

**Continental Casualty Company (“CCC”)  
Actuarial Memorandum  
In Support of a Premium Rate Increase Request  
Maryland**

The following individual long term care policy forms subject to this rate increase request were originally issued nationwide from 1990 to 1999:

Product Portfolio	Issue Date Range	Policy Form
LTC 1	1990 to 1998	P1-15203-A19
		P1-16356-A19
Premier/Classic	1993 to 1999	P1-18876-A19
		P1-18878-A19

## 1. Purpose and Justification of Filing

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The purpose of this memorandum is to provide actuarial information supporting CCC’s request for a rate increase for the above-listed policy forms. The rate increase request varies by benefit period and automatic increase benefit (AIB) rider as follows:

LTC1	Policies with AIB Rider	Policies without AIB Rider
Unlimited Lifetime Max Benefits	68.5%	0.0%
Non-Lifetime Max Benefits	0.0%	0.0%

Premier/Classic	Policies with AIB Rider	Policies without AIB Rider
Unlimited Lifetime Max Benefits	71.0%	0.0%
Non-Lifetime Max Benefits	15.9%	0.0%

Please see the Supplement to Rate Sheet for details on the implementation schedule.

This rate increase is requested in order to establish premium rates that are reasonable in relation to benefits based on actual historical experience and best-estimate projections for these forms. This rate filing is not intended to be used for other purposes.

Upon approval of this rate revision, CCC will communicate to insureds their options to reduce the impact of the rate increase. These options may include increasing the elimination period, reducing the lifetime maximum, reducing the daily benefit or eliminating optional riders.

Because the requested rate increase applies to policies with an AIB rider, insureds with an AIB rider who choose to drop it (i.e. Freeze and Drop) will:

- Not be subject to the AIB rate increase;
- Retain their inflated benefits as of the effective date of the coverage change; and
- Be charged an original issue age premium based on the original non-inflated benefits.

Available options will depend upon the insured's current coverage levels, benefit options available under their specific policy form, and any statutory minimum benefit levels in your state.

In addition, the Company is making a number of alternative options available for all insureds in conjunction with this rate increase. The first option provides an Increased Contingent Non-Forfeiture ("ICNF") benefit upon lapse. If this benefit is elected by the insured, the insured will not have to pay prospective premium, and their remaining benefit pool amount will equate to 150% of lifetime premiums paid, capped at current remaining lifetime benefits.

The second option that is being offered to insureds is the "Surrender Option". If this option is elected by the insured, the insured will surrender their policy in return for a one-time cash payment from the Company. The amount of the one-time cash surrender payment is equal to the unisex-adjusted statutory active life reserve held for the specific insured.

Both of the above alternative options will be offered to all insureds in your state (those with and without AIB riders), regardless of whether or not they receive a rate increase, in order to ensure fairness within the product portfolio. If a policy lapses due to non-payment of premiums without notifying the Company of the insured's intention to elect any of the above options, the insured's coverage will default to a standard 100% CNF benefit.

Please note:

- The requested rate increase amount is less than the amount CCC can justify; and
- CCC will continue to monitor the experience of this block and will react accordingly to experience development.

## **2. Description of Benefits**

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All of the forms are guaranteed renewable individual long term care policies sold through non-captive agents. Additional details for each product portfolio are shown below.

***LTC 1 (P1-15203-Series, P1-16356-Series, P1-16928-Series, P1-16944-Series)***

- P1-15203-Series pays for care in a long term care facility when either medically necessary or due to the inability to perform two or more activities of daily living or due to cognitive impairment. The policy does not require a prior hospitalization stay to qualify for benefits. The long term care daily benefit amount is paid for each day of eligible confinement during a period of care that occurs after the elimination period and during the benefit period. The benefit periods offered were one year (for ages 80-84), two years, four years, six years or unlimited. The policy does not have an aggregate lifetime maximum but benefit periods can fully restore subject to the conditions listed in the policy. The policy includes a waiver of premium benefit, a bed reservation benefit and an alternate plan of care benefit.
- *Optional Benefits:* Optional benefit riders offered: home health care rider and automatic increase rider.
- P1-16356-Series is identical to P1-15203-Series except that it provides a return of premium benefit.
- P1-16928-Series is a state variation of P1-15203-Series but provides for nursing home only benefits and P1-16944-Series is identical to P1-16928-Series except that it provides a return of premium benefit.

***Premier/Classic (P1-18215-Series, P1-18220-Series, P1-18876-Series, P1-18878-Series)***

- P1-18215-Series and P1-18220-Series: These forms provide long term care and home health care benefits. Benefits are limited to the policy's lifetime maximum, which is equal to the following multipliers times the daily benefit amount: 365x (ages 80-84), 730x, 1,460x, or unlimited. Benefit eligibility requires inability to perform two or more activities of daily living or due to cognitive impairment.
- *Long Term Care Benefits:* This policy pays up to the long term care daily benefit amount, as shown on insured's policy schedule, for each day of long term care confinement limited to the benefit lifetime maximum.
- *Home Health Care Benefits:* Pays 100% of the expenses incurred each day for therapist or nurse, 80% of the expenses incurred for home health aide, medical social worker or homemaker and 80% of expenses incurred each day of care for adult day care or alternate care facility. The total benefits payable each day for home health care benefits is limited to the daily benefit amount shown on the insured's schedule (either 100% or 50% of the long term care daily benefit amount, selected at issue) and subject to the policy's benefit lifetime maximum.
- *Other benefits:* The policy includes a bed reservation, waiver of premium and an alternate plan of care benefit.
- *Optional benefits:* Automatic increase rider and benefit eligibility amendment rider.

- P1-18220-Series is identical to P1-18215-Series except that it provides a return of premium benefit.
- P1-18876-Series & P1-18878-Series: These forms provide long term care and home health care benefits with separate lifetime limits.
- *Long Term Care Benefits*: This policy pays the long term care daily benefit amount, as shown on the insured's policy schedule, for each day of long term care confinement limited to the benefit period selected. The insured could select two years, four years, six years, and unlimited for a benefit period if their issue age was 18-79 and one or two years if ages were 80-84. The policy includes a bed reservation benefit.
- *Home Health Care Benefits*: This policy has an optional home & community-based care benefit rider that pays 100% of the expenses incurred each day for therapist or nurse, 80% of the expenses incurred for home health aide, medical social worker or homemaker and 80% of expenses incurred each day of care for adult day care or alternate care facility. The total benefits payable each day for home health care benefits is limited to the daily home health care benefit amount shown on the insured's schedule, limited to the benefit period selected for the home health care rider. The benefit periods available were two years, five years, and unlimited for issue ages 18-79 and two years for issue ages 80-84.
- *Optional benefits*: Besides the home health care rider noted above, the policy offered optional automatic increase riders.
- *Optional benefits*: Besides the home health care rider noted above, the policy offered optional automatic increase riders.
- Policy P1-18878-Series is identical to P1-18876-Series except that it provides a return of premium benefit.

### **3. Renewability**

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These forms provide the insured guaranteed renewable individual long term care coverage.

### **4. Applicability of Rate Increase**

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This filing applies to in-force insureds only, as these forms are no longer being marketed. The premium change will apply to the base forms and all riders associated with the base forms for policies.

### **5. Experience Study and Actuarial Assumptions**

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This section provides a summary of the results of the annual experience study, along with the resulting assumptions utilized in the projection model. The liability assumptions below are consistent with the

assumptions being used in the Company's reserve adequacy and asset adequacy testing. It is noted that some actual to expected ("A/E") analysis tables in this section have A/E ratios other than 100%. In order to reduce year over year volatility, if A/E results from the experience study are within an internal target range, the assumption will not be revised from the prior year's assumption.

## **Morbidity Overview**

CNA has a sizeable block of LTC policies with a robust and credible amount of claims experience. As such, the 2020 morbidity study used experience from 2009 to 2019 to develop frequency and severity (claim utilization, disabled life mortality, and claim recovery) assumptions. CNA assesses morbidity experience separately for the Individual Long-Term Care (ILTC), State Farm (SF), and Group Long-Term Care (GLTC) blocks of business. Furthermore, any variation in assumption by different policyholder characteristics (i.e. gender) is based on company experience where meaningful variation has existed and is expected to continue in the future.

Assumptions are set at a granular level to provide the best possible fit to experience. A dynamic validation is then performed to ensure that assumptions provide a reasonable fit in the aggregate. The dynamic validation was performed by modeling best-estimate assumptions with inforce liability data as of December 31, 2018 to see how well the assumptions would replicate actual historical experience.

For policyholders aged 85 and older, CNA has approximately over 350K exposure years and over 35K claims. For older attained ages with less credible data, CNA has set incidence, claim recovery and utilization assumptions using age bands where assumptions do not vary beyond a certain age threshold. Disabled life mortality varies by attained age and is based on a 2012 IAM mortality table for attained ages 0 to 100 and based on the maximum of 2000 Annuity and 2012 IAM for attained ages 100 and older. Impairment factors by attained age are applied to this table to account for the higher mortality rates associated with disabled lives compared to healthy lives.

Morbidity experience can vary from carrier to carrier based on policy language, claim adjudication practices and rate increase programs undertaken. None of these differences are captured in industry studies. Given the fact that CNA has credible and robust claims experience, assumptions were set entirely based on company experience and were not directly compared to industry data.

The ILTC block is past its peak number of claims so the number of new incurred claims has been slowing. GLTC is a younger block and the number of new incurred claims is expected to continue to increase over the next twenty to thirty years. Also, within the study period mentioned above, CNA has implemented ILTC and GLTC rate increases on both ILTC and GLTC, which has temporarily increased incidence due to anti-selection.

The amount of new incurred claim dollars has increased over the recent past due to increases in the cost of care. Incurred claim dollars are expected to continue to increase for both ILTC and GLTC over the near to mid-term.

CNA has granular assumptions which allows for variation in lapse rates. One variation that is worth noting is the assumption that lapse rates are expected to be lower for policies with richer benefits (i.e. policies with longer benefit periods and with contractual inflation). Therefore, as the block ages, there is an expectation that the policies that persist will naturally have longer lengths of stay with higher severity as the mix shift changes over time. Also assumed in the claim utilization assumption is an expectation of rising cost of care inflation which will also lead to higher severity of claims over time.

## Claim Incidence

The frequency of claim is the probability that a healthy insured will go into disabled status, also known as 'claim incidence'. The final incidence rate that gets modeled is comprised of a base incidence table, adjustment factors based on policy features and demographics, and adjustments for policyholder behavior to rate actions.

### ***Base Incidence Actual to Expected Analysis***

The below table summarizes the results of the experience study for ILTC base incidence rates, which includes experience over the past ten years. These tables show policy experience prior to any rate increases in order to avoid distortion caused by temporary anti-selection, which is layered on separately. This explains the shrinking exposure years over time. Something of note is the Individual Long-Term Care block has undergone significant rate action initiatives over the recent past, causing limited credibility that may not be representative of nationwide experience. This experience was factored into the assumption setting process but weighted according to the exposures shown below:

Best-Estimate Incidence A/E Results Individual Long Term Care						
Calendar Year	Exposures (Years)	Actual Claims	Expected Claims	Actual Incidence Rate	Expected Incidence Rate	Actual / Expected
2010	243,073	5,206	5,503	2.14%	2.26%	95%
2011	233,060	5,325	5,750	2.28%	2.47%	93%
2012	222,734	5,666	6,075	2.54%	2.73%	93%
2013	212,130	6,017	6,196	2.84%	2.92%	97%
2014	200,678	6,395	6,343	3.19%	3.16%	101%
2015	189,684	6,923	6,396	3.65%	3.37%	108%
2016	178,602	6,590	6,395	3.69%	3.58%	103%
2017	168,277	6,858	6,509	4.08%	3.87%	105%
2018	158,506	6,735	6,480	4.25%	4.09%	104%
2019	150,028	6,522	6,617	4.35%	4.41%	99%
<b>Total</b>	<b>1,956,772</b>	<b>62,237</b>	<b>62,264</b>	<b>3.18%</b>	<b>3.18%</b>	<b>100%</b>

### ***Base Incidence Assumption***

The base incidence rates are single-dimensional tables that vary by attained age. These base incidence tables vary by the following:

- Whether the policy covers comprehensive or facility only benefits
- The situs of the claim (Nursing Home, Home Health Care, Assisted Living Facility)
- Gender

A sample table is shown below:

**Plan Type:** Comprehensive  
**Situs:** Assisted Living Facility  
**Gender:** Male

Attained Age	Annual Incidence Rate (%)
44 and Prior	0.0009%
45	0.0011%
46	0.0013%
47	0.0015%
...	...
55	0.0057%
56	0.0067%
57	0.0079%
...	...
65	0.0295%
66	0.0348%
67	0.0410%
...	...
75	0.1655%
76	0.1976%
77	0.2358%
...	...
85	0.9667%
86	1.1525%
87	1.3738%
88	0.9633%
89	1.6593%
90	1.8232%
91	1.4466%
92	2.1559%
...	...
95	2.7720%
96 to 120	3.0142%

### ***Incidence Rate Adjustment Factors***

There are a number of incidence rate adjustment factors that are applied to adjust the base incidence tables for various policy features. The annual experience study reviews these adjustment factors and provides updates as needed. The incidence adjustment factors are shown below:

<b>Category</b>	<b>Variable/Benefit Feature</b>	<b>Adjustment Factor</b>
Underwriting Class	Preferred	1.0000
	Standard	1.3082
	Substandard	1.3622
Elimination Period	0 Days	1.0000
	1-89 Days	0.8068
	90+ Days	0.8068
Benefit Period	Lifetime	1.2418
	Non-Lifetime	1.0000
Tax Status	Tax Qualified	0.8366
	Non-Tax Qualified	1.0000

### ***Temporary Anti-Selection Overview***

As part of the company's annual experience study, the relationship between premium rate actions and incidence rates were developed into an assumption set. At any time, there is a subset of policyholders that already qualify for their long term care benefits, but have not utilized the policy. When a rate increase notification is received, some of these policyholders will go on claim to avoid paying the increased premium, since their premium rates will be waived. This phenomenon is known as anti-selection or 'shock morbidity'. We are using a durational impact of 1 year and severity of 10% for ILTC.

### ***Future Incidence Improvement (i.e. Morbidity Improvement)***

No future incidence improvement is assumed.

### ***Model Calibration***

The morbidity assumptions are intended to reflect the best-estimate of the long term. Long-Term Care policies are complex and have multiple decrements. Assumptions are developed independently and when combined in the model, they do not always produce results that seem reasonable. Model calibration is performed when necessary to fit the model to the long term view.



A dynamic validation was performed by modeling our best-estimate assumptions with inforce liability data as of December 31, 2018 to see how well the assumptions would replicate actual historical experience in the near term. This analysis was performed separately for ILTC and GLTC. Based on how well the model ‘fits’ actual claims experience, additional incidence calibration factors may be applied. A temporary ILTC calibration factor of 1.05 starting in 2019 and linearly grading down to 1.00 by 2025 was selected to recalibrate experience such that the model fits better in the near term.

Calendar Year	Calibration Factors
2018	1.0583
2019	1.0500
2020	1.0417
2021	1.0333
2022	1.0250
2023	1.0167
2024	1.0083
2025+	1.0000

## Claim Severity

In the projection system, the severity of claim is the associated length and cost of a claim once an insured becomes disabled (or is already disabled). The severity of a claim is driven by three key assumptions:

- Claim Recovery
- Benefit Utilization
- Disabled Life Mortality

A further breakdown of these three components is described below.

### ***Recovery Overview***

Once a policyholder is on claim, there is an associated probability that the policyholder will recover back in to a ‘healthy’ status prior to death or exhausting benefits. This is the recovery rate assumption in the projection model.

### ***Recovery Actual to Expected Analysis***

The below table summarizes the results of the experience study for ILTC recovery rates, which includes experience over the past seven years:

#### Best-Estimate Recovery A/E Results Individual Long Term Care

Calendar Year	Actuals			Current Claims			Future Claims		
	Exposures (Years)	Actual Recoveries	Actual Recovery Rate	Expected Recoveries	Expected Recovery Rate	Actual / Expected	Expected Recoveries	Expected Recovery Rate	Actual / Expected
2015	13,645	1,437	10.5%	1,496	11.0%	96%	1,483	10.9%	97%
2016	14,228	1,498	10.5%	1,489	10.5%	101%	1,473	10.4%	102%
2017	14,699	1,441	9.8%	1,451	9.9%	99%	1,445	9.8%	100%
2018	15,003	1,415	9.4%	1,426	9.5%	99%	1,431	9.5%	99%
2019	15,113	1,519	10.1%	1,415	9.4%	107%	1,398	9.3%	109%
<b>Total</b>	<b>72,688</b>	<b>7,310</b>	<b>10.1%</b>	<b>7,277</b>	<b>10.0%</b>	<b>101%</b>	<b>7,230</b>	<b>9.9%</b>	<b>101%</b>

**Recovery Assumption**

The recovery tables are two-dimensional that vary by age of disability and disability duration. The first five years of the tables contain monthly rates and are annual thereafter. The recovery tables vary by the following:

- Benefit period (lifetime vs non-lifetime)
- Gender
- Presence of a restoration of benefits rider
- The situs of the claim (Nursing Home, Home Health Care, Assisted Living Facility)
- Diagnosis of the claim (for insureds currently on claim)
- Tax-qualified status (tax-qualified, not tax-qualified)
- Eliminated period (0 day, 1-89 day, 90+ day)

Insureds that are currently in claim status have a known situs of care, so the recovery rates will be different than a policy currently in healthy status, since the future claim situs is unknown.

A sample table is shown below for sample ages of disablement (rates shown are on a monthly basis):

**Policyholder Status:** Healthy  
**Benefit Period:** Lifetime  
**Gender:** Female  
**Restoration of Benefits:** No  
**Situs:** Nursing Home (original, since policy is healthy)  
**Tax-Qualified Status:** Not tax-qualified  
**Elimination Period:** 1 to 89 days

Disability Month	Disablement Age			
	65	75	85	95
1	3.35%	2.36%	1.65%	1.40%
2	6.71%	4.71%	3.30%	2.80%
3	4.96%	3.49%	2.44%	2.07%
4	3.70%	2.60%	1.82%	1.54%

5	2.86%	2.01%	1.40%	1.19%
6	1.75%	1.23%	0.86%	0.73%
7	1.15%	0.81%	0.56%	0.48%
8	0.73%	0.51%	0.36%	0.30%
9	0.52%	0.37%	0.26%	0.22%
10	0.47%	0.33%	0.23%	0.20%
11	0.43%	0.30%	0.21%	0.18%
12	0.40%	0.28%	0.19%	0.17%
...	...	...	...	...

### **Utilization Overview**

The utilization assumption in the model for expense reimbursement policies represent the amounts, or severity, of paid claims and include components for cost of care, coverage available and the intensity of care (“health trend”). The available benefit is also considered by capping paid claims at the daily benefit amount.

Expense reimbursement refers to policies that are reimbursed up to the maximum daily benefit. They are considered separately from indemnity policies because indemnity policies pay the full maximum daily benefit. Expense reimbursement claim amounts are affected by cost of care inflation, intensity of care (referred to as “health trend”), and the amount of initial coverage purchased.

Health trends represent the intensity of care needed for claimants. Health trend is the ratio of inflation-adjusted paid claims divided by initial available benefits:

$$\text{Health Trend} = \frac{\text{Paid Claim}}{(1 + \text{CostOfCare Inflation})^{(\text{Experience Year} - \text{Issue Year})} \text{Initial Available Benefits}}$$

Indemnity policies have separate utilization assumptions from expense reimbursement policies because they pay their full available benefits and are not dependent on cost or intensity of care. Although indemnity policies pay the full maximum daily benefit, utilization rates are still below 100% because insureds are not in facilities 100% of the time. For example, if an insured is only in a facility 28 out of the 30 days in each month, then they would have a utilization rate equal to 28/30 = 93%. This is because benefit periods are based on service days and not strictly calendar days.

The utilization cost of care assumption is based on statutory valuation assumptions.

### **Utilization Actual to Expected Analysis**

The below table summarizes the results of the experience study for ILTC utilization rates, which includes experience over the past seven years:

Best-Estimate Utilization A/E Results – All Policies Individual Long Term Care												
Calendar Year	Current Claims						Future Claims					
	Maximum Available Benefit (\$millions)	Actual Paid Claims (\$millions)	Actual Utilization Rate	Expected Paid Claims (\$millions)	Expected Utilization Rate	Actual / Expected	Maximum Available Benefit (\$millions)	Actual Paid Claims (\$millions)	Actual Utilization Rate	Expected Paid Claims (\$millions)	Expected Utilization Rate	Actual / Expected
2013	675	471	70%	461	68%	102%	675	471	70%	474	70%	99%
2014	748	518	69%	508	68%	102%	748	518	69%	523	70%	99%
2015	824	562	68%	552	67%	102%	824	652	68%	567	69%	99%
2016	909	623	69%	607	67%	103%	909	623	69%	623	69%	100%
2017	978	666	68%	649	66%	103%	978	666	68%	667	68%	100%
2018	1,052	707	67%	692	66%	102%	1,052	707	67%	712	68%	99%
2019	1,117	747	67%	732	66%	102%	1,117	747	67%	750	67%	100%
<b>Total</b>	<b>6,302</b>	<b>4,294</b>	<b>68%</b>	<b>4,201</b>	<b>67%</b>	<b>102%</b>	<b>6,302</b>	<b>4,294</b>	<b>68%</b>	<b>4,316</b>	<b>68%</b>	<b>99%</b>

**Utilization Assumption**

The health trend component of utilization tables are two-dimensional that vary by age of disability and disability duration. The first five years of the tables contain monthly rates and are annual thereafter. These tables vary by the following:

- Benefit Period (lifetime vs non-lifetime)
- Inflation type (simple, compound, none)
- Home health care percentage (0%, 1%-50%, 50%-75%, 75%+)
- The situs of the claim (Nursing Home, Home Health Care, Assisted Living Facility)
- Diagnosis of the claim (for insureds currently on claim)

In addition, the situs varies on whether the policyholder is healthy (original situs) versus disabled (current situs). A sample health trend table is shown below for sample ages of disablement (rates shown are on a monthly basis):

**Insured Status:** Disabled  
**Benefit Period:** Non-Lifetime  
**Inflation Type:** Compound  
**Home Health Care Percentage:** N/A (since situs is not home health care)  
**Situs:** Assisted Living Facility (current, since policy is disabled)  
**Payment Type:** Reimbursement  
**Diagnosis:** Other

Disability Month	Disablement Age			
	65	75	85	95
1	99%	91%	88%	90%

2	60%	66%	72%	74%
3	69%	75%	80%	85%
4	63%	65%	72%	77%
5	70%	72%	79%	82%
6	71%	75%	79%	82%
7	76%	76%	81%	85%
8	76%	77%	82%	85%
9	76%	77%	81%	83%
10	79%	77%	82%	85%
11	80%	80%	83%	86%
12	79%	80%	83%	86%
...	...	...	...	...

Cost of care tables are two-dimensional vectors that vary by calendar year and inflation type for reimbursement policies. The average cost of care is summarized below:

Cost of Care - ILTC		
Inflation Type	Historical Rate	Ultimate Rate
None	0.12%	0.53%
Simple	2.52%	2.93%
Compound	3.97%	4.38%

### ***Disabled Life Mortality Overview***

Once an insured is on claim, there is an associated probability that the insured will decrement due to death, which influences the overall length of a claim. Generally, the probability of death from a currently disabled insured is greater than the probability associated with a currently healthy insured, so separate assumptions are developed and modeled.

### ***Disabled Life Mortality Actual to Expected Analysis***

The below table summarizes the results of the experience study for ILTC disabled mortality rates, which includes experience over the past five years:

Best-Estimate Disabled Mortality A/E Results Individual Long Term Care									
Calendar Year	Actuals			Current Claims			Future Claims		
	Exposures	Disabled Deaths	Disabled Mortality Rate	Expected Disabled Deaths	Expected Disabled Mortality Rate	Actual / Expected	Expected Disabled Deaths	Expected Disabled Mortality Rate	Actual / Expected
2015	13,645	4,172	30.6%	4,008	29.4%	104%	4,013	29.4%	104%

2016	14,228	4,183	29.4%	4,196	29.5%	100%	4,197	29.5%	100%
2017	14,699	4,376	29.8%	4,359	29.7	100%	4,363	29.7%	100%
2018	15,003	4,431	29.5%	4,460	29.7%	99%	4,478	29.8%	99%
2019	15,113	4,416	29.2%	4,531	30.0%	97%	4,544	30.0%	97%
<b>Total</b>	<b>72,688</b>	<b>21,578</b>	<b>29.7%</b>	<b>21,554</b>	<b>29.7%</b>	<b>100%</b>	<b>21,595</b>	<b>29.7%</b>	<b>100%</b>

### ***Disabled Life Mortality Assumption***

The disabled life mortality rates are two-dimensional tables that vary by age of disability and disability duration. Similar to the other severity assumptions, the first five years of the tables contain monthly rates and are annual thereafter. The disabled life mortality tables vary by the following:

- Benefit period (lifetime vs non-lifetime)
- The situs of the claim (Nursing Home, Home Health Care, Assisted Living Facility)
- Gender
- Diagnosis of the claim (for insureds currently on claim)

Insureds that are currently in claim status have a known situs of care, so the disabled life mortality rates will be different than a policy currently in healthy status, since the future claim situs is unknown.

A sample table is shown below for sample ages of disablement (rates shown are on a monthly basis):

**Insured Status:** Healthy

**Benefit Period:** Non-Lifetime

**Situs:** Nursing Home (original, since policy is healthy)

**Gender:** Male

**Diagnosis:** N/A (since status is healthy)

Disability Month	Disablement Age			
	65	75	85	95
1	2.14%	3.15%	3.58%	4.25%
2	2.84%	4.17%	4.74%	5.62%
3	3.07%	4.50%	5.11%	6.07%
4	3.46%	5.07%	5.76%	6.84%
5	3.07%	4.51%	5.12%	6.08%
6	2.68%	3.93%	4.47%	5.31%
7-12	2.10%	3.008%	3.50%	4.16%
13-18	1.80%	2.65%	3.05%	3.77%
19-24	1.82%	2.68%	3.08%	3.81%
25-36	2.07%	3.03%	3.53%	4.61%

37-48	2.23%	3.19%	3.76%	5.22%
49-60	2.47%	3.41%	4.06%	6.04%
...	...	...	...	...

### Transitions of Situs

Following the annual claim reserve review, adjustments were made to the assumptions to account for transitions of situs. The result of these adjustments produced smoother claim development and a better fit in the dynamic validation. The following tables summarize these adjustments.

Claim Closures (Recovery & Disabled Life Mortality)									
Product	Gender	Benefit Period	1-12	13-24	25-36	37-48	49-60	61-72	>72
ILTC	Female	Unlimited	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		Limited	1.00	1.00	0.80	0.80	0.90	1.00	1.00
	Male	Unlimited	1.00	1.00	1.00	1.00	1.00	1.00	0.75
		Limited	1.00	1.00	0.80	0.80	0.90	1.00	0.75

Utilization									
Product	Payment Type	Inflation Type	1-12	13-24	25-36	37-48	49-60	61-72	>72
ILTC	Exp. Inc.	C	1.20	1.20	1.20	1.20	1.20	1.20	1.20
		S	1.20	1.20	1.20	1.20	1.20	1.20	1.20
		N	1.20	1.20	1.20	1.20	1.20	1.20	1.20
	Indemnity	C	1.05	1.05	1.05	1.05	1.05	1.05	1.05
		S	1.05	1.05	1.05	1.05	1.05	1.05	1.05
		N	1.05	1.05	1.05	1.05	1.05	1.05	1.05

### Persistency

In the projection system, the persistency assumptions relate to the probability that policyholders not on claim will lapse or die. Policyholder reduced benefit options are considered part of the persistency assumption and are modeled as partial lapses in the projection system. The persistency of an insured is driven by following key assumptions:

- Voluntary Lapse
- Shock Lapse and Reduced Benefit Option (“RBO”)
- Shock Mortality
- Healthy Life Mortality
- Healthy Life Mortality Improvement

A further breakdown of these components is described below.

### ***Voluntary Lapse Overview***

The voluntary lapse assumption reflects the probability associated with an insured voluntarily canceling their policy. The voluntary lapse rates differ from shock lapse rates in that the policy cancelation is not due to a rate increase notification.

### ***Voluntary Lapse Actual to Expected Analysis***

The below table summarizes the results of the experience study for ILTC voluntary lapse rates, which includes experience over the past seven years:

<b>Best-Estimate Base Voluntary Lapse A/E Results Individual Long Term Care</b>						
<b>Calendar Year</b>	<b>Exposures (Years)</b>	<b>Actual Lapse</b>	<b>Expected Lapse</b>	<b>Actual Lapse Rate</b>	<b>Expected Lapse Rate</b>	<b>Actual / Expected</b>
2013	206,775	1,879	1,678	0.91%	0.75%	112%
2014	193,954	1,703	1,458	0.88%	0.70%	117%
2015	182,172	1,403	1,283	0.77%	0.67%	109%
2016	170,825	1,250	1,145	0.73%	0.65%	109%
2017	160,433	1,045	1,039	0.65%	0.64%	101%
2018	150,258	1,059	965	0.71%	0.65%	110%
2019	140,168	857	906	0.61%	0.65%	95%
<b>Total</b>	<b>1,246,574</b>	<b>9,197</b>	<b>8,474</b>	<b>0.76%</b>	<b>0.70%</b>	<b>109%</b>

### ***Voluntary Lapse Assumption***

The voluntary lapse tables are one-dimensional varying by policy duration. The voluntary lapse assumptions vary by the following:

- Benefit Period (lifetime vs non-lifetime)
- Inflation Type (simple, compound, none)
- Product
- Limited Pay Adjustment

A sample voluntary lapse table is shown below:

**Product: ILTC**

**Benefit Period: Lifetime**

**Inflation Type: None**



Policy Duration	Base Voluntary Lapse Rate
1	7.45%
2	4.45%
3	3.45%
4	2.95%
5	2.55%
6	2.20%
7	1.90%
8	1.65%
9	1.45%
10	1.25%
11	1.05%
12	0.95%
13	0.90%
14	0.85%
15	0.80%
16+	0.75%

***Shock Lapse and Reduced Benefit Option***

The shock lapse and RBO assumptions are modeled as an increase in lapse rates in response to a rate increase. Shock lapse and RBO assumptions are determined by calculating the lapse rates in excess of base lapse rates during the years when a premium rate action occurs.

The assumed rates for each of these components are outlined in the below table for the ILTC product:

Rate Increase	Total Additional Lapse % from Shock and RBO*
0%	0.00%
5%	0.47%
10%	1.18%
15%	1.87%
20%	2.56%
25%	3.24%
30%	3.90%
35%	4.56%
40%	5.21%
45%	5.84%
50%	6.47%
55%	7.09%
60%	7.69%

65%	8.29%
70%	8.88%
75%	9.46%
80%	10.02%
85%	10.37%
90%	10.72%
95%	11.07%
100%	11.42%
...	...

### ***Healthy Life Mortality Overview***

The healthy life mortality assumption is the probability of death associated with currently healthy insureds.

### ***Healthy Life Mortality Actual to Expected Analysis***

The below table summarizes the results of the experience study for ILTC healthy life mortality rates, which includes experience from 2013 to 2019:

<b>Best-Estimate Healthy Life Mortality A/E Results Individual Long Term Care</b>						
<b>Calendar Year</b>	<b>Exposures (Years)</b>	<b>Actual Death</b>	<b>Expected Death</b>	<b>Actual Death Rate</b>	<b>Expected Death Rate</b>	<b>Actual / Expected</b>
2013	207,435	4,559	4,751	2.20%	2.29%	96%
2014	197,707	4,787	4,663	2.46%	2.39%	103%
2015	182,998	4,194	4,102	2.29%	2.24%	102%
2016	171,680	3,918	3,990	2.28%	2.32%	98%
2017	161,263	3,558	3,680	2.21%	2.28%	97%
2018	151,054	3,700	3,369	2.45%	2.23%	110%
2019	140,904	3,165	3,070	2.25%	2.18%	103%
<b>Total</b>	<b>1,210,040</b>	<b>27,881</b>	<b>27,624</b>	<b>2.30%</b>	<b>2.28%</b>	<b>101%</b>

### ***Healthy Life Mortality Assumption***

The base table for the healthy life mortality assumption is the 2012 IAM table, with additional multipliers based on company experience. There are also adjustments at higher attained ages, due to lack of credibility. At higher ages, the assumptions grade their credibility weighting from 100% of the best-estimate assumption at age 95, to 100% of the 2012 IAM tables at ages 105 and later. These base tables vary by gender and attained age. The additional multipliers to these base tables based on CCC's experience are as follows:

Category	Variable/Benefit Feature	Adjustment Factors
Attained Age	0-59	68%
	60-64	61%
	65-69	60%
	70-74	114%
	75-79	107%
	80-84	93%
	85-89	83%
	90-94	91%
Gender	Male	100%
	Female	90%
Underwriting Class	Preferred	85%
	Standard	131%
	Substandard	160%
Calendar Year	2014 and Prior	1.00
	2015	0.90
	2016	0.90
	2017	0.85
	2018	0.80
	2019	0.75
	2020	0.70
	2021	0.70
	2022	0.70
	2023	0.75
	2024	0.80
	2025	0.85
	2026	0.90
	2027	0.95
	2028+	1.00

***Healthy Life Mortality Improvement***

A healthy life mortality improvement factor is applied to the base healthy mortality table to reflect studies that examine the improvement of population mortality over time, based on improvement

scale G2. The healthy life mortality improvement varies by gender and attained age with improvement beginning 1/1/2017 for 10 years. An example is shown below for reference:

**Gender:** Female

Attained Age	Annualized Improvement
<=50	1.00%
50	1.00%
60	1.30%
70	1.30%
80	1.30%
90	0.60%
100	0.20%
105	0.00%

## 6. Discount Rate

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The inforce count-weighted average maximum statutory valuation interest rate for contract reserves is used to accumulate past actual experience and discount future expectations. The rate varies by product as follows:

Product Portfolio	Interest Rate
LTC1	5.17%
Premier/Classic	4.64%

## 7. Expenses

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This filing is based on loss ratios and expense levels have not been considered. Commissions are not paid on rate increase premiums.

## 8. Marketing Method

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These policies were sold directly through non-captive agents.

## 9. Underwriting Description

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These policy forms were fully underwritten with the use of various tools in addition to the application, which may have included medical records, an attending physician's statement, telephone interviews, and/or face-to-face assessments.

## 10. Premiums

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Premiums are unisex and payable for life unless the insured selected a limited pay option. The premiums may vary by issue age, elimination period, benefit period / lifetime maximum, initial daily benefit amount, level of home health care coverage, inflation type, premium mode, underwriting class, marital status, and the selection of any other options or riders.

## 11. Modal Premium Factors

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The following modal factors remain unchanged and are applied to the annual premium to obtain the modal premium.

Payment Mode	Modal Factor	Nationwide Premium Distribution at Dec. 31, 2020
Annual	1.000	61.2%
Semi-Annual	0.520	8.3%
Quarterly	0.270	12.0%
Monthly	0.090	18.6%

## 12. Issue Age Range

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Issue ages range from 18 to 84.

## 13. Area Factors

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Area factors are not used for these policy forms.

## 14. Average Annualized Premium

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The average annualized premium for the policy forms subject to the rate increase request, both before and after the impact of the requested rate increase, is included in Exhibit 1.

## 15. Number of Insureds

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The current number of insureds as of December 31, 2020 can be found in Exhibit 1.

## 16. Distribution of Business

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The historical experience reflects the actual distribution of insureds during the experience period. The current distribution of business as of December 31, 2020 was used to project future experience. Exhibit 2 contains the distribution of the inforce insureds by key demographic and benefit characteristics.

## **17. Claim Liability and Reserves**

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Active life reserves have not been used in this rate increase analysis. Claim reserves as of December 31, 2020 have been discounted to the incurral date of each respective claim and included in historical incurred claims. Incurred but not reported reserve (“IBNR”) balances and terminated but not reported reserve (“TBNR”) balances as of December 31, 2020 have been allocated to a calendar year of incurral and included in historical incurred claims.

## **18. Trend Assumptions**

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

## **19. Experience – Past and Future**

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Earned premiums and incurred claims, projected through 2079 are developed from a first-principles actuarial model representing actual contracts in-force as of December 31, 2020. The assumptions described in Section 5 are used to project earned premiums and incurred claims.

Waived premiums are not included as premiums nor claims in either the actual historical or the projected future experience.

Historical results reflect earned premium by calendar year with claims captured by incurral year. That is, incurred claims for a calendar year represent all payments through December 31, 2020 for a claim incurred in a particular calendar year plus any claim reserve held as of December 31, 2020. Incurred claims also include IBNR and TBNR held as of December 31, 2020.

Exhibit 3 presents nationwide experience as described in Section 19 for all forms affected by this rate increase to ensure maximum credibility. Although we believe the State-specific data is not credible on its own, we are including State-specific experience through December 31, 2020 for reference in Exhibit 4.

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

A lifetime loss ratio as of December 31, 2020 is calculated as the sum of accumulated past experience and discounted future expectations using the nationwide inforce count-weighted average maximum statutory valuation interest rate for contract reserves.

## **20. History of Rate Adjustments**

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See Exhibit 1 for a history of prior rate adjustments in your state.

## **21. Ensuring No Cross-Subsidization Between States**

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We have ensured no state's rate increase approvals will subsidize other states' experience. Rate increase requests 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 rate increases from our nationwide premium data. We then reintroduce prior rate increases with the amount and timing based on your state's prior approvals (as referenced in Section 17). The current proposed rate increase(s) are then determined.

Although some states may have capped our previous inforce rate increase filings, it is the intention of CCC's management that subsequent filings will be submitted at a later date until an actuarially equivalent amount is achieved.

## 22. Requested Rate Increase and Demonstration of Satisfaction of Requirements

CCC is requesting a rate increase on the policy forms included in this filing, to be implemented over one year. The rate increase varies by benefit period and AIB rider as follows:

LTC1	Policies with AIB Rider	Policies without AIB Rider
Unlimited Lifetime Max Benefits	68.5%	0.0%
Non-Lifetime Max Benefits	0.0%	0.0%

Premier/Classic	Policies with AIB Rider	Policies without AIB Rider
Unlimited Lifetime Max Benefits	71.0%	0.0%
Non-Lifetime Max Benefits	15.9%	0.0%

Please see the Supplement to Rate Sheet for details on the implementation schedule.

Corresponding rate schedules reflecting the increase are included with this filing. Although this request is less than CCC can justify, we are limiting our rate increase request at this time. CCC will continue to monitor the experience of this block and take appropriate actions when necessary.

Upon approval of this rate revision, CCC will communicate to insureds their options to reduce the impact of the rate increase. These options may include increasing the elimination period, reducing the lifetime maximum, reducing the daily benefit or eliminating optional riders. Because the requested rate increase applies to policies with an AIB rider, insureds with an AIB rider who choose to drop it (i.e. Freeze and Drop) will:

- Not be subject to the AIB rate increase;
- Retain their inflated benefits as of the effective date of the coverage change; and
- Be charged an original issue age premium based on the original non-inflated benefits.

Available options will depend upon the insured's current coverage levels, benefit options available under their specific policy form, and any statutory minimum benefit levels in your state.

In addition, the Company is making a number of alternative options available for all insureds in conjunction with this rate increase. The first option provides an Increased Contingent Non-Forfeiture ("ICNF") benefit upon lapse. If this benefit is elected by the insured, the insured will not have to pay prospective premium, and their remaining benefit pool amount will equate to 150% of lifetime premiums paid, capped at current remaining lifetime benefits.

The second option that is being offered to insureds is the "Surrender Option". If this option is elected by the insured, the insured will surrender their policy in return for a one-time cash payment from the Company. The amount of the one-time cash surrender payment is equal to the unisex-adjusted statutory active life reserve held for the specific insured.

Both of the above alternative options will be offered to all insureds in your state, regardless of whether or not they receive a rate increase, in order to ensure fairness within the product portfolio. If a policy lapses due to non-payment of premiums without notifying the Company of the insured's intention to elect any of the above options, the insured's coverage will default to a standard 100% CNF benefit.

Note that the actual rates implemented may vary slightly from those filed due to implementation rounding algorithms.

Satisfaction of minimum required loss ratio requirements is demonstrated in Exhibit 1. This approach shows that with the requested rate increase, the expected lifetime loss ratio exceeds the minimum loss ratio requirement.

## **23. Proposed Effective Date**

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The rate increase will apply to policies on their next premium due date following a notification period at least as long as required by your state following approval. No insured will receive more than one increase in a 12 month period.

## **24. Actuarial Certification**

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I am an Associate of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Academy's qualification standards to render this actuarial opinion and am familiar with the filing requirements for long term care insurance premium and rate increases.

This memorandum has been prepared in conformity with all applicable Actuarial Standards of Practice ("ASOP"), including, but not limited to, the following:

- ASOP 7, "Analysis of Life, Health, or Property/Casualty Insurer Cash Flows";



- ASOP 8, “Regulatory Filings for Health Benefits, Accident and Health Insurance, and Entities Providing Health Benefits”;
- ASOP 18, “Long Term Care Insurance”;
- ASOP 23, “Data Quality”; and
- ASOP 41, “Actuarial Communications”.

I have relied upon policy and claim information extracts, as of December 31, 2020, which contain a seriatim listing of all insureds covered under CCC Long Term Care insurance contracts. I have also relied upon associated paid premium extracts providing details of payment dates and amounts. I have also relied upon associated paid claim extracts providing details by claim regarding payment dates, service dates, benefit types and payment amounts. This information was provided by CCC’s Long Term Care Operations team in partnership with our Third Party Administrator.

I have relied upon statutory reserves as of December 31, 2020, for Claims Reserves, Incurred but Not Reported reserves, and Terminated but Not Reported Reserves, provided by CCC’s Long Term Care Finance and Reserving team.

I have relied upon actuarial assumptions developed by CCC’s Long Term Care Projections and Experience Studies team, which develops assumptions primarily for asset and reserve adequacy analysis, under the direction of the opining actuary, John Munro, FSA, MAAA, who approved those assumptions in collaboration with other CCC Long Term Care actuaries, including Inforce Management actuaries. These assumptions present the actuary’s best judgement, as of December 31, 2020. We have reviewed these assumptions for reasonableness and consistency for use in this filing.

I hereby certify that, to the best of my knowledge and judgement, this rate filing is in compliance with the applicable laws and regulations of your state. In my opinion, the actuarial assumptions are appropriate and the rates are neither excessive nor unfairly discriminatory.



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December 8, 2021

**Date**

## 25. Exhibit Listing

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- Exhibit 1: State Specific Information
- Exhibit 2: Distribution of Inforce Insureds
- Exhibit 3: Nationwide Experience and Projections
- Exhibit 4: State-Specific Experience and Projections