

John Hancock Life Insurance Company (U.S.A.)
Actuarial Memorandum for Inforce Rate Increase – Custom Care III
April 26, 2023

<u>Product Name</u>	<u>Form Number</u>	<u>Issue Date Range</u>
Custom Care III	ICC10-LTC-11	Jun 2011 - Dec 2012

These policy form rates were originally priced with a margin for moderately adverse experience in accordance with the NAIC model rate stability regulations which were being implemented on a State by State basis during the time of our initial rate filing.

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.

2. Justification for Rate Increase

John Hancock has completed our most recent triennial comprehensive long-term care experience study which examines the usage trends for our insured population. Relative to previous expectations, the new data demonstrates lower mortality for non-claimants, higher utilization of benefits, and lower than expected claim terminations, partly offset by lower claim incidence. Based on that data, we have determined that there is a need to increase premiums on certain policy series. Further detail on assumptions and recent analysis is provided in **Addendum #1 - Assumptions and Analysis Performed**.

3. Requested Rate Increase

The Company is requesting an average rate increase of 36.0%, which varies by inflation option, and ranges from 33.9% to 47.9%. Rate increases were derived as outlined below, ensuring at each step that the proposed rate increases did not result in premium rates that exceed rates for older issue ages:

1. The Company first determined the projected lifetime loss ratio for this form based on nationwide actual experience and projected future experience assuming the prior rate increase request was approved in full and within three months of the original filing date. We then determined the amount of rate increase (25.2%) that would be needed to satisfy the rate stability rule ensuring a loss ratio no less than 85% (or the original pricing loss ratio if greater) on the rate increase portion, while applying 58% (or the original pricing loss ratio if greater) on the original rate schedule.
2. Rate increases were adjusted to account for the timing of approvals on prior filings in your State. Adjustments are proportional to the amounts requested in prior filings and were determined to satisfy the rate stability rule. After the application of this adjustment, the average rate increase for the forms listed in this memo is a flat 25.8%.
3. Unapproved rate increases initially requested in our prior inforce rate filing (SERFF Tracking No. MULF-131066170) were included in this filing. These rate increases continue to be actuarially justified and are unchanged from our original request with the following exception: to account for the delayed implementation of the originally-requested rate increases, we have adjusted the portion of the current proposed rate increases attributable to the 2016 remainder so that on a present-value basis it is equivalent to implementing our original request all at once. After taking the unapproved amount into account and applying this adjustment, the average rate increase for the forms listed in this memo is a flat 47.9%.

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4. After applying the projected gains from improved hedge terms as a reduction to claims, we ensured that the resulting overall increase in rates continues to satisfy the rate stability rule. This is demonstrated at the bottom of Exhibit 1 where it can be seen that the sum of past and future projected incurred claims excluding past losses is not less than the sum of the original premium times the greater of 58% and the original pricing loss ratio and the rate increase premium times the greater of 85% and the original pricing loss ratio. The resulting average rate increase for CPI policies, reduced for the projected hedge gains, is a flat 33.9%, while the resulting rate increase for non-CPI policies is a flat 47.9%.
5. In accordance with COMAR 31.14.01.04(A)(5), we are willing to phase-in the requested rate increase on an equivalent basis such that the maximum annual rate increase does not exceed 15%.

A summary of proposed rate increases can be found in **Appendix A**.

In the rate schedules by policy form, **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 the Appendices due to implementation rounding algorithms.

Exhibit 1 contains nationwide past premium and claims experience as well as future premium and claim projections and hedge gains. Waived premiums are not included. It illustrates that the anticipated lifetime loss ratio, net of hedge gains and with the requested rate increase is 62.4%, compared to the original pricing loss ratio (updated for actual CPI) of 58.2%. The lifetime loss ratio as of 12/31/2021 is calculated as the sum of accumulated past and discounted future claims less hedge gains 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 with the lifetime loss ratios calculated as stated above, adjusted for the following.

- Original expected loss ratios assumed all business was issued with a 4% maximum valuation rate. Some business was issued in 2013 which has a 3.5% maximum valuation rate, therefore, the loss ratio needed to be adjusted.
- For contracts with the CPI linked inflation rider, both past and future benefits were updated to reflect the impact of actual past CPI rates differing from the original pricing assumption. In this way, the current projected benefits and the benefits projected in original pricing are based on the same level of CPI indices. This adjustment is needed to neutralize the impact on the rate increase for differences in actual past CPI from original pricing assumptions; i.e. the need for a rate increase and the level of a rate increase is not dependent on changes in the CPI levels. Adjustments will be made in both directions (i.e. when actual CPI is higher or lower than original pricing).
- Updated to reflect the actual mix of business sold

Furthermore, **Exhibit 1** demonstrates that the calculated loss ratio respects the applicable post stability 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 greater of the original assumed lifetime loss ratio and 58%,
2. Accumulated value of prior premium rate schedule increases times the greater of the original assumed lifetime loss ratio and 85%,
3. Present value of future projected initial earned premium times the greater of the original assumed lifetime loss ratio and 58%, and
4. Present value of future projected premium in excess of the projected initial earned premium times the greater of the original assumed lifetime loss ratio and 85%.

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4. Nationwide Loss Ratio Exhibit (Exhibit 1)

Custom Care III/Core Care (LTC-11)

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
2001	-	-	0%	-	2,176	0%	-	2,176	0%
2002	-	-	0%	-	2,176	0%	-	2,176	0%
2003	-	-	0%	-	2,176	0%	-	2,176	0%
2004	-	-	0%	-	2,176	0%	-	2,176	0%
2005	-	-	0%	-	2,176	0%	-	2,176	0%
2006	-	-	0%	-	2,176	0%	-	2,176	0%
2007	-	-	0%	-	9,974	0%	-	9,974	0%
2008	-	-	0%	-	13,161	0%	-	13,161	0%
2009	-	-	0%	-	14,935	0%	-	14,935	0%
2010	-	-	0%	-	25,297	0%	-	25,297	0%
2011	35,823	7,488,632	0%	119,960	7,749,237	2%	119,960	7,749,237	2%
2012	291,111	25,029,174	1%	-	25,198,913	0%	-	25,198,913	0%
2013	602,960	28,707,922	2%	9,812	28,477,124	0%	9,812	28,477,124	0%
2014	939,620	29,477,615	3%	323,222	29,195,486	1%	323,222	29,195,486	1%
2015	1,322,607	29,054,456	5%	576,514	28,750,983	2%	576,514	28,750,983	2%
2016	1,742,641	28,558,885	6%	1,294,894	28,151,989	5%	1,294,894	28,151,989	5%
2017	2,140,636	28,059,456	8%	2,471,300	28,056,521	9%	2,471,300	28,056,521	9%
2018	2,681,177	27,535,871	10%	2,617,590	29,054,874	9%	2,617,590	29,054,874	9%
2019	3,368,135	26,978,206	12%	4,087,638	28,267,905	14%	4,087,638	28,267,905	14%
2020	4,119,784	26,378,935	16%	3,154,677	27,694,622	11%	3,154,677	27,694,622	11%
2021	4,926,735	25,734,891	19%	3,516,729	27,181,503	13%	3,516,729	27,181,503	13%
Projected Future Experience									
2022	5,692,128	25,043,943	23%	6,387,799	26,913,134	24%	6,387,799	26,913,134	24%
2023	6,644,278	24,303,758	27%	7,582,103	26,320,985	29%	7,582,103	26,320,985	29%
2024	7,814,511	23,512,713	33%	8,880,286	25,719,983	35%	8,795,923	33,453,813	26%
2025	9,081,994	22,676,077	40%	10,306,997	25,085,234	41%	10,111,165	33,443,188	30%
2026	10,390,875	21,801,086	48%	11,826,374	24,400,685	48%	11,601,672	32,524,650	36%
2027	11,635,968	20,893,954	56%	13,526,650	23,658,252	57%	13,269,643	31,529,131	42%
2028	13,197,050	19,958,000	66%	15,556,656	22,852,570	68%	15,261,079	30,449,387	50%
2029	15,073,430	18,986,840	79%	17,765,010	21,994,797	81%	17,427,474	29,300,917	59%
2030	16,938,486	17,979,650	94%	20,146,197	21,096,097	95%	19,763,419	28,098,620	70%
2031	18,514,876	16,943,848	109%	22,678,415	20,153,561	113%	22,247,525	26,838,440	83%
2032	19,730,006	15,887,193	124%	25,289,780	19,167,232	132%	24,809,275	25,520,678	97%
2033	21,209,070	14,811,969	143%	27,971,246	18,134,983	154%	27,439,792	24,142,077	114%
2034	22,895,590	13,721,158	167%	30,665,948	17,058,517	180%	30,083,295	22,705,297	132%
2035	24,390,635	12,624,847	193%	33,296,998	15,941,815	209%	32,664,355	21,215,280	154%
2036	25,509,580	11,537,338	221%	35,739,988	14,794,102	242%	35,060,928	19,685,074	178%
2037	25,407,662	10,476,021	243%	37,891,962	13,623,393	278%	37,172,015	18,124,650	205%
2038	25,592,675	9,457,430	271%	39,616,360	12,438,663	318%	38,863,650	16,546,286	235%
2039	26,167,390	8,487,518	308%	40,926,549	11,267,201	363%	40,148,944	14,986,291	268%
2040	26,535,451	7,573,695	350%	41,778,127	10,126,701	413%	40,984,343	13,467,910	304%
2041	26,512,177	6,719,686	395%	42,083,445	9,017,015	467%	41,283,860	11,991,418	344%
2042	25,049,202	5,925,785	423%	41,769,990	7,935,129	526%	40,976,360	10,551,577	388%
2043	23,979,683	5,194,852	462%	40,770,090	6,915,427	590%	39,995,458	9,195,163	435%
2044	23,373,199	4,525,429	516%	39,340,182	5,982,266	658%	38,592,719	7,954,502	485%
2045	22,594,142	3,919,147	577%	37,623,527	5,144,597	731%	36,908,680	6,840,091	540%
2046	21,596,068	3,374,865	640%	35,634,359	4,393,626	811%	34,957,306	5,841,573	598%
2047	19,545,328	2,888,123	677%	33,396,260	3,727,118	896%	32,761,731	4,955,555	661%
2048	17,794,669	2,457,189	724%	30,914,064	3,126,020	989%	30,326,697	4,156,388	730%
2049	16,475,684	2,076,853	793%	28,360,375	2,595,293	1093%	27,821,528	3,450,810	806%
2050	15,122,477	1,745,404	866%	25,797,355	2,147,747	1201%	25,307,205	2,856,100	886%
2051	13,729,266	1,459,030	941%	23,259,547	1,775,548	1310%	22,817,616	2,361,392	966%
2052	11,878,444	1,212,699	980%	20,756,552	1,448,807	1433%	20,362,178	1,927,170	1057%
2053	10,344,086	1,003,114	1031%	18,346,816	1,174,534	1562%	17,998,226	1,562,424	1152%

Note: Please refer to the Actuarial Memorandum, section "Ensuring No Cross-Subsidization Between States", for adjustments made to experience exhibits

Values as of 12/31/2021 (discounted at maximum statutory valuation rates)

Past :	25,159,918	348,437,078	7.2%	20,356,356	353,621,794	5.8%	20,356,356	353,621,794	5.8%
Future :	327,793,448	258,285,999	126.9%	473,112,648	301,119,013	157.1%	464,455,052	383,277,980	121.2%
Lifetime :	352,953,366	606,723,076	58.2%	493,469,003	654,740,807	75.4%	484,811,407	736,899,774	65.8%
Lifetime Net of Hedges :	352,953,366	606,723,076	58.2%	468,513,317	654,740,807	71.6%	459,855,721	736,899,774	62.4%

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

Impact of Improved Hedge Terms =	(24,955,686)	Accum Value of Past Initial Pm x 58.2% =	200,677,256
Minimum (Accum Value of Past Incurred Claims,		Present Value of Future Initial Pm x 58.2% =	160,405,595
Accum Value of Adjusted Expected Incurred Claims) =	20,356,356	Accum Value of Prior Increases x 85.0% =	7,360,770
Present Value of Future Incurred Claims =	464,455,052	Present Value of Future Increases x 85.0% =	91,411,101
Total =	459,855,721	Total =	459,854,721

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5. Proposed Effective Date

These rates will be effective on the next policy anniversary date, following at least a 90 day policyholder notification period. The assumed effective date used to calculate the rate increase is 01/01/2024.

6. History of Previous Rate Revisions

A 7.5% rate increase on these policy forms was accepted by your state on December 05, 2017.

7. Reduced Benefit Options (RBOs)

If the full or substantial portion of the rate increase request is approved and per the state’s agreement, we will file the following additional options which provide policyholders alternatives to the rate increase:

- ***Inflation Landing Spots***
 Future inflation options (also referred to as “landing spots”) allow policyholders that have Compound inflation coverage the option to offset the rate increase. Under these 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 to a level which is actuarially equivalent to the requested rate increase in aggregate. These options are not available to limited pay policies or policyholders who have elected three prior inflation reductions.

- ***Voluntary Enhanced 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 premium rate tables reflecting these options will be filed upon request following a full or substantial approval.

8. State Policyholder Counts & Average Annual Premium

The table below summarizes the number of policies inforce that could be affected by the rate increase in your state and their annualized premiums, as well as the average annual premium per policy before and after the requested increase.

Counts and premiums are based on policies inforce as of 12/31/2021. Premium-paying policies as well as policies on claim are included, since although the premium for policies on claim is currently waived, they could be subject to the rate increase upon recovery. Paid-up policies and policies which have exercised the nonforfeiture benefit option are excluded.

Form	Number of Policies	2021 Annualized Premium*	2021 Average Annual Premium Before the rate increase*	2021 Average Annual Premium After the rate increase
ICC10-LTC-11	142	383,594	2,700	3,671

*Premiums reflect the rate increases approved in prior filing(s), including approvals where implementation is not yet complete

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9. State and Nationwide Distribution of Business as of December 31, 2021

The state-specific and nationwide distribution of business for policyholders impacted by the rate increase is shown below by inflation type, benefit period, and issue age. The breakdown of business by Premium Payment Option is also included to show the number of policyholders no longer paying premiums due to nonforfeiture election or paid-up status.

Inflation Type

State	GPO	Compound	CPI	CPI to 75	Total
NW	13%	3%	74%	11%	100%
MD	11%	3%	73%	13%	100%
NW	1,291	283	7,644	1,102	10,320
MD	15	4	104	19	142

Benefit Period

State	1 yr	2 yr	3 yr	4 yr	5 yr	6 yr	10 yr	Total
NW	0%	7%	32%	20%	24%	14%	2%	100%
MD	0%	11%	49%	15%	18%	6%	1%	100%
NW	9	707	3,327	2,073	2,490	1,458	256	10,320
MD	0	15	70	22	26	8	1	142

Issue Age

State	< 40	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	Total
NW	1%	2%	5%	15%	28%	28%	14%	4%	1%	100%
MD	1%	2%	7%	16%	32%	26%	10%	4%	1%	100%
NW	138	196	545	1,587	2,922	2,936	1,473	428	95	10,320
MD	1	3	10	23	46	37	14	6	2	142

Premium Payment Option

State	Lifetime Pay	On Claim	Limited Pay	NFO*	Survivorship Waiver of Premium*	Total
NW	97%	1%	2%	1%	0%	100%
MD	96%	1%	2%	0%	0%	100%
NW	10,094	70	156	70	3	10,393
MD	137	2	3	0	0	142

*Policies not included in distributions by count shown above as they are not impacted by the rate increase.

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10. Benefit Description(s)

A brief policy description for each of the policy forms:

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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.

11. Renewability

All policy forms are guaranteed renewable.

12. 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.

13. Trend Assumptions

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

14. Marketing Method

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

15. 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.

16. Premium Classes

The base policy premium rates vary by issue age, benefit period, inflation option, home health care maximum benefit percentage, and underwriting class, as in the initial rate filing.

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

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17. Premium Modalization Rules

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

18. Issue Age Range

The issue age range is 18-79 for all policy forms.

19. Area Factors

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

20. Reserves

Active Life Reserves have not been used in this rate increase demonstration. Minimum Statutory Claim reserves as of 12/31/2021 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 12/31/2021 have also been allocated to the calendar year of incurral and included in historic incurred claims.

21. Data Credibility

Regarding the credibility of data for younger blocks of business such as Custom Care III, 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:

“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 III 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

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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.

22. 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 the section entitled **History of Previous Rate Revisions**). 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.

23. 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.”

We apply this methodology in demonstrating that we are not recouping past losses.

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 a loss ratio no less than 85% (or the original pricing loss ratio if greater) on the rate increase portion, while applying 58% (or the original pricing loss ratio if greater) on the original rate schedule. This is demonstrated at the bottom of **Exhibit 1**. The derivation of Adjusted Expected Incurred Claims and comparison to Actual Incurred Claims can be seen in **Addendum #2 – Demonstration of not Recouping Past Losses**.

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24. Actuarial Certification

I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries, and I meet the Academy's qualification standards for 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.



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Actuary, Long Term Care Inforce Management
John Hancock Life Insurance Company

John Hancock Life Insurance Company (U.S.A.)
Actuarial Memorandum for Inforce Rate Increase – Custom Care III
April 26, 2023

Addendum #1 - Assumptions and Analysis Performed

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 unfavorable trends since the study that prompted our 2019 rate increase filings.

Relative to previous expectations, the new data demonstrates lower mortality for non-claimants, higher utilization of benefits, and lower than expected claim terminations, partly offset by lower claim incidence.

[REDACTED]

A. Current & Prior Assumptions

Morbidity

[REDACTED]

Incidence

[REDACTED]

After updating assumptions to reflect the generally favorable experience, the overall A/E ratio is 101%.

Incidence (Count)		
Duration	A/E Before Assumption Update	A/E After Assumption Update
10-11	93%	99%
12-14	95%	101%
15+	94%	102%
Total	94%	101%

Claim Terminations

[REDACTED]

After updating assumptions to reflect termination experience, the A/E is 99% for the first 5 months on claim and 97% overall.

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Terminations (Count)						
Benefit Period	All Months		Months 1-5		Months 6+	
	A/E Before Assumption Update	A/E After Assumption Update	A/E Before Assumption Update	A/E After Assumption Update	A/E Before Assumption Update	A/E After Assumption Update
<10 years	97%	98%	95%	99%	98%	97%
10+ years	91%	96%	91%	102%	92%	93%
Total	96%	97%	94%	99%	97%	96%

Utilization

[REDACTED]

After updating our assumption based on experience, the total A/E is 102%.

Utilization (Amount)		
Inflation Type	A/E Before Assumption Update	A/E After Assumption Update
None/GPO	101%	101%
Simple	102%	101%
Compound	112%	104%
Total	106%	102%

Voluntary Lapses

[REDACTED]

Actual to Expected ratios by amount for this block (John Hancock individual business) summarized by inflation and duration groups before and after the assumption update are shown below.

Lapse (Amount)						
Duration	No Inflation		With Inflation		Total	
	A/E Before Assumption Update	A/E After Assumption Update	A/E Before Assumption Update	A/E After Assumption Update	A/E Before Assumption Update	A/E After Assumption Update
1-5	120%	72%	91%	100%	91%	99%
6-10	104%	87%	105%	107%	105%	104%
11-15	88%	95%	96%	100%	95%	99%
16-20	125%	93%	128%	103%	128%	101%
21-25	126%	119%	127%	123%	127%	121%
26+	109%	100%	88%	92%	104%	98%
Total	107%	96%	105%	104%	105%	102%

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The changes to the expected lapse assumption improved the fit across cohorts and resulted in a total A/E of 102%.

Mortality

[REDACTED]

The below table shows the healthy life A/E ratios by amount before and after the assumption update for our Retail Individual business.

Mortality (Amount)		
Duration	A/E Before Assumption Update	A/E After Assumption Update
1-5	100%	105%
6-10	99%	99%
11-15	96%	99%
16-20	94%	102%
21-25	97%	101%
26+	76%	84%
Total	95%	100%

Expenses

[REDACTED]

CPI Inflation Rate

[REDACTED]

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B. Original Pricing Assumptions

[REDACTED]

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Addendum #2 – Demonstration of not Recouping Past Losses
Custom Care III/Core Care (ICC-LTC-11)

	Calendar Year	Original Incurred Loss Ratio	Historic Data Earned Premium	Adjusted Expected Incurred Claims	Historic Data Incurred Claims	
Original Pricing	1988	0%	-	-	-	
	1989	0%	-	-	-	
	1990	0%	-	-	-	
	1991	0%	-	-	-	
	1992	0%	-	-	-	
	1993	0%	-	-	-	
	1994	0%	-	-	-	
	1995	0%	-	-	-	
	1996	0%	-	-	-	
	1997	0%	-	-	-	
	1998	0%	-	-	-	
	1999	0%	-	-	-	
	2000	0%	-	-	-	
	2001	0%		2,176	-	-
	2002	0%		2,176	-	-
	2003	0%		2,176	-	-
	2004	0%		2,176	-	-
	2005	0%		2,176	-	-
	2006	0%		2,176	-	-
	2007	0%		9,945	-	-
2008	0%		13,161	-	-	
2009	0%		14,851	-	-	
2010	0%		25,165	-	-	
2011	0%		7,516,698	35,973	119,960	
2012	1%		24,824,218	288,871	-	
2013	2%		28,407,601	597,129	9,812	
2014	3%		29,187,692	931,702	323,222	
2015	5%		28,763,111	1,312,669	576,514	
2016 RI	2016			1,618,626	1,294,894	
	2017			2,001,144	2,471,300	
	2018			2,494,209	2,617,590	
2019 RI	2019			3,800,786	4,087,638	
	2020			4,523,944	3,154,677	
	2021			5,437,941	3,516,729	
Values as of 12/31/2021 (discounted at maximum statutory valuation rates)						
Past :				26,008,038	> 20,356,356	

Minimum (Accum Value of Past Incurred Claims,
Accum Value of Adjusted Expected Incurred Claims) = 20,356,356

The lesser of actual and expected past claims, \$20,356,356, is used in demonstrating compliance with the minimum loss ratio in Exhibit 1

