.8%	1.3%	54%	1.50%
6	9,696	2.3%	0.9%	1.4%	54%	1.25%
7	9,432	2.4%	1.1%	1.3%	52%	1.25%
8	9,116	2.1%	1.3%	0.8%	41%	1.00%
9	8,825	2.4%	1.5%	0.9%	38%	0.75%
10	8,499	2.5%	1.7%	0.8%	36%	0.60%
11	8,129	2.5%	1.9%	0.6%	34%	0.60%
12	7,460	2.7%	2.1%	0.5%	31%	0.60%
13	5,806	3.0%	2.4%	0.5%	25%	0.60%
14	4,305	3.2%	2.8%	0.4%	23%	0.60%
15	2,813	3.4%	3.2%	0.2%	12%	0.60%
16	1,878	3.6%	3.4%	0.2%	8%	0.60%
17	1,351	5.0%	3.5%	1.6%	8%	0.60%
18	108	2.8%	3.7%	-1.0%	0%	0.60%
1-3	33,905	5.6%	0.4%	5.2%	100%	5.2%
4-6	29,874	2.4%	0.8%	1.6%	100%	1.6%
7-9	27,373	2.3%	1.3%	1.0%	76%	1.0%
5+	87,352	2.6%	1.6%	0.9%	100%	0.9%
6+	77,419	2.6%	1.8%	0.8%	100%	0.8%
7+	67,722	2.7%	1.9%	0.8%	100%	0.8%
8+	58,290	2.7%	2.0%	0.7%	89%	0.7%
9+	49,175	2.8%	2.1%	0.6%	80%	0.6%
10+	40,349	2.9%	2.3%	0.6%	70%	0.6%
All	131,501	3.3%	1.2%	2.1%	100%	2.1%

Exhibit A-2c
Derived Lifetime-Pay Voluntary Lapse Experience through December 31, 2015
Series 11 Group Policy Forms

Duration	Exposure	Composite Termination Rates	Expected Mortality Rates	Derived Lapse Rates	Credibility Percent	Smoothed Lapse Rates
1	7,058	6.4%	0.1%	6.3%	95%	6.50%
2	6,497	6.4%	0.2%	6.2%	91%	6.00%
3	5,951	4.4%	0.2%	4.2%	71%	4.00%
4	5,489	4.0%	0.3%	3.7%	63%	3.50%
5	5,008	3.3%	0.3%	3.0%	56%	3.00%
6	4,811	2.7%	0.4%	2.3%	46%	2.50%
7	4,644	2.2%	0.4%	1.8%	40%	2.00%
8	4,498	2.3%	0.5%	1.8%	40%	1.50%
9	4,297	1.7%	0.6%	1.1%	32%	1.30%
10	4,093	2.0%	0.6%	1.4%	36%	1.30%
11	3,468	2.4%	0.7%	1.7%	32%	1.30%
12	2,846	1.8%	0.8%	1.0%	26%	1.30%
13	1,498	1.3%	0.8%	0.5%	12%	1.30%
14	346	3.2%	0.7%	2.5%	10%	1.30%
15	74	1.4%	0.9%	0.5%	5%	1.30%
16	31	3.2%	1.0%	2.2%	5%	1.30%
17	3	0.0%	1.5%	-1.5%	0%	1.30%
1-3	19,506	5.8%	0.2%	5.6%	100%	5.6%
4-6	15,308	3.4%	0.3%	3.0%	96%	3.0%
7-9	13,439	2.1%	0.5%	1.6%	65%	1.6%
5+	35,618	2.3%	0.5%	1.8%	100%	1.8%
6+	30,609	2.2%	0.6%	1.6%	98%	1.6%
7+	25,799	2.1%	0.6%	1.5%	87%	1.5%
8+	21,154	2.0%	0.6%	1.4%	77%	1.3%
9+	16,656	1.9%	0.7%	1.3%	66%	1.3%
10+	12,359	2.0%	0.7%	1.3%	57%	1.3%
All	60,612	3.6%	0.4%	3.2%	100%	3.2%

Exhibit A-3
Actual-to-Expected (A:E) Benefit Expiration Experience through December 31, 2015
Subset of MedAmerica Organic Business

Attained Age Band	Exposure	Actual Expiry Rate	Expected Expiry Rate	Expiry A:E	Credibility Percent	Credibility-Weighted A:E	Smoothed Adjustment Factors
<80	528,089	0.03%	0.04%	0.70	56%	0.83	0.85
80-84	50,683	0.52%	0.41%	1.27	74%	1.20	1.25
85-89	22,568	1.52%	1.04%	1.46	85%	1.39	1.45
90+	6,638	4.43%	2.47%	1.79	78%	1.62	1.65
All	607,979	0.17%	0.14%	1.28	100%	1.28	1.28

Exhibit A-4a
MedAmerica and Affinity Partners
Actual-to-Expected Morbidity Adjustment Factors
Series 11 and Prior Policy Forms

Duration	Prior to Series 11 Adjustment Factor	Series 11 Individual Adjustment Factor	Series 11 Group Adjustment Factor
1	1.05	0.84	0.51
2	1.02	0.85	0.55
3	1.00	0.86	0.59
4	0.97	0.88	0.64
5	0.95	0.89	0.69
6	0.93	0.90	0.74
7	0.90	0.91	0.79
8	0.88	0.92	0.85
9	0.86	0.91	0.87
10	0.84	0.90	0.89
11	0.83	0.89	0.91
12	0.81	0.87	0.93
13	0.79	0.86	0.95
14	0.80	0.89	0.94
15	0.81	0.92	0.92
16	0.83	0.95	0.91
17	0.84	0.98	0.90
18	0.85	1.01	0.89
19	0.84	1.00	0.89
20	0.84	0.99	0.88
21	0.83	0.99	0.88
22	0.83	0.98	0.88
23	0.82	0.97	0.87
24	0.83	0.97	0.88
25	0.84	0.97	0.89
26	0.85	0.98	0.90
27	0.86	0.98	0.91
28	0.86	0.98	0.92
29	0.86	0.98	0.92
30+	0.86	0.98	0.92

Attained Age	Prior to Series 11 Adjustment Factor	Series 11 Individual Adjustment Factor	Series 11 Group Adjustment Factor
<65	0.91	0.90	0.88
65-69	1.08	1.10	1.01
70-74	0.99	1.18	1.04
75-79	0.94	1.10	1.07
80-84	1.06	1.49	1.08
85-89	1.15	1.29	1.20
90+	1.09	1.24	1.22

Coverage Type	Adjustment Factor
Comprehensive	0.90
Nursing Home Only	1.09
Home Care Only	1.23

Exhibit A-4b
MedAmerica and Affinity Partners
Actual to Adjusted Expected Incurred Claims
Series 11 and Prior Policy Forms

Experience By Policy Duration						
All Durations						
Duration	Prior to Series 11		Series 11 Individual		Series 11 Group	
	Credibility	Actual to Adjusted Expected	Credibility	Actual to Adjusted Expected	Credibility	Actual to Adjusted Expected
1	0%	1.00	8%	0.62	9%	0.95
2	0%	1.00	18%	1.31	6%	0.09
3	5%	1.00	21%	0.46	18%	1.23
4	10%	3.50	31%	1.56	16%	1.02
5	11%	0.50	31%	0.80	13%	1.11
6	15%	0.93	38%	0.87	16%	1.14
7	23%	0.80	40%	1.04	14%	0.62
8	28%	1.58	46%	1.20	17%	0.63
9	34%	1.32	53%	0.97	16%	0.84
10	37%	0.74	50%	0.89	18%	1.37
11	40%	0.80	54%	0.95	18%	1.56
12	39%	0.92	49%	0.93	5%	0.44
13	41%	1.03	49%	1.24	9%	3.42
14	46%	1.20	37%	0.95	0%	0.32
15	39%	0.92	37%	0.97	0%	0.16
16	37%	0.87	28%	1.06	0%	0.98
17	34%	1.10	0%	1.10	0%	1.00
18	32%	0.99	0%	1.00	0%	1.00
19	27%	1.03	0%	0.08	0%	1.00
20	20%	1.01	0%	1.00	0%	1.00
21	16%	0.99	0%	1.00	0%	1.00
22	6%	0.31	0%	1.00	0%	1.00
23	0%	1.00	0%	1.00	0%	1.00
1-5	16%	1.28	53%	1.00	29%	0.89
6-10	64%	1.09	100%	0.99	36%	0.93
11-15	92%	0.98	100%	1.00	21%	1.28
16-20	69%	0.99	28%	1.05	0%	0.98
21-25	17%	0.85	0%	1.00	0%	1.00
Total	100%	1.01	100%	1.00	51%	0.99

Experience By Attained Age						
Durations 7 and Later						
Attained Age	Prior to Series 11		Series 11 Individual		Series 11 Group	
	Credibility	Actual to Adjusted Expected	Credibility	Actual to Adjusted Expected	Credibility	Actual to Adjusted Expected
<65	14%	1.32	19%	0.86	21%	1.26
65-69	22%	1.97	33%	1.15	16%	0.94
70-74	33%	0.85	50%	1.12	18%	0.91
75-79	51%	0.92	65%	0.93	16%	0.87
80-84	68%	1.01	83%	1.04	11%	0.70
85-89	72%	0.99	61%	0.95	10%	1.85
90+	56%	0.95	38%	0.99	-	0.00
<70	27%	1.75	38%	1.05	27%	1.12
<75	43%	1.19	63%	1.09	32%	1.05
<80	66%	1.04	91%	1.01	36%	1.02
<85	95%	1.03	100%	1.03	38%	0.98
65-79	65%	1.02	89%	1.03	29%	0.91
70-84	91%	0.96	100%	1.02	27%	0.85
75-89	100%	0.98	100%	0.99	22%	0.97
70+	100%	0.97	100%	1.01	28%	0.94
75+	100%	0.98	100%	0.99	22%	0.96
80+	100%	1.00	100%	1.01	15%	1.04
85+	91%	0.98	72%	0.96	10%	1.72