

John Hancock Life Insurance Company (U.S.A.)
Actuarial Memorandum for Inforce Rate Increase – Custom Care II 2007
June 25, 2019

<u>Product Name</u>	<u>Form Number</u>	<u>Issue Date Range</u>
Custom Care II (2007)	LTC-03 MD (2007)	Nov 2007 – Jan 2010

These policy form rates were originally priced with a margin for moderately adverse experience in accordance with the NAIC model rate stability regulations.

1. Scope & Purpose

This memorandum consists of materials which support the development of new premium rates for the above captioned Policy series forms. The purpose of this memorandum is to demonstrate that the requirements of this State in regards to an in force rate increase request have been met. This rate filing is not intended to be used for any other purpose.

The premium increases requested in this filing include the remainder of the rate increases originally requested in our prior inforce rate filings (SERFF Tracking No. MULF-131257459), beyond the capped approval (7.5% annually for two years) made by your state on April 13, 2018 for policies included in this filing, calculated based on nationwide actual experience through year-end 2017 and then projected future experience.

2. Benefit Description

A brief policy description for each of the policy forms:

LTC-03 MD (2007)

Individually underwritten long-term care policies that provide comprehensive long-term care coverage for care received in a nursing home or assisted care living facility, home health care, hospice care, respite care, or attendance at an Adult Day Care Center providing Adult Day Care.

Provides reimbursement of covered long-term care expenses incurred after an elected elimination period is met, up to the maximum daily/monthly amount. The benefit eligibility is determined based on the insured's cognitive impairment or their requiring physical assistance to perform two out of six activities of daily living (ADLs) of bathing, dressing, eating, toileting, transferring and maintaining continence.

Premiums are waived after the insured has met the elimination period and is receiving benefits and will continue to be waived until the insured stops receiving such benefits.

3. Renewability

All policy forms are guaranteed renewable.

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.

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5. Actuarial Assumptions

[REDACTED]

6. Trend Assumptions

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

7. Marketing Method

This product was typically marketed through our traditional agency system and brokers involving a personal contact with each applicant.

8. Underwriting

These policy forms were underwritten using a medical and risk questionnaire. We also utilized Attending Physician Statement and personal interviews depending on the age of the applicant and medical conditions.

9. Premium Classes

The base policy premium rates vary by Issue age, Benefit Period and Inflation Option, as in the initial rate filing.

All premium factors related to the insured elected benefit design options, underwriting class or any eligible discount remain unchanged from the initial rate filing.

10. Premium Modalization Rules

Frequency	Multiple of Annual Premium
Semiannual	.52
Quarterly	.27
Monthly	.09

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11. Issue Age Range

The issue age range is 18-84 for all policy forms.

12. Area Factors

Area factors are not applicable to any of the policy forms or riders.

13. Average Annual Premium

The table below summarizes the average annual premium per premium-paying policy before and after the requested increase.

Form	Nationwide	Maryland	
	before the rate increase*	before the rate increase	after the rate increase
LTC-03 MD (2007)	2,750	3,660	4,244

*Nationwide premiums reflect rate increases implemented as of 12/31/2017.

14. Number of Policyholders

The table below summarizes, as of 12/31/2017, the number of premium-paying policies inforce and their 2017 annualized premium that will be affected by this rate increase in your state.

Form	Number of Policies	2017 Annualized Premium
LTC-03 MD (2007)	1,136	4,162,790

15. Reserves

Active Life Reserves have not been used in this rate increase demonstration. Minimum Statutory Claim reserves as of 12/31/2017 have been discounted to the date of incurral of each respective claim and included in the historical incurred claims. Incurred But Not Reported claim reserves as of 12/31/2017 have also been allocated to the calendar year of incurral and included in historic incurred claims.

16. Analysis Performed

Original Pricing Assumptions

[REDACTED]

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Recent Experience

As part of the inforce management of the business, the Company monitored the performance of the business by completing periodic analysis for morbidity, voluntary lapse rates, and mortality. The findings from these analyses were used in projecting the inforce business to determine the effect of experience on the projected lifetime loss ratio. The most current studies show significant unfavorable trends since the study that prompted our 2010 rate increase filings. In general claims, particularly at higher ages, continue to last longer than expected, lapses are lower than expected, and a higher percentage of claim terminations are due to recoveries (as opposed to death) than expected.

The following tables show in aggregate how our new assumptions (Expected) compare to actual experience:

Morbidity

Experience period: Inception through 9/30/2014. Duration 10+ are used for incidence, duration 5+ for claim termination, and all durations for utilization. The following charts show key experience compared to revised assumptions.

Incidence

Duration	A/E
1-3	101%
4-6	101%
7-9	99%
10+	97%
Total	98%

Claim Terminations

Benefit Period	A/E
<10 years	99%
10+ years	97%
Total	99%

Utilization

Inflation	A/E
None / GPO	98%
Simple	98%
Compound	98%
Total	98%

Voluntary Lapses

Experience period: 12/31/2009 - 12/31/2014

Duration	Lapse A/E by Amount	
	Without Inflation	With Inflation
1	100%	100%
2	103%	100%
3-5	100%	101%
6-10	99%	100%
11-15	100%	101%
16+	96%	97%
Total per inflation	100%	100%
TOTAL	100%	

Note that the lapse study removed all policies which had undergone prior rate increases except for the 2008 re-rate policies which are now allowed to re-enter the study after their first year since re-rate, provided they have not subsequently received another rate increase.

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Mortality

Experience period: 12/31/2009 - 12/31/2014

Duration	A/E by Amount
1-5	96%
6-10	96%
11+	101%
Total	99%

17. Requested Rate Increase

The Company is requesting an average rate increase of 16.0% which varies by issue age, benefit period, and inflation option, and ranges from 12.7% to 16.5%.

These rate increases were determined as the amounts needed to meet the target loss ratio from our prior filing using 2017 nationwide data. The rate stability rule is demonstrated at the bottom of **Exhibit 1**.

We ensured that the proposed premium rates (excluding the cost of delay from prior rate filings) did not result in premium rates that exceed the most recent traditional LTC rates that have been filed with the Interstate Compact for new business under the ICC12-LTC-12 policy form, adjusted for benefit differences and changes in underwriting guidelines and risk classification (this is demonstrated in **Appendix A** using LTC-03 as an example). As this product (ICC12-LTC-12) is no longer open for new business, the most recently filed new business LTC rates for this product were adjusted to account for the average impact of the assumption updates due to our 2016 Experience Studies. An adjustment of 9.5% was applied to all rates to reflect these updates.

Appendix B1 contains the new proposed rate tables for all policy forms included with this filing.

Please note that the actual rates implemented may vary slightly from those in Appendix B1 due to implementation rounding algorithms.

Exhibit 1 contains nationwide past premium and claims experience and future premium and claim projections and illustrates that the anticipated lifetime loss ratio with the requested rate increases and the previously-stated margin for moderately adverse experience is 86.7%, well in excess of the minimum loss ratio of 60% as well as greater than the original pricing loss ratio of 85.7%. The lifetime loss ratio as of 12/31/2017 is calculated as the sum of accumulated past and discounted future claims divided by the sum of accumulated past and discounted future earned premium where accumulation and discounting occur at the maximum statutory valuation discount rate.

In addition, **Exhibit 1** contains the original expected loss ratio projections, adjusted for the actual mix of business issued, with the lifetime loss ratio also calculated as stated above.

Furthermore, **Exhibit 1** demonstrates that the calculated loss ratio respects the applicable pre or post stability form requirements:

Post-stability form requirements:

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:

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1. Accumulated value of the initial earned premium times the original assumed lifetime loss ratio (which was higher than 58%),
2. 85% of the accumulated value of prior premium rate schedule increases,
3. Present value of future projected initial earned premium times the original assumed lifetime loss ratio, and
4. 85% of the present value of future projected premium in excess of the projected initial earned premium.

Pre-stability form requirements:

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 the original assumed lifetime loss ratio (which was higher than 60%),
2. 80% of the accumulated value of prior premium rate schedule increases,
3. Present value of future projected initial earned premium times the original assumed lifetime loss ratio, and
4. 80% of the present value of future projected premium in excess of the projected initial earned premium.

18. New inflation options that will allow policyholders to offset the rate increase

Although this is a closed block of business, we are filing new future inflation options that will allow policyholders that have Compound and Simple Inflation coverage the option to offset the rate increase.

Under these new options, the policyholders get to keep their current accumulated Daily benefit and their current remaining Lifetime Maximum Benefit, but the future indexation rate will be reduced as follows:

Current inflation	Proposed Landing Spot
5%	4.2%

All indexation rates were determined to be actuarially equivalent to the requested rate increases in aggregate and therefore these options are only available if the full rate increase requested is accepted.

The premium rate schedules for these options are included in this filing as **Appendix C1**.

19. New Shared Cost option that will allow the policyholder to offset the rate increase

We are filing a new Shared Cost option that will allow all policyholders the option to offset the rate increase. The Shared Cost option would:

- Reduce the policyholder's current policy benefit amounts by their Shared Cost percentage. The daily/monthly benefit and the policy limit will be reduced by the Shared Cost percentage
- Apply a percentage factor to any future claim payments equal to the Shared Cost percentage. John Hancock will pay our portion (1 minus the Shared Cost percent) of any covered services, up to the new benefit amount and the policyholder will be responsible for the remainder.

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The Shared Cost Percentages are calculated using seriatim, nationwide data for each benefit period, inflation type and issue age combination. For policyholder Shared Cost percentages and for details on premium calculations for policyholders who elected the Shared Cost option, please see **Appendix D**. The Shared Cost percentages in Appendix D will apply to all policyholders who have not bought additional attained age coverage. For those who have, the Shared Cost percentage will be the lesser of those shown in Appendix D and 80% of the policyholder's currently available benefit reduction that would offset their rate increase.

All Shared Cost percentages were determined to be actuarially equivalent to the requested rate increases by combination of issue age, benefit period and inflation type, and therefore these options are only available if the full rate increase requested is accepted.

The premium rate schedules for these options are included in this filing as **Appendix C1**.

20. Additional option for those who stop paying premiums

In addition to the options to offset the rate increase, we will also be offering a Paid-Up Policy option for those who choose to stop paying premiums. This option will be a paid-up policy with a policy limit equal to the lesser of the current policy limit and 150% of premiums paid less any benefits received. The Paid-Up Policy will only be offered if we receive a full approval.

21. History of Previous Rate Revisions

A 14.4% rate increase on these policy forms was accepted by your state on September 13, 2012.

A 0.9% rate increase on these policy forms was accepted by your state on September 11, 2013.

A multi-year staggered rate increase of 7.5% annually for two years on these policy forms was accepted by your state on April 13, 2018

22. Data Credibility

Regarding the credibility of data for younger blocks of business such as Custom Care II 2007, the Company would like to draw attention to the American Academy of Actuaries Issue Brief "*Understanding Premium Rate Increases on Private LTCI Policyholders 060216.pdf*", which has been included with this filing. The brief provides guidance on determining the need for premium rate increases on pages 4 and 5. This guidance includes a discussion on determining assumptions used for projections, particularly in situations where experience credibility may be low. Because of the long duration nature of Long Term Care policies, claims are often not seen in early durations which leads to lower credibility in actual experience for younger groups of policies. In situations where this is the case, the Actuarial Standards of Practice require that industry data or company data for older, similar business be used to set assumptions. Specifically, the brief states the following:

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“Section 3.2.1 of Actuarial Standard of Practice No. 18, Long-Term Care Insurance, requires actuaries to use alternative data sources such as public data or experience from the insurance company’s older, similar policy forms for identifying reasonable assumptions. Waiting until there is adequate claim information on each policy form could result in much larger, less affordable rate increases.”

Since Custom Care II 2007 is a younger block of business, our proposed rate increases on this form are based on our experience from this form as well as similar forms where we have over 20 years of experience. Overall, our unfavorable morbidity experience is at later durations and older attained ages, where we have significant data on our older plans and less on younger ones. With our combined data we are able to make credible decisions regarding future assumptions, in accordance with ASOP 18. Focusing solely on past experience for this product discredits our future projections and prevents us from acting on this information in a timely manner. Delaying rate increases until we have amassed similar experience on this particular policy form would take a considerable amount of time and would result in much higher rate increases for our customers which would be more difficult to manage and would require larger reductions in benefits in order to mitigate them. For example, if we were to delay rate increases on the Custom Care II 2007 plan for 10 years, with experience continuing as currently expected, we would require an average rate increase of 51.2% compared to the current proposed rate increase of 16.0%.

23. Ensuring No Cross-Subsidization Between States

We have ensured no state's rate increase approvals will subsidize other states' rate increases. Rate increases will vary by state, but only to reflect the timing and amount of prior rate increases approved by that state. This is accomplished by first backing-out all prior approved rate increases from our nationwide premium data. We then re-introduce actual prior rate increases with the amount and timing based on your state's prior approvals (as detailed in Section 21). The current proposed rate increases are then determined based on the amounts needed in order to achieve our target lifetime loss ratios certified to in our prior filing.

Although some states may have capped our previous inforce rate increase filings, in each case this was done with the understanding that the full amount of the proposed rate increases were justified and that John Hancock would be re-filing for the remainder at a later date. In instances where the remainder remains unapproved, it has been included in the current filings.

24. Past Losses Test

Preventing companies from recouping past losses was the subject of a discussion by the NAIC in late 2013. The accepted methodology which was incorporated into the 2014 Long Term Care Model Regulation defines past losses as actual past claims less expected past claims when determining loss ratio compliance. Expected past claims are defined as the following:

“Expected claims shall be calculated based on the original filing assumptions assumed until new assumptions are filed as part of a rate increase. New assumptions shall be used for all periods beyond each requested effective date of a rate increase [regardless of whether or not the rate increase is approved]. Expected claims are calculated for each calendar year based on the in-force at the beginning of the calendar year. Expected claims shall include margins for moderately adverse experience; either amounts included in the claims that were used to determine the lifetime loss ratio consistent with the original filing or as modified in any rate increase filing.”

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We apply this methodology in **Exhibit 1A**. The ‘Adjusted Expected Incurred Claims’ are initially calculated by applying the original pricing durational loss ratio to the actual earned premium in a given calendar year. Later, in years in which and after which we filed for inforce rate increases, expected incurred claims are based on the new assumptions that were filed.

The accumulated value of the Adjusted Expected Incurred Claims is compared to the accumulated value of Actual Incurred Claims. The lesser of the Adjusted Expected Incurred Claims or Actual Incurred Claims is used for past claims when ensuring 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 the original loss ratio on the original rate schedule (as the original loss ratio was higher than 58%). This is demonstrated at the bottom of **Exhibit 1A**.

25. Proposed Effective Date

New rates will not be effective until after the completion of prior rate increases for all policyholders with product forms listed in this memo. These rates will be effective on the next policy anniversary date after completion, following at least a 90 day policyholder notification period.

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26. 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 rendering this opinion and am familiar with the requirements for filing long-term care insurance premiums and filing for increases in long-term care insurance premiums. This memorandum has been prepared in conformity with all applicable Actuarial Standards of Practice, including ASOP No. 8.

The preceding Actuarial Memorandum contains:

- a) the assumptions on which this certification is based;
- b) the adjustments to prior assumptions with an explanation of the reasons previous assumptions were not realized;
- c) a lifetime projection of the prior premium rate schedules and incurred claims plus future expected premiums and claims which demonstrates that the revised premium rate schedule meets the loss ratios standards and necessary details of this state; and
- d) disclosure of the manner, if any, in which reserves have been recognized.

If the requested premium rate schedule increase is implemented and the underlying assumptions which reflect moderately adverse conditions are realized, no further premium rate schedule increases are anticipated.

I have reviewed and taken into consideration the policy design and coverage provided, and our current underwriting and claims adjudication processes.

In forming my opinion, I have used actuarial assumptions and actuarial methods 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 state.

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



Ilya Kagan, FSA, MAAA
Actuary
John Hancock Life Insurance Company

**Exhibit 1: Nationwide Loss Ratio Exhibit
Custom Care II (LTC-03) - 2007 Rates**

Calendar Year	Original Assumptions			Historical & Projected Experience			With Proposed Rate Increase		
	Incurred Claims	Earned Premium	Incurred Loss Ratio	Incurred Claims	Earned Premium	Incurred Loss Ratio	Incurred Claims	Earned Premium	Incurred Loss Ratio
1999	-	-	-	-	87	0%	-	87	0%
2000	-	-	-	-	3,188	0%	-	3,188	0%
2001	-	-	-	-	3,188	0%	-	3,188	0%
2002	-	-	-	-	4,678	0%	-	4,678	0%
2003	-	-	-	-	6,520	0%	-	6,520	0%
2004	-	-	-	-	9,205	0%	-	9,205	0%
2005	-	-	-	-	9,954	0%	-	9,954	0%
2006	-	-	-	-	25,245	0%	-	25,245	0%
2007	7,182	269,016	3%	-	335,869	0%	-	335,869	0%
2008	660,144	22,790,933	3%	185,514	22,542,785	1%	185,514	22,542,785	1%
2009	1,775,508	41,795,991	4%	2,123,934	40,729,378	5%	2,123,934	40,729,378	5%
2010	3,164,363	47,224,167	7%	1,392,738	45,843,844	3%	1,392,738	45,843,844	3%
2011	4,586,777	46,923,797	10%	1,701,944	45,391,258	4%	1,701,944	45,391,258	4%
2012	6,031,873	46,029,949	13%	4,964,877	43,360,126	11%	4,964,877	43,360,126	11%
2013	7,018,207	45,231,624	16%	6,236,129	43,443,975	14%	6,236,129	43,443,975	14%
2014	7,987,822	44,413,496	18%	7,287,705	46,033,629	16%	7,287,705	46,033,629	16%
2015	9,226,278	43,539,726	21%	9,489,065	45,413,148	21%	9,489,065	45,413,148	21%
2016	10,663,383	42,610,468	25%	7,470,167	44,576,334	17%	7,470,167	44,576,334	17%
2017	12,291,844	41,623,856	30%	12,950,916	43,866,062	30%	12,950,916	43,866,062	30%
2018	13,698,033	40,579,992	34%	12,112,737	45,087,057	27%	12,112,737	45,087,057	27%
2019	15,329,845	39,479,650	39%	14,447,524	47,258,947	31%	14,449,148	47,494,909	30%
2020	17,446,495	38,326,730	46%	16,944,506	46,998,556	36%	17,010,418	52,400,744	32%
2021	19,903,622	37,126,247	54%	20,018,147	45,732,341	44%	20,028,020	52,746,583	38%
2022	22,594,644	35,879,672	63%	23,595,402	44,430,623	53%	23,478,673	50,954,678	46%
2023	25,340,443	34,585,917	73%	27,586,003	43,094,510	64%	27,450,676	49,429,577	56%
2024	28,476,461	33,239,843	86%	31,832,361	41,716,375	76%	31,672,930	47,856,028	66%
2025	32,103,544	31,842,244	101%	36,316,802	40,283,008	90%	36,128,535	46,218,660	78%
2026	35,800,361	30,393,012	118%	41,518,963	38,793,276	107%	41,292,445	44,516,020	93%
2027	39,373,776	28,897,996	136%	46,877,691	37,243,884	126%	46,612,089	42,744,340	109%
2028	43,030,791	27,366,547	157%	52,451,623	35,630,617	147%	52,143,587	40,898,750	127%
2029	46,822,612	25,797,847	181%	58,147,721	33,938,419	171%	57,793,973	38,961,847	148%
2030	50,616,027	24,185,681	209%	63,701,794	32,166,414	198%	63,301,408	36,932,585	171%
2031	53,870,678	22,534,067	239%	68,035,156	30,320,443	224%	67,599,787	34,817,615	194%
2032	56,452,440	20,850,705	271%	72,094,485	28,393,691	254%	71,625,407	32,609,151	220%
2033	58,348,872	19,157,420	305%	76,545,193	26,410,685	290%	76,034,253	30,335,327	251%
2034	59,887,461	17,489,168	342%	80,691,843	24,389,785	331%	80,137,483	28,017,219	286%
2035	61,135,043	15,870,524	385%	84,097,015	22,360,272	376%	83,502,438	25,688,498	325%
2036	61,553,781	14,313,966	430%	83,742,018	20,348,989	412%	83,146,287	23,380,052	356%
2037	61,126,864	12,830,350	476%	82,286,251	18,362,978	448%	81,698,095	21,100,049	387%
2038	60,193,879	11,429,627	527%	81,728,486	16,437,628	497%	81,133,100	18,889,200	430%
2039	58,839,066	10,120,124	581%	81,082,103	14,606,416	555%	80,476,315	16,786,035	479%
2040	57,058,653	8,906,527	641%	79,853,258	12,892,842	619%	79,240,312	14,817,647	535%
2041	54,496,462	7,790,142	700%	75,160,894	11,310,750	665%	74,579,135	13,000,025	574%
2042	51,349,910	6,772,534	758%	69,639,350	9,856,206	707%	69,097,495	11,328,725	610%
2043	48,035,581	5,854,523	820%	65,415,165	8,533,699	767%	64,897,744	9,808,961	662%
2044	44,676,659	5,034,531	887%	61,748,607	7,340,364	841%	61,249,366	8,437,499	726%
2045	41,352,972	4,307,944	960%	58,163,196	6,274,551	927%	57,681,805	7,212,492	800%
2046	37,822,608	3,668,274	1031%	52,865,558	5,333,711	991%	52,423,209	6,131,058	855%
2047	34,200,092	3,109,779	1100%	47,555,466	4,507,117	1055%	47,153,788	5,180,896	910%
2048	30,814,352	2,626,814	1173%	43,021,165	3,786,748	1136%	42,652,906	4,352,808	980%
2049	27,766,815	2,212,486	1255%	38,737,282	3,161,481	1225%	38,401,476	3,634,028	1057%
2050	25,041,372	1,859,152	1347%	34,583,498	2,623,412	1318%	34,280,269	3,015,480	1137%
2051	22,401,880	1,559,267	1437%	30,896,186	2,164,174	1428%	30,621,680	2,487,557	1231%
Values as of 12/31/2017 (discounted at maximum statutory valuation rates)									
Past :	71,243,071	511,438,812	13.9%	59,673,906	508,826,627	11.7%	59,673,906	508,826,627	11.7%
Future :	741,827,546	436,917,855	169.8%	929,018,552	556,073,911	167.1%	923,121,161	624,289,965	147.9%
Lifetime :	813,070,617	948,356,666	85.7%	988,692,458	1,064,900,538	92.8%	982,795,067	1,133,116,592	86.7%

Total Incurred Claims exceed Total Initial Premiums x max(58%, Original Pricing Loss Ratio) + Increased Premiums x max(85%, Original Pricing Loss Ratio)

Accum. Value of Past Incurred Claims =	59,673,906	Accum Value of Past Initial Prm x 85.7% =	412,782,882
Present Value of Future Incurred Claims =	923,121,161	Present Value of Future Initial Prm x 85.7% =	358,394,215
Total =	982,795,067	Accum Value of Prior Increases x 85.7% =	23,458,033
		Present Value of Future Increases x 85.7% =	176,838,831
		Total =	971,473,961

Total Incurred Claims exceed Total Initial Premiums x max(60%, Original Pricing Loss Ratio) + Increased Premiums x max(80%, Original Pricing Loss Ratio)

Accum. Value of Past Incurred Claims =	59,673,906	Accum Value of Past Initial Prm x 85.7% =	412,782,882
Present Value of Future Incurred Claims =	923,121,161	Present Value of Future Initial Prm x 85.7% =	358,394,215
Total =	982,795,067	Accum Value of Prior Increases x 85.7% =	23,458,033
		Present Value of Future Increases x 85.7% =	176,838,831
		Total =	971,473,961

**Exhibit 1A: Demonstration of not Recouping Past Losses
Custom Care II (LTC-03) - 2007 Rates**

Calendar Year	Loss Ratios to Apply to Actual Premium			Adjusted Expected Incurred Claims	Historical & Projected Experience					
	Incurred Claims	Earned Premium	Incurred Loss Ratio		Before Proposed Increase			With Proposed Rate Increase		
					Incurred Claims	Earned Premium	Incurred Loss Ratio	Incurred Claims	Earned Premium	Incurred Loss Ratio
1988	0	0	0%	-	0	0	-	0	0	-
1989	0	0	0%	-	0	0	-	0	0	-
1990	0	0	0%	-	0	0	-	0	0	-
1991	0	0	0%	-	0	0	-	0	0	-
1992	0	0	0%	-	0	0	-	0	0	-
1993	0	0	0%	-	0	0	-	0	0	-
1994	0	0	0%	-	0	0	-	0	0	-
1995	0	0	0%	-	0	0	-	0	0	-
Original Pricing 1996	0	0	0%	-	0	0	-	0	0	-
1997	0	0	0%	-	0	0	-	0	0	-
1998	0	0	0%	-	0	0	-	0	0	-
1999	0	0	0%	-	0	87	0%	0	87	0%
2000	0	0	0%	-	0	3,188	0%	0	3,188	0%
2001	0	0	0%	-	0	3,188	0%	0	3,188	0%
2002	0	0	0%	-	0	4,678	0%	0	4,678	0%
2003	0	0	0%	-	0	6,520	0%	0	6,520	0%
2004	0	0	0%	-	0	9,205	0%	0	9,205	0%
2005	0	0	0%	-	0	9,954	0%	0	9,954	0%
2006	0	0	0%	-	0	25,245	0%	0	25,245	0%
2007	7,182	269,016	3%	8,967	0	335,869	0%	0	335,869	0%
2008	660,144	22,790,933	3%	652,956	185,514	22,542,785	1%	185,514	22,542,785	1%
2009	1,775,508	41,795,991	4%	1,730,198	2,123,934	40,729,378	5%	2,123,934	40,729,378	5%
2010	1,875,171	44,055,773	4%	1,875,171	1,392,738	45,843,844	3%	1,392,738	45,843,844	3%
2010 RI 2011	2,581,746	49,430,990	5%	2,581,746	1,701,944	45,391,258	4%	1,701,944	45,391,258	4%
2012	3,348,532	48,570,571	7%	3,348,532	4,964,877	43,360,126	11%	4,964,877	43,360,126	11%
2013	4,393,117	47,773,894	9%	4,393,117	6,236,129	43,443,975	14%	6,236,129	43,443,975	14%
2014	5,692,537	46,959,568	12%	5,692,537	7,287,705	46,033,629	16%	7,287,705	46,033,629	16%
2015	7,120,007	46,108,882	15%	7,120,007	9,489,065	45,413,148	21%	9,489,065	45,413,148	21%
2016 RI 2016	8,230,288	44,281,913	19%	8,230,288	7,470,167	44,576,334	17%	7,470,167	44,576,334	17%
2017	10,220,906	43,465,740	24%	10,220,906	12,950,916	43,866,062	30%	12,950,916	43,866,062	30%
2018					12,112,737	45,087,057	27%	12,112,737	45,087,057	27%
2019					14,447,524	47,258,947	31%	14,449,148	47,494,909	30%
2020					16,944,506	46,998,556	36%	17,010,418	52,400,744	32%
Projected Future Experience 2021					20,018,147	45,732,341	44%	20,028,020	52,746,583	38%
2022					23,595,402	44,430,623	53%	23,478,673	50,954,678	46%
2023					27,586,003	43,094,510	64%	27,450,676	49,429,577	56%
2024					31,832,361	41,716,375	76%	31,672,930	47,856,028	66%
2025					36,316,802	40,283,008	90%	36,128,535	46,218,660	78%
2026					41,518,963	38,793,276	107%	41,292,445	44,516,020	93%
2027					46,877,691	37,243,884	126%	46,612,089	42,744,340	109%
2028					52,451,623	35,630,617	147%	52,143,587	40,898,750	127%
2029					58,147,721	33,938,419	171%	57,793,973	38,961,847	148%
2030					63,701,794	32,166,414	198%	63,301,408	36,932,585	171%
2031					68,035,156	30,320,443	224%	67,599,787	34,817,615	194%
2032					72,094,485	28,393,691	254%	71,625,407	32,609,151	220%
2033					76,545,193	26,410,685	290%	76,034,253	30,335,327	251%
2034					80,691,843	24,389,785	331%	80,137,483	28,017,219	286%
2035					84,097,015	22,360,272	376%	83,502,438	25,688,498	325%
2036					83,742,018	20,348,989	412%	83,146,287	23,380,052	356%
2037					82,286,251	18,362,978	448%	81,698,095	21,100,049	387%
2038					81,728,486	16,437,628	497%	81,133,100	18,889,200	430%
2039					81,082,103	14,606,416	555%	80,476,315	16,786,035	479%
2040					79,853,258	12,892,842	619%	79,240,312	14,817,647	535%
Values as of 12/31/2017 (discounted at maximum statutory valuation rates)										
Past				51,863,415	59,673,906	508,826,627	11.7%	59,673,906	508,826,627	11.7%
Future					929,018,552	556,073,911	167.1%	923,121,161	624,289,965	147.9%
Lifetime					988,692,458	1,064,900,538	92.8%	982,795,067	1,133,116,592	86.7%

Total Incurred Claims exceed Total Initial Premiums x max(58%, Original Pricing Loss Ratio) + Increased Premiums x max(85%, Original Pricing Loss Ratio)

Accum Value of Minimum(Past Incurred Claims, Adjusted Originally Expected Incurred Claims)	51,863,415	Accum Value of Past Initial Prm x 85.7% =	412,782,882
Present Value of Future Incurred Claims =	923,121,161	Present Value of Future Initial Prm x 85.7% =	358,394,215
Total =	974,984,576	Accum Value of Prior Increases x 85.0% =	23,458,033
	>=	Present Value of Future Increases x 85.0% =	176,838,831
		Total =	971,473,961

Total Incurred Claims exceed Total Initial Premiums x max(60%, Original Pricing Loss Ratio) + Increased Premiums x max(80%, Original Pricing Loss Ratio)

Accum Value of Minimum(Past Incurred Claims, Adjusted Originally Expected Incurred Claims)	51,863,415	Accum Value of Past Initial Prm x 85.7% =	412,782,882
Present Value of Future Incurred Claims =	923,121,161	Present Value of Future Initial Prm x 85.7% =	358,394,215
Total =	974,984,576	Accum Value of Prior Increases x 80.0% =	23,458,033
	>=	Present Value of Future Increases x 80.0% =	176,838,831
		Total =	971,473,961

Appendix D
Custom Care II (LTC-03) - 2007 Rates
Shared Cost Percentages

Note on premium calculation for a policyholder who elects the Shared Cost option:

To calculate the premium after election of the Shared Cost option, the premium rate schedules in Appendix C1 should be used. Since the Shared Cost option reduces the daily benefit, an additional factor is required to calculate the premium appropriately, as shown below:

$$\text{Premium after electing Shared Cost option} = \frac{(\text{Premium Rate Schedule per } \$10 \text{ daily benefit: Appendix C1}) * (\text{New Daily Benefit}/10)}{(1 - \text{Shared Cost Percentage})}$$

A similar formula can be used for GPO policies with multiple layers of coverage:

$$\text{Premium after electing Shared Cost option} = \frac{[(\text{Premium Rate Schedule, Base Issue Age per } \$10 \text{ Daily Benefit: Appendix C1}) * (\text{New Base Daily Benefit}/10) + (\text{Premium Rate Schedule, GPO Layer 1 Issue Age per } \$10 \text{ Daily Benefit: Appendix C1}) * (\text{New Layer 1 Daily Benefit}/10)]}{(1 - \text{Shared Cost Percentage})}$$