

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

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 25.6%, which varies by issue age, benefit period, and inflation option, and ranges from 19.6% to 26.1%.

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 88.5%, well in excess of the minimum loss ratio of 60% as well as greater than the original pricing loss ratio of 85.5%. 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:

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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:

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%	3.9%

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

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- 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.

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 14.9% rate increase on these policy forms was accepted by your state on September 13, 2012.

A 6.7% 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, 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 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 plan for 10 years, with experience continuing as currently expected, we would require an average rate increase of 82.1% compared to the current proposed rate increase of 25.6%.

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 Testing

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) and Essential Care II (BSC-03)

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
1988	-	-	-	-	1,179	0%	-	1,179	0%
1989	-	-	-	-	3,448	0%	-	3,448	0%
1990	-	-	-	-	3,636	0%	-	3,636	0%
1991	-	-	-	-	4,829	0%	-	4,829	0%
1992	-	-	-	-	5,212	0%	-	5,212	0%
1993	-	-	-	-	7,956	0%	-	7,956	0%
1994	-	-	-	-	10,400	0%	-	10,400	0%
1995	-	-	-	-	11,239	0%	-	11,239	0%
1996	-	-	-	-	18,865	0%	-	18,865	0%
1997	-	-	-	-	20,398	0%	-	20,398	0%
1998	-	-	-	-	27,710	0%	-	27,710	0%
1999	-	-	-	-	40,511	0%	-	40,511	0%
2000	-	-	-	-	63,789	0%	-	63,789	0%
2001	-	-	-	-	97,037	0%	-	97,037	0%
2002	-	-	-	-	144,813	0%	-	144,813	0%
2003	37	2,646	1%	-	248,785	0%	-	248,785	0%
2004	302,003	17,939,949	2%	225,821	18,109,482	1%	225,821	18,109,482	1%
2005	1,638,496	69,058,517	2%	2,150,155	68,412,756	3%	2,150,155	68,412,756	3%
2006	4,693,473	134,095,322	4%	6,477,942	133,459,349	5%	6,477,942	133,459,349	5%
2007	10,102,110	216,552,030	5%	9,635,386	217,188,908	4%	9,635,386	217,188,908	4%
2008	17,510,914	260,982,995	7%	14,487,804	264,673,587	5%	14,487,804	264,673,587	5%
2009	25,659,048	263,040,620	10%	21,472,839	268,248,425	8%	21,472,839	268,248,425	8%
2010	33,401,862	256,115,548	13%	26,138,034	263,683,658	10%	26,138,034	263,683,658	10%
2011	40,841,062	248,425,028	16%	35,186,489	257,488,898	14%	35,186,489	257,488,898	14%
2012	47,939,576	241,529,906	20%	43,966,053	244,558,546	18%	43,966,053	244,558,546	18%
2013	56,249,328	235,086,905	24%	49,659,659	242,518,985	20%	49,659,659	242,518,985	20%
2014	65,839,772	228,853,426	29%	65,661,665	262,596,442	25%	65,661,665	262,596,442	25%
2015	75,473,330	222,605,362	34%	79,875,972	267,060,720	30%	79,875,972	267,060,720	30%
2016	85,128,180	216,179,307	39%	99,849,861	261,696,378	38%	99,849,861	261,696,378	38%
2017	94,584,825	209,474,808	45%	115,212,692	256,137,147	45%	115,212,692	256,137,147	45%
2018	105,393,531	202,472,796	52%	115,803,454	261,555,192	44%	115,803,454	261,555,192	44%
2019	118,240,502	195,196,675	61%	135,778,646	272,376,391	50%	135,800,362	274,558,196	49%
2020	132,382,289	187,693,702	71%	158,747,660	269,283,051	59%	159,613,903	318,937,194	50%
2021	147,350,564	179,995,717	82%	183,901,716	260,531,759	71%	184,194,971	325,045,516	57%
2022	163,059,676	172,113,695	95%	210,950,952	251,549,298	84%	209,865,722	311,591,731	67%
2023	180,354,483	164,073,325	110%	239,873,601	242,304,602	99%	238,664,771	300,189,162	80%
2024	199,108,515	155,913,215	128%	270,260,963	232,767,262	116%	268,859,355	288,417,623	93%
2025	218,389,550	147,670,194	148%	301,852,514	222,921,433	135%	300,207,862	276,257,401	109%
2026	237,397,038	139,379,941	170%	332,926,862	212,748,409	156%	331,019,200	263,685,499	126%
2027	255,734,049	131,072,394	195%	361,912,627	202,239,263	179%	359,740,209	250,690,977	143%
2028	273,243,745	122,775,626	223%	389,818,695	191,369,267	204%	387,366,185	237,243,365	163%
2029	289,456,283	114,520,008	253%	418,262,958	180,130,606	232%	415,500,130	223,333,382	186%
2030	303,600,802	106,343,500	285%	444,352,310	168,558,275	264%	441,292,600	209,004,727	211%
2031	314,828,364	98,291,998	320%	469,800,450	156,721,196	300%	466,427,044	194,343,170	240%
2032	323,071,088	90,407,361	357%	492,066,637	144,763,107	340%	488,391,113	179,527,210	272%
2033	328,601,894	82,728,310	397%	505,335,346	132,788,400	381%	501,450,563	164,686,681	304%
2034	331,539,022	75,292,810	440%	511,374,297	120,930,483	423%	507,347,768	149,987,575	338%
2035	331,741,530	68,140,221	487%	508,926,194	109,317,329	466%	504,846,520	135,589,131	372%
2036	328,491,215	61,313,256	536%	504,651,924	98,073,970	515%	500,510,777	121,646,905	411%
2037	322,027,893	54,848,564	587%	499,335,396	87,370,203	572%	495,115,019	108,371,981	457%
2038	312,248,528	48,773,952	640%	485,627,598	77,315,793	628%	481,423,783	95,901,015	502%
2039	299,928,023	43,109,561	696%	464,434,327	67,977,845	683%	460,337,565	84,317,750	546%
2040	285,837,121	37,869,965	755%	435,902,060	59,379,640	734%	432,008,869	73,651,457	587%
Values as of 12/31/2017 (discounted at maximum statutory valuation rates)									
Past :	649,662,825	3,658,065,351	17.8%	653,636,470	3,890,198,578	16.8%	653,636,470	3,890,198,578	16.8%
Future :	4,191,697,019	2,007,329,890	208.8%	5,979,735,204	2,975,076,901	201.0%	5,939,882,717	3,556,048,720	167.0%
Lifetime :	4,841,359,845	5,665,395,241	85.5%	6,633,371,674	6,865,275,478	96.6%	6,593,519,186	7,446,247,298	88.5%

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 =	653,636,470	Accum Value of Past Initial Prm x 85.5% =	3,146,533,311
Present Value of Future Incurred Claims =	5,939,882,717	Present Value of Future Initial Prm x 85.5% =	1,799,098,674
Total =	6,593,519,186	Accum Value of Prior Increases x 85.5% =	177,833,371
		Present Value of Future Increases x 85.5% =	1,239,720,463
		Total =	6,363,185,820

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 =	653,636,470	Accum Value of Past Initial Prm x 85.5% =	3,146,533,311
Present Value of Future Incurred Claims =	5,939,882,717	Present Value of Future Initial Prm x 85.5% =	1,799,098,674
Total =	6,593,519,186	Accum Value of Prior Increases x 85.5% =	177,833,371
		Present Value of Future Increases x 85.5% =	1,239,720,463
		Total =	6,363,185,820

**Exhibit 1A: Demonstration of not Recouping Past Losses
Custom Care II (LTC-03) and Essential Care II (BSC-03)**

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	1,179	0%	0	1,179	0%	
1989	0	0	0%	-	0	3,448	0%	0	3,448	0%	
1990	0	0	0%	-	0	3,636	0%	0	3,636	0%	
1991	0	0	0%	-	0	4,829	0%	0	4,829	0%	
1992	0	0	0%	-	0	5,212	0%	0	5,212	0%	
1993	0	0	0%	-	0	7,956	0%	0	7,956	0%	
1994	0	0	0%	-	0	10,400	0%	0	10,400	0%	
1995	0	0	0%	-	0	11,239	0%	0	11,239	0%	
Original Pricing 1996	0	0	0%	-	0	18,865	0%	0	18,865	0%	
1997	0	0	0%	-	0	20,398	0%	0	20,398	0%	
1998	0	0	0%	-	0	27,710	0%	0	27,710	0%	
1999	0	0	0%	-	0	40,511	0%	0	40,511	0%	
2000	0	0	0%	-	0	63,789	0%	0	63,789	0%	
2001	0	0	0%	-	0	97,037	0%	0	97,037	0%	
2002	0	0	0%	-	0	144,813	0%	0	144,813	0%	
2003	37	2,646	1%	3,496	0	248,785	0%	0	248,785	0%	
2004	302,003	17,939,949	2%	304,857	225,821	18,109,482	1%	225,821	18,109,482	1%	
2005	1,638,496	69,058,517	2%	1,623,174	2,150,155	68,412,756	3%	2,150,155	68,412,756	3%	
2006	4,693,473	134,095,322	4%	4,671,214	6,477,942	133,459,349	5%	6,477,942	133,459,349	5%	
2007	10,102,110	216,552,030	5%	10,131,820	9,635,386	217,188,908	4%	9,635,386	217,188,908	4%	
2008	17,510,914	260,982,995	7%	17,758,538	14,487,804	264,673,587	5%	14,487,804	264,673,587	5%	
2009	25,659,048	263,040,620	10%	26,167,058	21,472,839	268,248,425	8%	21,472,839	268,248,425	8%	
2010	27,151,643	265,881,447	10%	27,151,643	26,138,034	263,683,658	10%	26,138,034	263,683,658	10%	
2010 RI 2011	34,127,438	317,616,601	11%	34,127,438	35,186,489	257,488,898	14%	35,186,489	257,488,898	14%	
2010 RI 2012	42,991,279	311,893,928	14%	42,991,279	43,966,053	244,558,546	18%	43,966,053	244,558,546	18%	
2010 RI 2013	52,673,946	305,926,762	17%	52,673,946	49,659,659	242,518,985	20%	49,659,659	242,518,985	20%	
2010 RI 2014	63,071,904	299,606,531	21%	63,071,904	65,661,665	262,596,442	25%	65,661,665	262,596,442	25%	
2010 RI 2015	74,260,569	292,863,207	25%	74,260,569	79,875,972	267,060,720	30%	79,875,972	267,060,720	30%	
2016 RI 2016	85,793,113	260,609,535	33%	85,793,113	99,849,861	261,696,378	38%	99,849,861	261,696,378	38%	
2016 RI 2017	101,343,816	254,179,720	40%	101,343,816	115,212,692	256,137,147	45%	115,212,692	256,137,147	45%	
2018					115,803,454	261,555,192	44%	115,803,454	261,555,192	44%	
2019					135,778,646	272,376,391	50%	135,800,362	274,558,196	49%	
2020					158,747,660	269,283,051	59%	159,613,903	318,937,194	50%	
Projected Future Experience 2021					183,901,716	260,531,759	71%	184,194,971	325,045,516	57%	
2022					210,950,952	251,549,298	84%	209,865,722	311,591,731	67%	
2023					239,873,601	242,304,602	99%	238,664,771	300,189,162	80%	
2024					270,260,963	232,767,262	116%	268,859,355	288,417,623	93%	
2025					301,852,514	222,921,433	135%	300,207,862	276,257,401	109%	
2026					332,926,862	212,748,409	156%	331,019,200	263,685,499	126%	
2027					361,912,627	202,239,263	179%	359,740,209	250,690,977	143%	
2028					389,818,695	191,369,267	204%	387,366,185	237,243,365	163%	
2029					418,262,958	180,130,606	232%	415,500,130	223,333,382	186%	
2030					444,352,310	168,558,275	264%	441,292,600	209,004,727	211%	
2031					469,800,450	156,721,196	300%	466,427,044	194,343,170	240%	
2032					492,066,637	144,763,107	340%	488,391,113	179,527,210	272%	
2033					505,335,346	132,788,400	381%	501,450,563	164,686,681	304%	
2034					511,374,297	120,930,483	423%	507,347,768	149,987,575	338%	
2035					508,926,194	109,317,329	466%	504,846,520	135,589,131	372%	
2036					504,651,924	98,073,970	515%	500,510,777	121,646,905	411%	
2037					499,335,396	87,370,203	572%	495,115,019	108,371,981	457%	
2038					485,627,598	77,315,793	628%	481,423,783	95,901,015	502%	
2039					464,434,327	67,977,845	683%	460,337,565	84,317,750	546%	
2040					435,902,060	59,379,640	734%	432,008,869	73,651,457	587%	
Values as of 12/31/2017 (discounted at maximum statutory valuation rates)											
Past				632,067,210	653,636,470	3,890,198,578	16.8%	653,636,470	3,890,198,578	16.8%	
Future					5,979,735,204	2,975,076,901	201.0%	5,939,882,717	3,556,048,720	167.0%	
Lifetime					6,633,371,674	6,865,275,478	96.6%	6,593,519,186	7,446,247,298	88.5%	

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)	632,067,210	Accum Value of Past Initial Prm x 85.5% =	3,146,533,311
Present Value of Future Incurred Claims =	5,939,882,717	Present Value of Future Initial Prm x 85.5% =	1,799,098,674
Total =	6,571,949,927	Accum Value of Prior Increases x 85.0% =	177,833,371
	>=	Present Value of Future Increases x 85.0% =	1,239,720,463
		Total =	6,363,185,820

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)	632,067,210	Accum Value of Past Initial Prm x 85.5% =	3,146,533,311
Present Value of Future Incurred Claims =	5,939,882,717	Present Value of Future Initial Prm x 85.5% =	1,799,098,674
Total =	6,571,949,927	Accum Value of Prior Increases x 80.0% =	177,833,371
	>=	Present Value of Future Increases x 80.0% =	1,239,720,463
		Total =	6,363,185,820

Appendix A - Comparison to New Business Rates (Custom Care II Series)

Rates shown are for a 90-day EP, single, Standard policyholder, and are per \$100 monthly benefit

Inflation Option: GPO Inflation

New Business Rates adjusted for Benefit Differences* :

Table with columns: Issue Age, Benefit Period (2, 3, 4, 5, 6, 10, Life) and rows for ages 18-29 to 84.

BSC-03 Rates after Requested Rate Increases

excluding additional rate increase due to cost of delay :

Table with columns: Issue Age, Benefit Period (2, 3, 4, 5, 6, 10, Life) and rows for ages 18-29 to 84.

BSC-03 Rates after Requested Rate Increases

including additional rate increase due to cost of delay :

Table with columns: Issue Age, Benefit Period (2, 3, 4, 5, 6, 10, Life) and rows for ages 18-29 to 84.

BSC-03 2016 Rate Increases (%) :

Table with columns: Issue Age, Benefit Period (2, 3, 4, 5, 6, 10, Life) and rows for ages 18-29 to 84.

* Benefit Differences between BSC-03 and ICC12-LTC-12:

ICC12-LTC-12 underwriting guidelines and classification are stricter than for BSC-03

ICC12-LTC-12 10yr and Lifetime rates are approximated by applying the ratio of [BSC-03 Lifetime (or 10yr) / BSC-03 6yr] to the ICC12-LTC-12 6yr rates (BSC-03 was the last product in which we offered both 10yr and Lifetime benefit period options)

ICC12-LTC-12 unisex rates are determined by assuming a 60% female / 40% male mix of business

**Appendix D
Custom Care II (LTC-03) and Essential Care II (BSC-03)
Shared Cost Percentages**

Age	GPO							Simple Inflation							Compound Inflation						
	Benefit Period							Benefit Period							Benefit Period						
	2 Years	3 Years	4 Years	5 Years	6 Years	10 Years	Life	2 Years	3 Years	4 Years	5 Years	6 Years	10 Years	Life	2 Years	3 Years	4 Years	5 Years	6 Years	10 Years	Life
18-29	13.1%	13.1%	13.1%	12.6%		9.6%	12.1%	4.2%	7.9%	4.9%	6.3%		8.9%	7.4%	9.4%	10.4%	10.6%	16.6%	9.9%	15.4%	14.0%
30	13.1%			13.1%		13.1%			8.3%	5.6%	9.4%		8.9%	6.6%	13.0%	16.6%	16.6%		10.6%		12.7%
31		13.1%					12.7%	3.1%	10.4%	11.2%	13.1%		13.1%	9.0%	8.9%	10.9%	9.2%	15.0%	16.6%	11.5%	12.3%
32	13.1%	13.1%	10.0%	13.1%			13.1%	11.4%	7.1%	6.5%	10.6%		5.0%	8.0%	9.2%	11.3%	11.2%	10.2%	8.1%	13.2%	14.0%
33		13.1%		13.1%			13.1%	13.1%	7.1%	7.9%			6.8%		12.9%	16.6%	11.7%	12.6%	9.7%	7.6%	16.6%
34	13.1%	13.1%		11.4%	13.1%		11.5%		9.7%	7.0%	8.8%		9.6%		11.7%	16.6%	14.2%	12.5%	9.9%	4.5%	9.3%
35	13.1%	13.1%	13.1%	13.1%			11.9%		9.9%	11.9%	7.0%		11.3%		11.7%	15.9%	12.9%	12.6%	16.6%	13.9%	11.2%
36	13.1%		13.1%	12.3%			13.1%	6.8%	13.1%	9.4%	9.4%		9.1%		11.5%	13.0%	11.4%	11.2%	10.4%	14.3%	10.6%
37		13.1%	13.1%	13.1%	7.6%		11.7%	9.8%	10.1%	11.1%	9.0%		8.8%	14.3%	11.4%	11.2%	14.7%	12.2%	14.0%	12.0%	12.3%
38	13.1%	13.1%	13.1%	13.1%	13.1%	12.5%	13.1%		12.7%	12.3%	14.1%		10.9%	16.6%	11.0%	15.1%	12.8%	13.0%	12.8%	6.8%	11.5%
39	13.1%	13.1%	13.1%	13.1%	12.8%		13.1%		13.1%	16.4%	12.6%		15.2%	16.6%	10.6%	13.0%	13.6%	12.3%	13.2%	11.4%	14.8%
40	13.1%	13.1%	13.1%	13.1%	13.1%	13.1%	11.8%	16.6%	11.3%	13.4%	12.7%		16.6%	11.2%	11.5%	16.6%	12.9%	13.7%	12.5%	12.1%	16.2%
41	13.1%	13.1%	13.1%	13.1%	13.1%	11.5%	13.1%	16.6%	14.8%	16.6%	13.7%		14.5%	15.1%	14.1%	16.6%	12.0%	12.1%	13.9%	12.4%	14.1%
42	13.1%	13.1%	13.1%	13.1%	13.1%	12.9%	13.0%		16.5%	16.1%	12.8%		15.2%	14.3%	12.9%	16.1%	12.0%	13.4%	13.0%	11.7%	16.5%
43	13.1%	13.1%	13.1%	13.1%	13.1%	13.1%	13.1%	16.6%	16.6%	14.2%	15.6%		14.4%	7.4%	13.5%	16.6%	12.1%	14.7%	13.3%	13.3%	13.4%
44	13.1%	15.3%	13.1%	13.1%	13.1%	13.1%	13.1%	13.9%	15.5%	15.0%	14.3%		14.4%	16.6%	13.3%	14.2%	11.7%	13.4%	13.1%	12.9%	16.4%
45	13.1%	15.3%	13.1%	13.1%	13.1%	13.1%	13.1%	16.6%	15.5%	16.0%	15.6%		16.6%	16.6%	14.5%	13.9%	13.8%	13.4%	15.1%	14.1%	15.7%
46	13.1%	13.1%	13.1%	13.1%	13.1%	13.1%	13.1%	16.6%	16.3%	15.3%	15.6%		16.2%	16.5%	16.6%	16.6%	14.2%	13.4%	14.0%	14.7%	14.3%
47	13.1%	13.1%	13.1%	13.1%	13.1%	15.8%	13.1%	16.6%	16.6%	16.5%	16.6%		15.2%	16.6%	16.4%	15.8%	13.6%	13.6%	14.4%	13.9%	14.2%
48	13.1%	13.1%	13.1%	13.1%	13.1%	15.7%	13.1%	16.6%	16.6%	16.1%	16.6%		16.6%	16.6%	15.6%	15.4%	13.9%	13.5%	14.5%	13.8%	16.6%
49	15.5%	13.1%	13.1%	13.1%	13.1%	16.6%	16.6%	16.6%	16.6%	16.6%	15.9%		16.6%	16.6%	16.6%	16.6%	14.4%	14.4%	15.2%	11.8%	16.1%
50	15.5%	15.9%	15.5%	13.1%	12.8%	16.6%	15.4%	12.8%	11.5%	11.7%	11.8%		11.1%	13.3%	11.7%	10.4%	10.9%	10.6%	10.8%	10.6%	12.5%
51	16.4%	15.9%	15.4%	13.1%	13.1%	16.6%	16.1%	10.7%	12.5%	11.7%	12.5%		11.1%	14.5%	11.5%	11.9%	11.4%	11.0%	11.2%	10.7%	11.9%
52	15.3%	15.9%	15.4%	13.1%	12.9%	16.6%	16.2%	15.5%	13.4%	12.4%	12.8%		12.1%	14.7%	12.1%	12.9%	11.9%	11.0%	11.9%	12.0%	13.4%
53	13.1%	13.1%	13.1%	13.1%	13.1%	16.6%	16.6%	15.5%	14.6%	12.3%	12.8%		12.6%	13.9%	13.2%	12.8%	11.8%	12.1%	12.1%	11.9%	14.2%
54	13.1%	13.1%	13.1%	15.8%	15.7%	16.6%	16.6%	15.3%	15.2%	12.8%	13.9%		13.7%	14.8%	14.1%	13.6%	12.3%	12.3%	12.4%	12.3%	14.6%
55	16.3%	10.3%	9.6%	12.9%	11.4%	13.6%	14.0%	10.3%	9.7%	9.2%	9.7%		9.0%	10.9%	10.6%	10.3%	9.6%	9.4%	9.4%	10.4%	11.0%
56	16.1%	11.2%	13.3%	14.1%	11.9%	16.0%	13.7%	11.6%	11.1%	9.5%	10.4%		10.1%	12.5%	10.3%	10.8%	10.0%	9.5%	9.7%	9.5%	10.6%
57	15.9%	11.7%	10.6%	14.4%	11.0%	15.3%	14.6%	11.6%	11.1%	10.3%	11.0%		10.4%	11.7%	10.7%	11.3%	10.6%	9.8%	10.4%	9.9%	11.5%
58	15.7%	12.3%	14.0%	15.6%	13.5%	16.6%	15.8%	12.8%	11.7%	11.0%	11.3%		11.1%	12.6%	11.4%	11.2%	11.1%	10.5%	11.2%	10.5%	12.0%
59	15.4%	15.7%	16.0%	16.2%	14.7%	16.6%	15.9%	14.1%	12.9%	11.8%	12.2%		12.8%	13.8%	11.6%	12.1%	11.8%	10.9%	11.7%	11.1%	13.0%
60	9.8%	10.5%	9.4%	10.1%	9.4%	12.0%	10.5%	8.9%	8.1%	7.8%	8.1%		8.2%	8.0%	8.1%	8.8%	8.3%	7.6%	8.1%	8.0%	9.1%
61	11.0%	11.2%	10.2%	10.2%	9.3%	11.7%	10.9%	10.2%	8.7%	8.1%	8.7%		8.5%	9.9%	8.4%	8.7%	8.4%	8.0%	8.6%	8.3%	9.8%
62	14.1%	12.5%	10.9%	12.0%	10.6%	12.4%	11.6%	11.0%	9.2%	8.5%	9.0%		8.8%	9.8%	9.0%	9.8%	8.8%	8.7%	8.7%	8.5%	10.6%
63	16.1%	12.4%	11.5%	12.4%	11.8%	14.8%	12.2%	11.2%	9.8%	9.2%	9.4%		8.4%	10.2%	9.1%	10.5%	9.5%	9.2%	9.3%	11.0%	11.0%
64	15.9%	14.2%	13.6%	10.6%	10.4%	16.6%	14.1%	12.6%	10.6%	9.7%	10.1%		9.8%	10.4%	10.6%	11.7%	10.1%	9.9%	10.0%	9.7%	10.3%
65	11.4%	8.4%	8.1%	8.0%	6.0%	10.2%	8.6%	7.9%	6.9%	6.2%	6.6%		5.8%	7.1%	6.9%	8.1%	6.8%	6.7%	6.8%	8.3%	7.8%
66	11.7%	7.2%	9.0%	6.8%	6.3%	11.8%	9.7%	8.7%	7.4%	7.0%	7.1%		6.4%	9.0%	7.8%	8.8%	7.5%	7.1%	7.5%	6.8%	7.6%
67	13.8%	10.0%	9.4%	7.6%	6.8%	11.6%	11.0%	9.6%	8.2%	7.5%	7.8%		6.7%	8.9%	7.5%	9.5%	8.2%	7.5%	7.9%	7.8%	9.1%
68	13.8%	11.3%	10.6%	8.4%	8.1%	13.5%	11.7%	10.3%	9.0%	8.0%	8.7%		8.0%	10.0%	8.3%	10.4%	8.7%	8.6%	8.7%	10.4%	9.2%
69	14.8%	11.8%	11.3%	8.9%	8.9%	14.9%	12.1%	11.3%	9.8%	9.1%	9.5%		8.4%	9.5%	7.8%	11.6%	9.6%	8.8%	9.9%	8.5%	10.7%
70	10.1%	8.0%	7.2%	5.8%	5.2%	10.4%	8.4%	8.0%	6.5%	6.3%	6.3%		5.8%	7.1%	7.0%	7.8%	6.7%	6.4%	6.7%	5.8%	6.6%
71	11.1%	8.8%	7.6%	6.4%	7.1%	8.9%	8.9%	8.5%	7.4%	6.8%	6.8%		6.7%	11.1%	7.3%	9.5%	7.4%	6.7%	7.3%	6.1%	6.6%
72	11.7%	9.8%	9.2%	7.6%	7.1%	11.7%	9.1%	11.7%	8.0%	6.9%	6.9%		5.9%	6.7%	10.0%	9.7%	8.1%	7.8%	7.2%	7.7%	9.2%
73	13.3%	10.4%	9.9%	7.4%	8.0%	11.5%	9.3%	12.0%	8.8%	8.5%	8.5%		7.5%	11.7%	8.0%	12.6%	8.1%	9.0%	9.0%	8.7%	11.7%
74	15.3%	11.2%	10.9%	8.6%	9.0%	13.1%	7.2%	11.7%	10.1%	10.1%	8.9%		9.7%	13.3%	8.8%	11.6%	9.5%	10.9%	9.4%	7.0%	16.4%
75	8.6%	6.4%	6.6%	5.9%	6.2%	6.4%	6.1%	8.8%	6.9%	6.8%	6.7%		6.5%	6.8%	6.5%	7.2%	6.9%	6.2%	6.5%	5.6%	8.5%
76	12.4%	6.9%	7.7%	6.4%	8.2%	6.5%	7.1%	8.8%	7.8%	6.6%	7.2%		10.2%		6.8%	7.9%	8.3%	7.2%	6.3%	5.8%	9.5%
77	10.5%	8.1%	8.2%	6.8%	7.9%	8.6%	8.7%	10.1%	7.6%	9.5%	7.0%			11.1%	10.9%	7.8%	9.3%	6.4%	9.7%		6.5%
78	11.3%	9.0%	9.0%	7.9%	8.6%	9.8%	8.3%	11.9%	9.1%	7.7%	10.3%		7.3%		8.8%	9.6%	7.4%		6.4%		
79	13.1%	9.8%	12.1%	8.8%	8.1%	8.4%	11.0%	13.8%	9.6%	8.6%	10.4%		6.8%			9.3%	7.8%		16.6%		
80	9.6%	7.5%						10.5%	8.6%						8.0%	5.1%					
81	11.5%	8.9%			8.0%			14.7%	7.3%							6.5%					
82	13.1%	7.8%						9.9%								14.3%	8.0%				
83	13.0%	9.7%						14.9%	6.5%												
84	13.1%	10.3%							11.1%												
85																					
86																					
87																					
88																					
89																					
90																					
91																					

Certain cells are blank because there are no nationwide policies with that benefit period, issue age and inflation combination
For GPO policies with multiple layers of coverage, the Shared Cost percentage will be based on the issue age of the base contract. Each GPO layer will be reduced by the Shared Cost percentage

Appendix D
Custom Care II (LTC-03) and Essential Care II (BSC-03)
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:

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