

NORTHWESTERN LONG TERM CARE INSURANCE COMPANY

ACTUARIAL MEMORANDUM

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| <u>Product Name</u> QuietCare TT | <u>Policy Form Number</u> TT.LTC.(1010) | <u>Issue Date Range*</u> October 2010 – March 2013 (*see exhibit 2 for state's range) |
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CONTENTS

| | | |
|-----|---|---|
| 1. | Scope & Purpose | 3 |
| 2. | Requested Rate Increase | 3 |
| 3. | Reason for Rate Increase Request | 4 |
| 4. | Rate Increase History | 4 |
| 5. | Benefit Descriptions | 5 |
| 6. | Renewability | 6 |
| 7. | Applicability | 6 |
| 8. | Marketing Method | 6 |
| 9. | Issue Age Ranges | 6 |
| 10. | Actuarial Assumptions – Updated | 6 |
| | A. Morbidity - Updated | 6 |
| | B. Expenses | 7 |
| | C. Mortality - Updated | 7 |
| | D. Lapse – Updated | 8 |
| | E. Automatic Additional Purchase Benefit (AAPB) Election Rate | 8 |
| | F. Interest | 9 |

| | | |
|-----|----------------------------------|----|
| | G. Distribution | 9 |
| 11. | Actuarial Assumptions - Original | 10 |
| | A. Morbidity - Original | 10 |
| | B. Mortality - Original | 11 |
| | C. Lapse - Original | 11 |
| 12. | Underwriting | 12 |
| 13. | Premium Classes | 12 |
| 14. | Reserve Basis | 12 |
| | A. Base Plans | 12 |
| | B. Paid-Up Nonforfeiture Benefit | 13 |
| | C. Additional Actuarial Reserves | 13 |

1. Scope & Purpose

This memorandum consists of materials which support the development of new premium rates for the policy series form listed on page 1. The purpose of this memorandum is to demonstrate that the requirements of this State in regards to an inforce rate increase request have been met. This rate filing is not intended to be used for any other purpose.

2. Requested Rate Increase

This rate increase request is a follow-up to a previous rate increase request where the state of Maryland approved a rate increase that was less than what was requested. The SERFF number associate with our previous filing is NWST-130590237 and the state number is 90-2579 LTC (0417) and was originally filed on 10/28/16 and a rate increase was approved on 03/01/17. The previously requested rate increase was the first rate increase ever requested on these policy forms.

We are now requesting the remaining portion of our previous rate increase request. In fact, across most of the rest of the country we have already received approval for the rate increase that was requested previously. Our goal with this follow-up filing is to align the rate increases for policyowners in the state of Maryland with rest of the country to ensure greater equity nationwide.

These guaranteed renewable products include lifetime pay and limited pay (for TT.LTC.(1010) only) premiums with benefit period offerings of three years, six years and lifetime.

The table below summarizes the previously approved rate increase, the currently requested rate increase and the cumulative increase (assuming that the requested rate increase is approved). The currently requested increase will be effective no sooner than one year after the effective date of the previously approved increase.

Lifetime Pay Policies

| Benefit Period | Previously Approved Increase | Currently Requested Increase | Cumulative Increase |
|----------------|------------------------------|------------------------------|---------------------|
| 3 Year | 10% | 0%* | 10% |
| 6 Year | 15% | 8.7% | 25% |
| Lifetime | 15% | 13% | 30% |

* No further rate increases are being requested for lifetime pay 3 year benefit period policies since the 10% rate increase that had been requested previously was approved.

Limited Pay Policies

| Benefit Period | Previously Approved Increase | Currently Requested Increase | Cumulative Increase |
|----------------|------------------------------|------------------------------|---------------------|
| 3 Year | 15% | 8.7% | 25% |
| 6 Year | 15% | 10.4% | 27% |
| Lifetime | 15% | 12.2% | 29% |

The overall average rate increase currently being requested is 10.1% and the overall cumulative average rate increase would be 26% with the rate increase varying by benefit period as shown in the tables above.

The rate increases adhere to the following restrictions:

- a. We ensure that the proposed rate increase does not result in premium rates that exceed the rates for new business. To accomplish this, we restricted the premium increase for lifetime pay policies with the 3 year benefit period to grade from 10% for issue ages in the early 70's to 0% for issue ages 75+. This is demonstrated in the attached premium rate comparison.
- b. We ensure that the resulting overall increase in rates satisfies the rate stability rule ensuring no less than an 85% loss ratio on the rate increase portion, while applying 58% to the current rate schedule. This is demonstrated in Exhibit 1.
- c. The lifetime loss ratio after the proposed rate increase is greater than or equal to the lifetime loss ratio targeted in the original filing from this form.

New proposed rate tables for this policy form are included with this filing. The contingent non-forfeiture paid up benefit equal to the sum of premiums paid is being offered to all policyowners impacted by the rate increase whether or not their increase is above the substantial increase triggers.

The number of policyowners and amount of inforce premium, as of October 31, 2017, for your state and nationwide, are displayed in Exhibit 2. The exhibit also shows the average annual premium before and after the proposed rate increase.

3. Reason for Rate Increase Request

A rate increase is necessary at this time due to significantly higher anticipated future and lifetime loss ratios. The higher loss ratios are mainly the result of longer claim continuance with a greater effect on longer benefit periods, combined with lower lapse and mortality rates.

Northwestern Long Term Care Insurance Company (NLTC) has been evaluating this block and updating assumptions based on our experience as well as the LTCi industry experience. The projected lifetime loss ratio based on the assumptions outlined in this memo is worse than original pricing. The combined effect of changing the underlying claim costs and updating the mortality and persistency assumptions resulted in the need for a rate increase. The current premium levels are inadequate and, therefore, NLTC is requesting a rate increase in order to maintain the viability and financial stability of the policy form.

Even though we could justify a higher rate increase, at this time we have decided to request a cumulative 26% taking into consideration the impact on our policyowners. If experience does not improve, we may need to request future rate increases on this policy form.

4. Rate Increase History

This rate increase request is a follow-up to a previous rate increase request where the state of Maryland approved a rate increase that was less than what was requested. The SERFF number associate with our previous filing is NWST-130590237 and the state number is 90-2579 LTC (0417) and was originally filed on 10/28/16 and a rate increase was approved on 03/01/17. The previously requested rate increase was the first rate increase ever requested on these policy forms.

Other than the rate increase mentioned above there have been no other rate increases for these policy forms.

5. Benefit Descriptions

This policy provides comprehensive long term care coverage, and reimburses eligible expenses of the insured up to the monthly limits of the policy. The product is priced to have level premiums. All premiums are guaranteed renewable. If the policy becomes paid-up, it becomes non-cancellable. The product is available at issue ages 18-79. Premiums are on a sex neutral basis.

The insured chooses a monthly limit, benefit period, elimination period, and premium-paying period. The plan reimburses eligible expenses up to the monthly limits once the elimination period is satisfied. The plan continues to reimburse expenses until eligible expenses are no longer incurred or benefits are exhausted.

Care can be provided by licensed health care practitioners in licensed nursing homes, alternate living facilities, the home, and adult day care agencies. Respite care and Hospice care are also covered.

The premium paying period options include Lifetime Pay, 10 Pay, and To Age 65. The Lifetime Pay premiums are paid for life, the 10 Pay premiums are paid for ten years after issue, and the To Age 65 premiums are paid until the policy anniversary nearest the insured's 65th birthday. The Lifetime Pay and 10 Pay premium paying period options are offered at issue ages 18-79; while the To Age 65 premium paying period option is only offered at issue ages 18-54.

Two indexing options are available. The first option, called the Automatic Benefit Increase option, is a level premium product with the monthly limit and the Benefit Account Value remaining indexing at 3%, 4%, or 5% per year. The insured chooses the indexing percentage at issue.

The second option, called the Automatic Additional Purchase Benefit, provides a level benefit while the insured does not require LTC benefits. The monthly limit and the Benefit Account Value remaining begin indexing at 5% per year if and when the insured is on claim. Also under this option, the insured has the option of purchasing an additional amount of coverage, equal to 5% of the prior year's monthly limit, each year while not on claim. This additional coverage also increases the Benefit Account Value. The premiums for the additional coverage are level and are based on the insured's current attained age. The insured can continue to purchase the additional coverage under this option until the insured has refused two of the optional increases in coverage.

All plans include the waiver of premium benefit.

An optional non-forfeiture benefit and survivorship benefit are also available. The non-forfeiture benefit, called Paid-Up Nonforfeiture Benefit, provides paid-up coverage when premium payments stop on or after the third policy anniversary via a smaller aggregate benefit amount. Although we are filing for a premium rate increase, the premiums under the non-forfeiture benefit are not changing at this time.

The survivorship benefit, called the Survivorship Benefit, is a benefit that can be purchased when two spouses or companions each purchase an NLTC long-term care policy. Beginning at the death of the first insured, this benefit will change the status of the second insured's policy to fully paid up.

Three underwriting classes exist: standard, class 1, and class 2. The policy is participating.

6. Renewability

All policy forms listed above are guaranteed renewable.

7. Applicability

This filing is applicable to in force policies only, as this policy form is no longer being sold in your state or nationwide. The premium changes will apply to the base form as well as to all applicable additional benefits, other than the non-forfeiture benefit as described above. The premium change will also apply to future purchase option elections under the Automatic Additional Purchase Benefit. The premium changes will not apply to policies which have already reached paid-up status.

The company remains in the market, and currently sells similar long-term care insurance.

8. Marketing Method

All policy forms listed above were marketed by Northwestern Mutual's (parent company of NLTC) career captive field force.

9. Issue Age Ranges

Issue ages are from 18 to 79.

10. Actuarial Assumptions – Updated

This section includes the current assumptions used to justify the premium rate increase. These assumptions do not include any margin for adverse experience.

A. Morbidity - Updated

Claim costs from Milliman's 2014 edition of the Long Term Care Guidelines were used for morbidity estimates. The Guidelines have been developed in conjunction with professionals in several Milliman offices and reflect actual experience of various carriers, numerous studies of non-insurance data and judgment. The guidelines are a continually evolving rating structure that are modified as more experience becomes available.

The 2014 Milliman Guidelines were tailored to reflect NLTC's underwriting standards and claims administration practices. Milliman develops morbidity selection factors for three levels of underwriting: looser underwriting, average underwriting, and stricter underwriting. Milliman determined after analyzing NLTC's underwriting standards and practices that we fall in the stricter underwriting category. Milliman also came in to look at our claims administration practices to adjust the 2014 Milliman Guidelines in order to be more in line with how we administer long-term care claims.

An internal review of Milliman's underwriting categories was also performed to ensure that we agreed with their assessment based on their underwriting criteria. This review led to the conclusion that the categorization of our underwriting standards as "strict" was appropriate. In addition, our Actuarial and Underwriting Departments continually review and monitor the underwriting criteria of other LTC carriers compared to our own underwriting standards. Based on those reviews we believe that our underwriting criteria is stricter than the average LTC carrier in the industry. The claims administration of our LTC block was brought in-house from a 3rd party administrator some years ago. We made enhancements to the consistency of claims adjudication, and considered these enhancements in determining the appropriateness of the morbidity assumptions used.

Final adjustments were made to morbidity recognizing anticipated morbidity differences due to a review of NLTC's specific product design such as the comprehensive coverage provided, a lifetime elimination period, pooled benefits structure, and a monthly benefit limit (vs. daily benefit limit).

We also reviewed how the 2014 Milliman Guidelines compare to our own limited amount of long-term care claims data and our cash claim payments are in line with the expected basis. Since the 2014 Guidelines provided by Milliman were based on long-term care policies with specific benefits equal to what this policy form offers, our overall morbidity experience to-date, although limited and not credible, does not call into question the validity of the 2014 Milliman Guidelines for this block of business.

No morbidity improvement was assumed in pricing.

B. Expenses

Expenses have not been explicitly projected. It is assumed that the originally filed expense assumptions remain appropriate. Normal renewal commission rates will be applied on any increase in premium.

C. Mortality - Updated

Our mortality assumptions were developed using internal company experience and include underwriting selection factors. Mortality improvement is also assumed through attained age 105.

In comparing the pricing mortality table used to the 1994 Group Annuitant Mortality (94 GAM) table prescribed for valuation, the pricing ultimate rates are more conservative for the majority of issue ages. However, the biggest difference between the two tables is not the ultimate rates but that the pricing mortality recognizes lower mortality rates on recently underwritten business (mortality selection) and improved mortality over time (mortality improvement). Thus, the pricing mortality is more conservative than the prescribed table for valuation (94 GAM) which does not have selection or improvement.

D. Lapse – Updated

| Updated Lapse Rates | | |
|----------------------------|---------------------|--------------------|
| Policy Year | Lifetime Pay | Limited Pay |
| 1 | 3.500% | 2.500% |
| 2 | 4.300% | 1.000% |
| 3 | 2.900% | 0.500% |
| 4 | 2.200% | 0.000% |
| 5 | 1.700% | 0.000% |
| 6 | 1.500% | 0.000% |
| 7 | 1.200% | 0.000% |
| 8 | 1.050% | 0.000% |
| 9 | 0.900% | 0.000% |
| 10 | 0.800% | 0.000% |
| 11 | 0.700% | 0.000% |
| 12 | 0.600% | 0.000% |
| 13 | 0.575% | 0.000% |
| 14 | 0.550% | 0.000% |
| 15 | 0.525% | 0.000% |
| 16+ | 0.500% | 0.000% |

Lapse Adjustment by Issue Age - These multipliers remain the same as those used for the original pricing.

Lapse Adjustment for Paid-Up Nonforfeiture Benefit - These multipliers remain the same as those used for the original pricing.

E. Automatic Additional Purchase Benefit (AAPB) Election Rate

As described in section 5, with the AAPB benefit the insured has the option of purchasing an additional amount of coverage at the insured’s current attained age while not on claim. Current AAPB election rate assumptions are outlined below and vary depending on the number of past AAPB refusals.

| No Prior Refusals | | One Prior Refusals | |
|--------------------------|----------------------|--|----------------------|
| Duration | Election Rate | Duration Since 1st Refusal | Election Rate |
| 1 | 90% | 1 | 55% |
| 2-10 | 95% | 2 | 78% |
| 11 | 94% | 3 | 82% |
| 12 | 93% | 4 | 85% |
| 13 | 92% | 5 | 88% |
| 14 | 91% | 6+ | 90% |
| 15+ | 90% | | |

Note that no AAPB assumption is necessary to determine the appropriate premium rates to charge as the attained age rates are set equal to the issue age rates for the same age. Therefore, there was no explicit AAPB assumption made at initial pricing.

However, the rate of AAPB elections can affect the loss ratio projections in Exhibit 1 and are therefore documented here.

F. Interest

Discounting and accumulating of earned premiums and incurred claims for the purpose of calculating historical, future anticipated and lifetime loss ratios was performed using a discount rate of 4%. This rate represents the average maximum valuation interest rate for all of the policy forms we are currently requesting a rate increase on (i.e., the RR, RS, and TT series of policy forms).

G. Distribution

Distribution of Business by Issue Age:

| <u>Issue Age</u> | <u>Expected Distribution</u> | <u>Actual Distribution</u> |
|-------------------|------------------------------|----------------------------|
| 25 | 1% | 3% |
| 30 | 1% | 3% |
| 35 | 2% | 4% |
| 40 | 9% | 6% |
| 52 | 33% | 37% |
| 57 | 25% | 23% |
| 62 | 17% | 16% |
| 67 | 7% | 6% |
| 72 | 2% | 1% |
| 77 | 1% | 0% |
| Average Issue Age | 53.5 | 52.4 |

Distribution of Business by Plan:

| <u>Benefit Period (Years)</u> | <u>Expected Distribution</u> | <u>Actual Distribution</u> |
|-----------------------------------|------------------------------|----------------------------|
| 3 | 9% | 11% |
| 6 | 25% | 36% |
| Lifetime | 65% | 53% |
| <u>Elimination Period (Weeks)</u> | <u>Expected Distribution</u> | <u>Actual Distribution</u> |
| 6 | 3% | 2% |
| 12 | 88% | 88% |
| 25 | 6% | 7% |
| 52 | 3% | 3% |

Distribution of Business by Sex:

| <u>Sex</u> | <u>Expected Distribution</u> | <u>Actual Distribution</u> |
|------------|------------------------------|----------------------------|
| Male | 47% | 48% |
| Female | 53% | 52% |

Distribution of Business by Indexing Option:

| <u>Indexing Option</u> | <u>Expected Distribution</u> | <u>Actual Distribution</u> |
|---------------------------------------|------------------------------|----------------------------|
| None | 15% | 19% |
| Automatic Benefit Increase | 15% | 21% |
| Automatic Additional Purchase Benefit | 70% | 60% |

Distribution of Business by Spousal/Companion Discount:

| <u>Discount</u> | <u>Expected Distribution</u> | <u>Actual Distribution</u> |
|-----------------|------------------------------|----------------------------|
| Single | 16% | 11% |
| One Insured | 15% | 13% |
| Two Insured | 69% | 76% |

Distribution of Business by Premium Paying Period:

| <u>Premium Paying Period</u> | <u>Expected Distribution</u> | <u>Actual Distribution</u> |
|------------------------------|------------------------------|----------------------------|
| Lifetime | 98% | 89% |
| To Age 65 | 1% | 2% |
| 10-Pay | 1% | 9% |

11. Actuarial Assumptions - Original

The initial premium rate schedule was based on the originally filed pricing assumptions which included margin for moderately adverse experience and were believed to be appropriate, given company and industry experience available, when the initial rate schedule was developed. The original pricing assumptions for morbidity, voluntary termination rates, and mortality were as follows:

A. Morbidity - Original

Claim costs from Milliman's 2009 edition of the Long Term Care Guidelines were used for morbidity estimates. The Guidelines were developed in conjunction with professionals in several Milliman offices during the mid-2000s and reflect actual experience of various carriers at that time, numerous studies of non-insurance data and actuarial judgment. The guidelines were established with a continually evolving rating structure that allow for modifications over time as more experience becomes available.

Selection factors were applied by policy year to reflect the morbidity anticipated due to underwriting. These factors were based on experience reviewed by Milliman for benefit plans similar to NLTC with modifications to reflect the level of underwriting. For the Automatic Additional Purchase Benefit option, composite selection factors

were calculated from the factors above recognizing that initial underwriting will wear off over time. Final adjustments were made to morbidity recognizing anticipated morbidity differences due to NLTC specific underwriting and product design.

B. Mortality - Original

1994 Group Annuitant Mortality (GAM)

C. Lapse - Original

| Lapse Rates | | |
|--------------------|--------------|-------------|
| Policy Year | Lifetime Pay | Limited Pay |
| 1 | 3.000% | 2.500% |
| 2 | 2.750% | 1.000% |
| 3 | 2.500% | 0.500% |
| 4 | 2.250% | 0.000% |
| 5 | 2.000% | 0.000% |
| 6 | 1.750% | 0.000% |
| 7 | 1.500% | 0.000% |
| 8 | 1.250% | 0.000% |
| 9 | 1.250% | 0.000% |
| 10 | 1.250% | 0.000% |
| 11 | 1.125% | 0.000% |
| 12 | 1.000% | 0.000% |
| 13 | 0.875% | 0.000% |
| 14 | 0.750% | 0.000% |
| 15 | 0.625% | 0.000% |
| 16+ | 0.500% | 0.000% |

Lapse Adjustment by Issue Age: The following table of multipliers was used to adjust lapse rates for policies issued at older ages.

| Lapse Adjustment by Issue Age | | | |
|--------------------------------------|---------------------|---------------------|---------------------|
| Policy Year | Issue Ages 18-69 | Issue Ages 70-74 | Issue Ages 75-79 |
| 1 | 100% | 100% | 90% |
| 2 | 100% | 100% | 75% |
| 3 | 100% | 100% | 60% |
| 4 | 100% | 100% | 45% |
| 5 | 100% | 100% | 30% |
| 6 | 100% | 100% | 15% |
| 7 | 100% | 100% | 0% |
| 8 | 100% | 100% | 0% |
| 9 | 100% | 100% | 0% |
| 10 | 100% | 80% | 0% |
| 11 | 100% | 60% | 0% |
| 12 | 100% | 40% | 0% |
| 13 | 100% | 20% | 0% |
| 14+ | 100% | 0% | 0% |

Lapse Adjustment for Paid-Up Nonforfeiture Benefit - The following table of multipliers was used to adjust lapse rates for those policies with the Paid-Up Nonforfeiture Benefit (NFB) option:

| Policy Year | Lapse Adjustment Multiplier for NFB |
|-------------|-------------------------------------|
| 1 | 50% |
| 2 | 0% |
| 3 | 200% |
| 4 | 170% |
| 5+ | 110% |

12. Underwriting

Medical underwriting was required for individual policies issued under this policy form and varied by issue age. LTC underwriting takes into account conditions or combinations of medical conditions that are likely to result in an impending need for services. There were three underwriting classes for this policy form: standard, class 1, and class 2.

13. Premium Classes

There are three premium classes (Standard, Class 1 and Class 2) for these policy forms. Class 1 premiums are 35% higher than Standard and the Class 2 premiums are 70% higher than Standard.

Premiums are unisex and payable for life, except if the policy becomes paid up as described in Section 5 above. The premiums may vary according to one or more of the following policy and policyholder attributes: issue age, benefit level, benefit period, elimination period, inflation option, premium mode, premium payment duration, marital status, and additional benefits.

A spousal discount of 30% is applied if both individuals in a marriage or companion relationship have purchased a policy at the same time. For individuals whose spouse or companion chooses not to apply for NLTC coverage or is a declined for coverage, the purchase individual will receive a 15% spousal discount.

A multi-life discount of 5% is also applied where policies were marketed to three or more lives of an employer/employee group or ten or more lives of an association group. This discount is available to members and retirees of these groups, as well as their parents, spouses, and spouses' parents. The multi-life discount is not a reflection of lower expected morbidity for this group, but rather the fact that commissions are roughly 5% less for these multi-life sales and we wanted to reflect that savings in our policyowners' premiums.

14. Reserve Basis

A. Base Plans

Statutory Active Life Reserves are based on the claim costs developed for this plan which reflect a margin for moderately adverse experience. A one-year preliminary term method with 1994 Group Annuitant Mortality (GAM) and 4.0% interest is used. The calculation uses 80% of the expected voluntary lapse rates for durations 1-4, and the expected voluntary lapse rates in durations 5+, with total terminations capped according to Model regulations.

Disabled life reserves use the current claim cost basis used for pricing new business. This is currently the 2014 Milliman guidelines. A 4.0% interest rate is used for claims incurred prior to 2013, and a 3.5% interest rate for claims incurred 2013 and later. Reserves are grossed up for claims administration expenses.

B. Paid-Up Nonforfeiture Benefit

Paid-Up Nonforfeiture Benefit Reserves use the same assumptions as the base plan except where noted below. Active life reserves are equal to:

a. The greater of:

1. The LTC active life reserve, and
2. The lapse benefit

plus

b. The Paid-Up Nonforfeiture Benefit Reserve

where:

The LTC active life reserve is consistent with the base policy.

The lapse benefit is equal to the present value of future claims for an insured if the policy is lapsed in the following year.

The Paid-Up Nonforfeiture Benefit Reserve is equal to the present value of future claims for all insureds currently in paid-up status.

C. Additional Actuarial Reserves

The company focuses on asset adequacy testing for its LTC block overall, rather than on premium deficiency reserves for any particular series. Additional actuarial reserves due to asset adequacy testing have been held since 2012, and as of December 31, 2016, \$265 million was held for the LTC product line.

Actuarial Certification

I, Gregory Gurlik, am an Actuary and an officer of the Northwestern Long Term Care Insurance Company and am a member in good standing of the American Academy of Actuaries. I wrote the Actuarial Memorandum for the rate increase filing for form TT.LTC.(1010). The assumptions used as stated in this memorandum are reasonable and realistic for this product. To the best of my knowledge and judgment, this filing complies with the laws and regulations of your state and the benefits are reasonable in relation to the premiums charged.



Actuary

April 18, 2018

Date