

Metropolitan Life Insurance Company
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Email: mark.newton@metlife.com



Mark D. Newton, FSA, MAAA

August 18, 2019

Maryland Insurance Administration
200 St. Paul Place, Suite 2700, Baltimore, MD 21202

Re: 1LTC-97-MD-1, 1LTC-97-MD-2, 2LTC-97-MD-1, 2LTC-97-MD-2
Issued by Metropolitan Life Insurance Company (MetLife)

Attached is the filing for the captioned forms. This letter provides an overview of the filing and notes on some of the content. After a careful review of earlier filings, we have endeavored to reflect in this filing additional content based on previous questions submitted by your Department. Hopefully, this will make your review easier and more effective.

Filing Overview

In addition to this overview, this filing consists of the Actuarial Memorandum, the Addendum Automatic Inflation Choices “Landing Spots” focusing on premium rates for various levels of inflation protection for use as Landing Spots consequent to rate action, and Attachments on specific aspects of the Maryland Administrative Code as well as supporting data based on earlier reviews. These documents are outlined and summarized here for your convenience.

Title	Description
Actuarial Memorandum Exhibit I-A	Lifetime Loss Ratio (“LLR”) <ul style="list-style-type: none">• <i>Nationwide</i> experience• Without/with proposed rate increase of 15.00%• Weighted average statutory rate 4.50% LLR without rate increase – 116.0% LLR with rate increase – 110.4%
Exhibit II-A	Demonstration of rate action meeting Rate Stability (58/85) limitations
Exhibit I-B	Lifetime Loss Ratio (“LLR”) <ul style="list-style-type: none">• <i>Maryland</i> experience• Without/with proposed rate increase of 15.00%• Weighted average statutory rate 4.50% LLR without rate increase – 117.5% LLR with rate increase – 111.4%
Exhibit II-B	Demonstration of rate action meeting Rate Stability (58/85) limitations

Review of Prior Correspondence	Attachment 1 – Assumptions Summary Attachment 2 – A/E Ratios (Policy Duration) Attachment 3 – A/E Ratios (Calendar Year) Attachment 4 – A/E Ratios (Lapse, Mortality, Incidence, Claim Termination)
Addendum – Actuarial Memorandum	Memorandum on Premium Rates for use as “Landing Spots” with Rate Increases

Rationale for the Rate Increase Request

Exhibit I demonstrates that the combination of historical and projected experience using the most recent Best Estimate assumptions is clearly far beyond the expected loss ratio using the original pricing assumptions. Attachments 2 and 3 support the development of the experience by analyzing the Actual-to-Expected Ratios by Calendar Year and Policy Duration.

Attachment 1 compares the development of the changes in assumptions from the time of original pricing to the latest Experience Study. Generally, worse than expected morbidity and lower decrements are the primary reasons for the rate action.

Assumption Setting and Review

All projection assumptions are based on the Experience Study performed each year. In general, the assumptions used in all projections are those that reproduce historical experience within a non-material degree of tolerance. Attachment 4 shows the Actual-to-Expected Ratios comparing the latest Best Estimate assumptions with the set of actual experience for Lapse, Mortality, Incidence, and Claim Termination.

Some actuarial judgment is used in areas where credibility or trending requires adjustment. In any case, the methodology, results, conclusions and use are prescribed by MetLife internal Standards and Actuarial Standards of Practice and are reviewed and approved by MetLife management, internal auditors, and external auditors.

Calculation of the Rate Request

MetLife’s evaluation of the Justifiable Rate Increase (“JRI”) uses the industry standard “If Knew” basis. This method calculates the premium needed at time zero to achieve the original loss ratio if all current experience had been known at inception. Of course, the Company cannot retroactively charge such premiums, so all historical losses stemming from past premium shortfalls are taken by the Company.

Additional Notes

COMAR 31.14.01.04A(5) states, “*An insurer may not charge a renewal premium rate for a long-term care policy which exceeds by more than 15 percent any premium charged for the policy during the preceding 12 months.*” The requested rate increase for this filing is 15.00%.

MetLife requests the rate action based on deviations from anticipated experience outlined in the Actuarial Memorandum and the supporting attachments. Lifetime Loss Ratios exceed all minimum requirements in Maryland as well as the application of rate stability standards even at the full requested rate action. In addition, though Maryland-only experience is not necessarily credible, the Maryland LLR’s still meet the standards above at the full rate action level.

Despite the rate action requested, the experience of the block does not fully return to pricing levels. In general, the rate action restricts consideration of recovering historical losses by focusing on lifetime experience. We will continue, of course, to analyze and adjust experience assumptions and reserve the right to update those in the future along with requesting any resulting changes in premium rates.

The actuarial justification for experience analysis and projections, including assumptions and methods, are reflective of the Code of Professional Conduct and applicable Actuarial Standards of Practice. I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries, and I meet the Academy's qualification standards for preparing health rate filings and to render the actuarial opinion contained herein.

Thank you for your consideration. I look forward to hearing from you.

Sincerely,

A handwritten signature in black ink that reads "Mark D. Newton". The signature is written in a cursive, flowing style.

Mark D. Newton, FSA, MAAA
Actuarial Director, Metropolitan Life Insurance Company

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New York, NY

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Policy Forms

The premium rate schedule increase for which we are seeking approval will apply to the following individual long-term care policy forms:

- 1LTC-97-MD-1
- 1LTC-97-MD-2
- 2LTC-97-MD-1
- 2LTC-97-MD-2

These forms were developed as part of a nationwide series and were issued in Maryland from April 2000 to July 2003, but are no longer being marketed in any state. Nationwide, the last policies under this series were issued in 2003.

Policy forms 1LTC-97-MD and 2LTC-97-MD (subsequently referred to as 1LTC-97 and 2LTC-97 respectively) are existing individual tax-qualified policy forms and were previously approved in 2000, along with any rider or endorsement forms that were contemporaneously or subsequently approved for use with these policy forms.

Policy form 1LTC-97 provides comprehensive coverage. Policy form 2LTC-97 provides coverage for long-term care services received in a nursing home, assisted living facility (ALF), or hospice facility.

1. Purpose of Filing

This actuarial memorandum has been prepared for the purpose of demonstrating that the anticipated loss ratio standard of this product meets the minimum requirements of your state and may not be suitable for other purposes.

2. Description of Benefits

1LTC-97 and 2LTC-97 are part of a nationwide series of individually underwritten policy forms which reimburses 100% of charges, up to a maximum facility benefit amount, for confinement in a licensed nursing home or assisted living facility. Benefits are payable under skilled, intermediate, or custodial levels of care, as well as inpatient hospice care.

1LTC-97 also includes a home/community-based care benefit which reimburses 100% of charges from formal caregivers, up to a maximum home/community-based care benefit amount, for services received at home or at an adult day care center for maintenance or personal care, including hospice care.

For both policy forms, the daily benefit amount, home care/adult day care percentage, and maximum benefit period are selected at issue. Additional benefits for initial care advisory service and

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transition expenses are also provided. In addition, 1LTC-97 provides benefits for respite care, caregiver training, chore/transportation services, and alternate services.

Benefit eligibility is based on the inability to perform at least two of six activities of daily living (ADLs) including bathing, continence, dressing, eating, toileting, and transferring, for a period of at least 90 days due to loss of functional capacity; or due to severe cognitive impairment.

Benefit payments commence after a specified number of days in a waiting period, selected at issue, which accumulate over the lifetime of the policy. The waiting period need not be satisfied before receiving coverage for hospice care, respite care, caregiver training, or initial care advisory services; however, receipt of these services does not count towards satisfying the waiting period. Waiver of premium is provided beginning on the first day of the policy month coincident with or following the day the insured becomes eligible for benefit payments (includes completion of the waiting period).

At issue, the insured chose one of three inflation options: Automatic Simple Inflation Protection, Automatic Compound Inflation Protection, or Optional Inflation Protection. The insured could also elect nonforfeiture coverage at issue. For married couples that each had a primary policy, a Survivorship/Joint Waiver of Premium Rider was also available that provides for premiums to be waived when premiums are being waived on the spouse's policy and for a policy to become paid up when the spouse's policy is terminated due to death or exhaustion of the total lifetime benefit.

3. Renewability

These policy forms are guaranteed renewable for life.

4. Applicability

This filing is applicable to in-force policies only, as these policy forms are no longer being sold in the market. The premium changes will apply to the base forms as well as all applicable riders.

5. Actuarial Assumptions

- a. Expected Claim Costs are the product of attained age frequency rates and continuance curves, adjusted by utilization factors and underwriting selection factors based on actual experience through June 30, 2017.
- b. Voluntary Termination Rates vary by duration as developed from actual experience through June 30, 2017 and are shown in the following table:

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Voluntary Termination Rates

Policy Duration	Lapse Rate
1	5.00%
2	4.50%
3	4.00%
4	3.50%
5	2.50%
6	2.00%
7	1.80%
8	1.50%
9	1.30%
10	1.10%
11+	0.90%

In the year of rate increase implementation, it is assumed that an additional 3.22% of policies lapse and there is 2.14% net reduction to future premiums and benefits due to benefit downgrades. There is no adverse selection assumed due to the additional lapse rates.

- c. Mortality 88% of Annuity 2000 Basic Table with selection consistent with experience.
- d. Expenses Expenses have not been explicitly projected. It is assumed that the originally filed expense assumptions remain appropriate.

The above assumptions are based on actual inforce experience of MetLife and are deemed reasonable for these particular policy forms. 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.

6. Marketing Method

These policy forms were marketed by agents and brokers of MetLife.

7. Underwriting Description

These policy forms were fully underwritten with the use of 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.

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8. Premiums

Premiums are unisex, level and payable for life. The premiums vary by issue age, benefit period, initial daily benefit, waiting period, home and community care percentage, inflation protection option, and the selection of any other options or riders.

9. Issue Age Range

The issue ages are from 20 to 85 except for the unlimited benefit period option which was only issued to age 81.

10. Area Factors

Area factors are not used for this product.

11. Premium Modalization Rules

The following modal factors are applied to the annual premium (AP):

Premium Mode	Modal Factors
Annual	1.00*AP
Semi-Annual	0.51*AP
Quarterly	0.265*AP
Monthly	0.09*AP

12. Reserves

Active life reserves have not been used in this rate increase analysis. Claim reserves as of December 31, 2017 have been discounted to the incurral date of each respective claim and included in historical incurred claims. Incurred but not reported reserve balances as of December 31, 2017 have been allocated to a calendar year of incurral and included in historical incurred claims.

13. Trend Assumptions

As this is not medical insurance, we have not included any explicit medical cost trends in the projections.

14. Past and Future Policy Experience

Nationwide and Maryland experience for policy form series 1LTC-97 and 2LTC-97 are shown in Exhibit I-A and I-B, respectively.

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Historical experience is shown by claim incurral year. Claim payments and reserves were discounted to the mid-point of the year of incurral at the weighted average maximum valuation interest rate for contract reserves which is 4.50%. Incurred but not reported reserve balances as of December 31, 2017 have been allocated to a calendar year of incurral and included in historical incurred claims.

Annual loss ratios are calculated, with and without interest, as incurred claims divided by earned premiums.

A lifetime loss ratio as of December 31, 2017 is calculated as the sum of accumulated past experience and discounted future experience where accumulation and discounting occur at the weighted average maximum valuation interest rate for contract reserves, which is 4.50%.

15. Projected Earned Premiums and Incurred Claims

Earned premiums for projection years 2018 through 2098 are developed by multiplying each prior period's earned premium (starting with December 31, 2017 actual earned premium) by a persistency factor. For a year in which the rate increase is effective, the earned premium prior to the increase is multiplied by 1 plus the rate increase percent and an effectiveness factor.

Each projection year claim amount is calculated by multiplying incidence, continuance and utilization factors by the policy and rider benefits on a seriatim basis.

Present and accumulated values in the lifetime projections in Exhibit I-A and I-B are determined at the average maximum valuation interest rate for contract reserves applicable to LTC business issued in the years in which the applicable business of this filing were issued. The maximum valuation interest rate averages 4.50%.

The assumptions used in the projections in Exhibit I-A and I-B were developed from the company's LTC insurance experience.

Projections in Exhibit II provide a demonstration that the sum of the accumulated value of incurred claims without the inclusion of active life reserves, and the present value of future 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 future projected initial earned premium times 58%; and
4. 85% of the present value of future projected premium in excess of the projected initial earned premium.

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16. History of Previous Inforce Rate Increases

Round	Authorized %	Authorization Date	Implementation Date
1	15.00%	8/21/2009	2/1/2010
2	15.00%	3/5/2014	8/1/2014
3	15.00%	5/4/2016	9/1/2016
4	8.50%	11/15/2018	5/1/2019

The 1st round premium rate increase applied to policyholders with an issue age under 70, except when reduced by new business caps that were based on policies with similar benefits that were available for sale from MetLife.

The experience and projections in Exhibit I-A have been restated to reflect a rate level similar to that authorized in Maryland on a nationwide basis.

17. Requested Rate Increase

The company is requesting an increase of 15.00% for the policy forms listed above. Corresponding rate tables reflecting the 15.00% increase are included with this filing.

The rate tables reflect the prior authorized increases, but do not reflect any issue age and/or new business cap associated with the 1st round rate increase. Also note that the actual rates implemented may vary slightly from those filed due to implementation rounding algorithms.

18. Analysis Performed

The initial premium schedule was based on pricing assumptions believed to be appropriate, given the information available, at the time the initial rate schedule was developed. The original pricing assumptions for claim costs, voluntary termination rates and mortality were as follows:

- a. Incidence and claim termination rates: The original pricing expected claim costs for nursing home care were derived from the 1985 National Nursing Home Survey (TSA, 88-90 Reports). The incidence rates and lengths of stay vary by age and sex. The effects of selection at issue were assumed to reduce nursing home admission rates for the first seven policy durations.

Home Care prevalence rates were derived from the 1982-1984 National Long-Term Care Surveys. These prevalence rates vary by age and sex. The effects of selection were assumed to reduce home care prevalence rates for the first nine policy durations.

The original pricing expected claim costs for nursing home, home and community care, and additional benefits were also adjusted to reflect the benefits available under these policy forms.

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- b. The original pricing expected voluntary termination rates varied by duration as shown in the following table:

Duration	Lapse Rate
1	10.0%
2	9.0%
3	8.0%
4	7.5%
5	7.0%
6	6.5%
7	6.0%
8	5.5%
9	5.0%
10+	4.5%

- c. The original pricing expected mortality rates were based on the 1983 Group Annuity Mortality Table, adjusted to remove loading. These mortality rates vary by age and sex. The effects of selection at issue were assumed to reduce mortality rates for the first six durations.

As part of the in-force management of its long-term care insurance business, MetLife monitors its performance by completing periodic analyses of lapse rates, mortality rates, claim incidence rates, claim continuance rates and claim utilization rates. The findings from these analyses were used to determine the current experience assumptions. A model of this business was developed for use in the cash flow testing that is part of the company's annual statutory reporting requirements. Using this model, a future projection of these policies under the new experience assumptions was performed and the projected lifetime loss ratio for these policies was determined. For these policies, the past experience and future projections based on current experience assumptions combine to a resulting loss ratio that far exceeds both original pricing expectations and state minimum requirements.

Similar analyses were done for the prior premium rate increases. Since then, morbidity levels have been worse than that assumed in the prior rate increase.

The experience analysis, management's view of when a change to the original rate schedule may be considered, and the seriatim inforce and claim data used in developing the projections in Exhibit I and II have been relied upon by the actuary in the development of this memorandum.

19. Loss Ratio Requirement Compliance Demonstration

Projected experience reflecting the implementation of the actuarially equivalent single increase is shown in Exhibit I-A and I-B. As shown in these exhibits, the expected lifetime loss ratio, both with and without the requested rate increase meet the requirements under rate stability regulations.

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20. Average Annual Premium

The average September 30, 2018 annualized premiums for all premium-paying policies issued in Maryland, before and after the current requested increase of 15.00% are:

Before increase:	\$2,430
After prior authorized 8.50% increase:	\$2,637
After current requested 15.00% increase:	\$3,033

21. Proposed Effective Date

This rate increase will become effective on each policy's modal premium due date (monthly, quarterly, semi-annually and annually) following at least a 60-day advance written notification to the policyholder.

22. Nationwide Distribution of Business as of September 30, 2018 (based on premium-paying policies inforce count)

By Issue Age

Issue Age	%
<45	4%
45-49	8%
50-54	20%
55-59	24%
60-64	22%
65-69	14%
70-74	6%
75+	2%
Total	100%

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By Benefit Period

Benefit Period	%
1 Year	0%
1.5 Year	0%
2 Year	5%
3 Year	16%
4 Year	13%
5 Year	20%
6 Year	0%
7 Year	0%
Lifetime	45%
Total	100%

By Inflation Option

Inflation Type	%
Compound 3%	0%
Compound 5%	38%
Simple 5%	32%
FPO	30%
None	0%
Total	100%

By Home Care Percentage

Home Care Percentage	%
None (FC Only)	6%
50%	0%
60%	11%
75%	0%
80%	12%
100%	72%
Total	100%

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By Gender

Gender	%
Female	63%
Male	37%
Total	100%

23. Number of Policyholders

As of September 30, 2018, the number of premium-paying policies inforce and premiums that will be affected by this increase are:

	Issued Before Rate		Issued On or After Rate	
	Stability Regulation	Effective Date	Stability Regulation	Effective Date
	Number of	2018	Number of	2018
	Insured	Annualized Premium	Insured	Annualized Premium
Maryland	295	\$710,006	103	\$256,960

24. Actuarial Certification

I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries, and I meet the Academy's qualification standards for preparing health rate filings and to render the actuarial opinion contained herein.

This memorandum has been prepared in conformity with all applicable Actuarial Standards of Practice, including ASOP No. 8.

The projections contained in this actuarial memorandum are based on best estimate assumptions that do not reflect any margins for moderately adverse experience. I certify that (1) if the requested premium rate schedule increase is implemented and (2) unless underlying assumptions which reflect moderately adverse conditions are realized, no further premium rate schedule increases are anticipated. Moderately adverse conditions are interpreted as those conditions where aggregate experience deviates unfavorably from the aggregate experience assumptions used in determining the lifetime projections, such that the value of the deviation is equal to 5% of gross premiums or more.

I further certify that:

- the analysis described in Section 18 of this memorandum was used in determining the need for a rate increase;
- the policy design, underwriting and claims adjudication practices have been taken into consideration in this rate increase request;

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- the actuarial assumptions are appropriate and the gross premiums bear reasonable relationship to the benefits; and
- the relationship between renewal premium rate schedules and new business premium rate schedules is not applicable because we are no longer marketing new business.



Mark D. Newton, FSA, MAAA
Actuarial Director, Metropolitan Life Insurance Company

Exhibit II-A
Demonstration that Lifetime Incurred Claims with Requested Increase are
Not Less than Lifetime Earned Premium with Prescribed Factors
Policy Forms: 1LTC97 and 2LTC97

1	Accumulated value of initial earned premium	941,893,843	x	58%	=	546,298,429
2a	Accumulated value of earned premium	995,119,089				
2b	Accumulated value of prior premium rate schedule increases (2a-1)	53,225,247		85%	=	45,241,460
3	Present value of future projected initial earned premium	197,954,564		58%	=	114,813,647
4a	Present value of future projected premium	333,101,824				
4b	Present value of future projected premium in excess of the projected initial earned premiums (4a-3)	135,147,259		85%	=	114,875,170
5	Lifetime Earned Premium Times Prescribed Factor: Sum of 1, 2b, 3, and 4b					821,228,706
6a	Accumulated value of incurred claims without the inclusion of active life reserves					422,288,687
6b	Present value of future projected incurred claims without the inclusion of active life reserves					1,044,383,443
7	Lifetime Incurred Claims with Rate Increase: Sum of 6a and 6b					1,466,672,130
8	Test: 7 is not less than 5					TRUE

Exhibit II-B
Demonstration that Lifetime Incurred Claims with Requested Increase are
Not Less than Lifetime Earned Premium with Prescribed Factors
Policy Forms: 1LTC97 and 2LTC97

1	Accumulated value of initial earned premium	23,875,552	x	58%	=	13,847,820
2a	Accumulated value of earned premium	25,296,716				
2b	Accumulated value of prior premium rate schedule increases (2a-1)	1,421,165		85%	=	1,207,990
3	Present value of future projected initial earned premium	5,272,787		58%	=	3,058,216
4a	Present value of future projected premium	8,881,213				
4b	Present value of future projected premium in excess of the projected initial earned premiums (4a-3)	3,608,426		85%	=	3,067,162
5	Lifetime Earned Premium Times Prescribed Factor: Sum of 1, 2b, 3, and 4b					21,181,189
6a	Accumulated value of incurred claims without the inclusion of active life reserves					9,148,506
6b	Present value of future projected incurred claims without the inclusion of active life reserves					28,923,891
7	Lifetime Incurred Claims with Rate Increase: Sum of 6a and 6b					38,072,397
8	Test: 7 is not less than 5					TRUE

**Attachment 1
Metropolitan Life Insurance Company
Policy Forms: 1LTC97 and 2LTC97
Assumptions Summary**

	Original Pricing Assumptions	Current Best Estimate Assumptions																																														
Interest Rate:	6.00%	Maximum valuation interest rate for contract reserves, which average to 4.5%																																														
Mortality:	1983 GAM Basic Mortality Table With Mortality Selection Factors of: <table border="1"> <thead> <tr> <th>Duration</th> <th>Mortality Selection</th> </tr> </thead> <tbody> <tr><td>1</td><td>50%</td></tr> <tr><td>2</td><td>60%</td></tr> <tr><td>3</td><td>70%</td></tr> <tr><td>4</td><td>80%</td></tr> <tr><td>5</td><td>90%</td></tr> <tr><td>6+</td><td>100%</td></tr> </tbody> </table>	Duration	Mortality Selection	1	50%	2	60%	3	70%	4	80%	5	90%	6+	100%	88% of Annuity 2000 Basic table With Mortality Selection Factors of: <table border="1"> <thead> <tr> <th>Duration</th> <th>Mortality Selection</th> </tr> </thead> <tbody> <tr><td>1</td><td>25%</td></tr> <tr><td>2</td><td>50%</td></tr> <tr><td>3</td><td>55%</td></tr> <tr><td>4</td><td>65%</td></tr> <tr><td>5</td><td>70%</td></tr> <tr><td>6</td><td>75%</td></tr> <tr><td>7</td><td>80%</td></tr> <tr><td>8</td><td>85%</td></tr> <tr><td>9</td><td>90%</td></tr> <tr><td>10</td><td>95%</td></tr> <tr><td>11+</td><td>100%</td></tr> </tbody> </table>	Duration	Mortality Selection	1	25%	2	50%	3	55%	4	65%	5	70%	6	75%	7	80%	8	85%	9	90%	10	95%	11+	100%								
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Duration	Lapse Rate																																															
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Duration	Lapse Rate																																															
1	5.00%																																															
2	4.50%																																															
3	4.00%																																															
4	3.50%																																															
5	2.50%																																															
6	2.00%																																															
7	1.80%																																															
8	1.50%																																															
9	1.30%																																															
10	1.10%																																															
11+	0.90%																																															
Morbidity:	Morbidity underwriting savings vary by duration. However, we do not have the actual rates.	Current IB block experience with morbidity U/W Selection Factors of:																																														
Incidence:	Incidence rates for nursing home care were based on a study published by the Society of Actuaries based on the 1985 NNHS with modifications.	<table border="1"> <thead> <tr> <th>Duration</th> <th>U/W Selection</th> </tr> </thead> <tbody> <tr><td>1</td><td>64%</td></tr> <tr><td>2</td><td>77%</td></tr> <tr><td>3</td><td>100%</td></tr> <tr><td>4+</td><td>100%</td></tr> </tbody> </table> <p>Sample Ultimate Smoothed Incidence Rates (before gross-up to zero-day elimination)³</p> <table border="1"> <thead> <tr> <th rowspan="2">Attained Age</th> <th colspan="2">Male</th> <th colspan="2">Female</th> </tr> <tr> <th>Facility Care</th> <th>Home Care</th> <th>Facility Care</th> <th>Home Care</th> </tr> </thead> <tbody> <tr><td>81</td><td>1.19%</td><td>1.06%</td><td>1.65%</td><td>1.11%</td></tr> <tr><td>82</td><td>1.40%</td><td>1.23%</td><td>1.99%</td><td>1.29%</td></tr> <tr><td>83</td><td>1.64%</td><td>1.41%</td><td>2.36%</td><td>1.48%</td></tr> <tr><td>84</td><td>1.90%</td><td>1.60%</td><td>2.78%</td><td>1.67%</td></tr> <tr><td>85</td><td>2.18%</td><td>1.81%</td><td>3.24%</td><td>1.87%</td></tr> </tbody> </table>	Duration	U/W Selection	1	64%	2	77%	3	100%	4+	100%	Attained Age	Male		Female		Facility Care	Home Care	Facility Care	Home Care	81	1.19%	1.06%	1.65%	1.11%	82	1.40%	1.23%	1.99%	1.29%	83	1.64%	1.41%	2.36%	1.48%	84	1.90%	1.60%	2.78%	1.67%	85	2.18%	1.81%	3.24%	1.87%		
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Continuance:	Continuance rates for nursing home care were based on a study published by the Society of Actuaries based on the 1985 NNHS with modifications.	<p><u>Change</u> In 2018, incidence curves were reshaped to better reflect the emerged experience over the years.</p> <p>In 2016, termination curves were constructed separately for deaths and recoveries, gender and care path. Coefficients to an exponential-shaped curve were based on experience adjusted to minimize differences between actual and expected terminations in total as well as at periodic duration points along the curves. Death and recovery termination rates were recombined into a single termination table for modelling and valuation uses. Minor adjustments made to Male Facility and Male Home Care.</p>																																														
Utilization:	Home care prevalence rates were based on 1982-1984 National Long Term Care Surveys with modifications. Note that the actual utilization assumption at original pricing is not available.	<table border="1"> <thead> <tr> <th>Home Care</th> <th>Facility Care</th> </tr> </thead> <tbody> <tr> <td>61%</td> <td>79%</td> </tr> </tbody> </table>	Home Care	Facility Care	61%	79%																																										
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Attachment 2
Metropolitan Life Insurance Company
Nationwide Experience Projections (Premium Normalized to Include Prior Authorized Increases)
Actual to Expected Ratios
Policy Forms: 1LTC97 and 2LTC97

Duration	Actual / Projected Experience			Expected Pricing Experience			G = C / F Actual to Expected Ratio
	Actual Experience through 12/31/2017 Projections based on Current Assumptions			Reproduced based on Original Pricing Assumptions since inception			
	A	B	C = B / A	D	E	F = E / D	
	Earned Premium	Incurred Claims	Loss Ratio	Earned Premium	Incurred Claims	Loss Ratio	
1	30,912,577	648,757	2.1%	30,912,577	2,165,676	7.0%	0.30
2	50,291,224	4,692,092	9.3%	50,291,224	4,890,274	9.7%	0.96
3	45,880,805	5,541,741	12.1%	45,401,698	5,963,897	13.1%	0.92
4	43,460,555	8,735,084	20.1%	41,225,656	7,426,668	18.0%	1.12
5	41,800,890	7,146,770	17.1%	37,567,676	8,831,485	23.5%	0.73
6	40,558,382	11,672,158	28.8%	34,290,978	10,324,681	30.1%	0.96
7	39,739,444	13,467,795	33.9%	31,387,213	11,075,316	35.3%	0.96
8	38,757,937	19,832,018	51.2%	28,787,809	11,850,885	41.2%	1.24
9	38,004,173	19,962,546	52.5%	26,445,719	13,102,596	49.5%	1.06
10	37,497,022	14,294,176	38.1%	24,301,517	14,044,540	57.8%	0.66
11	37,099,210	21,929,356	59.1%	22,340,915	14,547,017	65.1%	0.91
12	36,509,265	22,082,151	60.5%	20,485,208	15,078,002	73.6%	0.82
13	35,938,471	28,361,808	78.9%	18,737,965	15,589,087	83.2%	0.95
14	35,631,824	32,815,960	92.1%	17,095,845	16,392,420	95.9%	0.96
15	35,699,817	32,546,644	91.2%	15,556,004	16,859,315	108.4%	0.84
16	36,070,442	37,590,337	104.2%	14,116,400	17,392,718	123.2%	0.85
17	36,738,311	32,337,489	88.0%	12,774,256	17,740,809	138.9%	0.63
18	36,356,842	35,332,787	97.2%	11,526,858	18,023,326	156.4%	0.62
19	35,253,158	38,562,302	109.4%	10,369,987	18,175,320	175.3%	0.62
20	33,385,572	39,765,411	119.1%	9,299,898	18,284,576	196.6%	0.61
21	31,746,002	43,746,705	137.8%	8,313,927	19,475,380	234.3%	0.59
22	29,745,567	47,878,823	161.0%	7,408,317	20,190,181	272.5%	0.59
23	27,769,355	52,140,042	187.8%	6,579,423	20,903,097	317.7%	0.59
24	25,825,919	56,497,442	218.8%	5,822,307	21,354,435	366.8%	0.60
25	23,922,339	60,869,737	254.4%	5,132,735	21,962,698	427.9%	0.59
26	22,066,462	65,224,419	295.6%	4,507,755	22,574,402	500.8%	0.59
27	20,265,438	69,426,165	342.6%	3,943,531	22,892,822	580.5%	0.59
28	18,526,387	73,383,116	396.1%	3,436,359	23,161,634	674.0%	0.59
29	16,856,571	77,045,616	457.1%	2,981,535	23,209,076	778.4%	0.59
30	15,261,924	80,256,298	525.9%	2,575,105	23,223,874	901.9%	0.58
31	13,748,258	83,001,858	603.7%	2,214,266	22,707,883	1025.5%	0.59
32	12,320,116	85,221,773	691.7%	1,895,426	22,379,884	1180.7%	0.59
33	10,980,211	86,779,856	790.3%	1,615,204	21,879,109	1354.6%	0.58
34	9,730,780	87,576,258	900.0%	1,369,495	20,945,854	1529.5%	0.59
35	8,573,287	87,668,615	1022.6%	1,154,565	19,955,656	1728.4%	0.59
36	7,507,850	87,019,742	1159.1%	967,794	18,789,421	1941.5%	0.60
37	6,534,101	85,634,967	1310.6%	806,441	17,541,758	2175.2%	0.60
38	5,650,255	83,485,939	1477.6%	667,850	16,051,812	2403.5%	0.61
39	4,853,945	80,618,282	1660.9%	549,484	14,519,233	2642.3%	0.63
40	4,141,992	77,155,778	1862.8%	449,361	13,339,726	2968.6%	0.63
41	3,510,347	73,097,536	2082.3%	364,852	11,615,662	3183.7%	0.65
42	2,954,609	68,654,074	2323.6%	293,760	10,545,582	3589.9%	0.65
43	2,469,322	63,836,015	2585.2%	234,850	9,484,374	4038.5%	0.64
44	2,048,956	58,852,598	2872.3%	186,508	8,455,892	4533.8%	0.63
45	1,687,621	53,723,211	3183.4%	147,166	7,454,206	5065.2%	0.63
46	1,379,923	48,620,709	3523.4%	115,399	6,334,339	5489.1%	0.64
47	1,120,049	43,624,454	3894.9%	89,970	5,460,301	6069.0%	0.64
48	902,242	38,776,415	4297.8%	69,782	4,615,698	6614.5%	0.65
49	721,233	34,112,655	4729.8%	53,871	3,864,860	7174.2%	0.66
50	571,993	29,716,777	5195.3%	41,448	3,295,356	7950.6%	0.65
51	449,944	25,619,910	5694.0%	31,737	2,623,001	8264.9%	0.69
52	351,031	21,845,163	6223.1%	24,301	2,087,828	8591.7%	0.72
53	271,585	18,429,234	6785.8%	18,607	1,661,846	8931.4%	0.76
54	208,266	15,364,688	7377.4%	14,247	1,322,778	9284.5%	0.79
55	158,298	12,661,734	7998.7%	10,909	1,052,891	9651.6%	0.83
56	119,284	10,328,350	8658.6%	8,353	838,068	10033.2%	0.86
57	89,134	8,339,103	9355.7%	6,396	667,076	10429.8%	0.90
58	66,062	6,662,410	10085.1%	4,897	530,972	10842.2%	0.93
59	48,584	5,275,909	10859.4%	3,750	422,637	11270.9%	0.96
60	35,434	4,133,398	11665.2%	2,871	336,406	11716.5%	1.00
Lifetime	1,100,776,598	2,539,623,156	230.7%	567,029,956	747,486,321	131.8%	1.75
Lifetime*	605,872,140	702,100,935	115.9%	344,642,952	210,221,874	61.0%	1.90

Note:

- Figures in column A are normalized to reflect the prior rate action authorized by Maryland rather than the prior rate action approved by other states.

- Figures in column D do not reflect any rate action.

* Columns A and B are discounted back to the inception date at an interest rate of 4.5%, which is the weighted average maximum valuation interest rate for contract reserves. Columns D and E are discounted back to the inception date at the original pricing interest rate of 6%.

Attachment 4
Metropolitan Life Insurance Company
Actual to Expected Lapse/Mortality
Individual Business

Lapse			
Policy Duration	Actual	Expected *	A/E%
1	10,950	12,042	90.93%
2	13,842	10,123	136.73%
3	9,571	8,558	111.83%
4	6,947	7,167	96.92%
5	5,555	4,621	120.22%
6	3,723	3,359	110.82%
7	2,835	2,838	99.88%
8	2,094	2,165	96.73%
9	1,647	1,644	100.18%
10+	3,441	4,031	85.35%

Mortality			
Policy Duration	Actual	Expected *	A/E%
1	536	541	99.05%
2	924	1,129	81.85%
3	1,110	1,318	84.25%
4	1,316	1,663	79.11%
5	1,532	1,922	79.72%
6	1,703	2,213	76.97%
7	1,903	2,520	75.52%
8	2,125	2,801	75.86%
9	2,218	3,068	72.30%
10	2,416	3,259	74.13%
11	2,462	3,388	72.67%
12	2,476	3,260	75.95%
13	2,305	2,836	81.28%
14+	6,736	7,196	93.61%

* The expecteds are based on current best estimate assumptions.

Attachment 4
Metropolitan Life Insurance Company
Actual to Expected Incidence
Individual Business

Attained Age	Female						Male					
	Facility Care			Home Care			Facility Care			Home Care		
	Actual Claims ¹	Expected Claims ²	A/E%	Actual Claims ¹	Expected Claims ²	A/E%	Actual Claims ¹	Expected Claims ²	A/E%	Actual Claims ¹	Expected Claims ²	A/E%
under 50	0	11	0%	7	13	56%	5	6	90%	6	8	72%
50 to 54	5	20	25%	15	27	56%	2	10	20%	14	17	84%
55 to 59	21	53	40%	71	75	94%	17	26	66%	46	48	96%
60 to 64	73	101	73%	148	157	94%	36	52	70%	97	108	89%
65 to 69	152	140	109%	220	213	104%	101	87	116%	173	163	106%
70 to 74	308	263	117%	261	251	104%	173	171	101%	234	218	107%
75 to 79	433	418	104%	320	328	97%	244	231	106%	225	239	94%
80 to 84	476	500	95%	299	315	95%	192	202	95%	173	175	99%
85 to 89	354	363	97%	183	181	101%	106	103	103%	81	79	102%
over 89	125	124	101%	65	48	135%	36	25	145%	21	17	121%
Total	1,947	1,991	98%	1,589	1,609	99%	912	912	100%	1,070	1,072	100%

¹ Based on actual experience through 6/30/2017 including adjustments for incurred but not reported claims.

² The expected claims are based on current best estimate assumptions.

Attachment 4
Metropolitan Life Insurance Company
Actual to Expected Claim Termination
All Business (exclude AARP-Pru)

Claim Duration (Months)	Actual Deaths	Expected Deaths¹	Actual Recoveries	Expected Recoveries¹	Deaths A/E%	Recoveries A/E%	Total A/E%
1	881	542	64	85	163%	76%	151%
2	766	1,329	163	260	58%	63%	58%
3	822	1,155	251	247	71%	102%	77%
4	928	1,272	324	281	73%	115%	81%
5	926	1,047	288	230	88%	125%	95%
6	806	916	212	199	88%	106%	91%
7	703	760	193	164	93%	118%	97%
8	631	654	143	136	96%	105%	98%
9	613	575	123	114	107%	108%	107%
10	541	519	120	97	104%	124%	107%
11	491	478	91	84	103%	108%	104%
12	536	449	87	74	119%	118%	119%
13	442	423	78	66	104%	118%	106%
14+	13,138	11,830	1,272	1,427	111%	89%	109%
Total	22,224	21,949	3,409	3,461	101%	98%	101%

¹ The expected deaths and recoveries are based on current best estimate assumptions.