



Mortality and Longevity

U.S. Individual Life COVID-19 Mortality Claims Analysis



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U.S. Individual Life COVID-19 Mortality Claims Analysis

Section 1: Introduction

LIMRA, the Reinsurance Group of America (RGA), the Society of Actuaries (SOA) and TAI have collaborated on an ongoing effort to analyze the impact of COVID-19 on the individual life insurance industry's mortality experience and share the emerging results with the insurance industry and the public. The Individual Life COVID-19 Project Work Group (Work Group) was formed as a collaboration of LIMRA, RGA, the SOA and TAI to design, implement, and create the study and to produce and distribute a variety of analyses. This report is the first public release of results and is an effort to provide some early insights into the impact of COVID-19 on the individual life insurance claims experience.

Data from 27 companies representing approximately 55% of the industry face amount in force have been included in the analyses in this report. This report focuses on distributions of claims and includes analyses of total death counts, excess death counts, COVID reporting, and distributions of policy death counts for the 27 participating companies. A total of 2.5 million death claims from individual life policies from 2015 through June 30, 2020 were included in the analyses. Comparisons of individual life deaths to the U.S. population were also included, where possible, based on the availability of U.S. population data.

Section 2 of the report explains assumptions and definitions used in the report. Section 3 summarizes notable observations from the report. Section 4 looks at the overall claim counts in the first half of 2020 and compares them to baselines developed from prior years' claim counts in an effort to assess the level of overall excess mortality claims in this insured population and compare it to the excess deaths in the U.S. population. Sections 5 through 9 explore the claim counts by various attributes, including attained age, sex, geographic region, underwriting class, smoker status, face amount, and cause of death (COD). The sections on attained age, sex, region, and COD each include a subsection where the distributions of individual life claims were compared to the U.S. population deaths.

The Work Group expects to receive ongoing data submissions from the 27 participating companies plus additional companies during much of 2021. In an effort to continue to supply the industry and public with the latest mortality information on individual life insurance, the Work Group also expects to release additional reports with updated and new analyses, including a full experience study, in the upcoming months.

Section 2: Methodology

LIMRA, RGA, TAI and the SOA jointly collected the data supporting the results of this report. Both claims and inforce/termination data were collected from a group of 27 individual life insurance companies.

The participating companies represent approximately 55% of the individual life insurance face amount inforce based on ACLI and LIMRA data. The data collected covers calendar years 2015 through June 2020 and includes just over 2.5 million claims.

The analysis included in this report is based on data submissions with reported data of October 2020 or later. Deaths occurring after June 30, 2020 have been omitted from the analysis to minimize distortions due to reporting lags. Any deaths prior to June 2020 that were not reported by October 30 may potentially impact the analysis, but the authors feel the impact will likely be small.

For the analysis presented in this report, the following definitions are used:

- COVID deaths = claims with primary cause of death reported as COVID-19
- Non-COVID deaths = claims with primary cause of death known, but not reported as COVID-19
- Unknown deaths = claims where primary cause of death was not reported by the insurer

“All-Cause” death claims include all three categories listed, whereas “known COD” death claims exclude the “unknown deaths.”

This report focuses on an examination of 2020 excess insurance policy-level death counts relative to claim count averages from similar quarters of prior years. The analysis is based on the date of death assigned to the policy and not the reported date of the death. Additionally, the distribution of policy death counts for 2020 are compared to general population data for the same period.

For the examination of the distribution of deaths by attained age, gender, and geographic region, individual life insurance data is compared with data downloaded from CDC reports covering the same time period.

For the analysis by COD, companies that provided data for this report supplied COD information with varying levels of detail. Twenty-three of the 27 companies included in this report provided detailed COD information for the primary COD. The other four companies either did not supply COD or only supplied an indicator if the death was from COVID. The COD detail provided by the 23 contributing companies has been summarized into the following higher-level groupings in an effort to standardize the submissions and facilitate the analysis of COD:

Heart Disease excl. hypertension	Kidney diseases	Auto transport accidents
Hypertension	Other non-communicable diseases	Suicide
Cancer	Influenza/Pneumonia	Other accidents
Digestive	COVID-19	Other non-medical
Respiratory diseases	Other communicable diseases	Unknown
Diabetes		

A more comprehensive experience study is also being developed and will be released in the coming months.

Section 3: Key Highlights

The analyses in this report are based on a total of 2.5 million death claims from individual life policies from 2015 through June 30, 2020. Tables 1 and 2 provide breakdowns of the 2.5 million death claims by sex and attained age group.

Table 1
DEATH CLAIM COUNTS BY SEX – INDIVIDUAL LIFE

Sex	2015	2016	2017	2018	2019	Q1/Q2 2020 COVID	Q1/Q2 2020 Non- COVID	Total
Female	165,119	165,612	168,933	169,418	70,339	4,050	88,570	932,041
Male	293,784	285,869	287,561	283,409	277,799	7,592	139,102	1,575,116
Unknown	121	116	103	115	132	1	56	644
Total	459,024	451,597	456,597	452,942	448,270	11,643	227,728	2,507,801

Table 2
DEATH CLAIM COUNTS BY ATTAINED AGE AT DEATH – INDIVIDUAL LIFE

Age Group	2015	2016	2017	2018	2019	Q1/Q2 2020 COVID	Q1/Q2 2020 Non- COVID	Total
<1	25	15	12	26	19		9	106
1-4	67	54	38	46	39		24	268
5-14	124	139	120	116	125		57	681
15-24	1,192	1,204	1,203	1,038	1,064	2	503	6,206
25-34	2,527	2,896	2,870	2,719	2,716	22	1,413	15,163
35-44	5,107	5,234	5,173	5,193	5,111	99	2,578	28,495
45-54	15,431	14,548	14,310	13,642	13,150	316	6,272	77,669
55-64	43,711	43,517	42,311	42,463	41,662	1,024	20,305	234,993
65-74	79,886	80,467	82,248	82,575	84,071	2,329	43,276	454,852
75-84	122,780	121,031	123,290	123,842	123,347	3,024	62,710	680,024
85+	188,174	182,492	185,022	181,282	176,966	4,827	90,581	1,009,344
Total	459,024	451,597	456,597	452,942	448,270	11,643	227,728	2,507,801

For the COD analyses in Section 9, only insured claims from the companies that supplied detailed COD information were used and all unknown CODs were removed. Based on this subset of the data, shown in Table 3, 6.7% of the insured claims were from COVID.

Table 3
INSURED CLAIMS IN COD ANALYSIS - COVID VERSUS NON-COVID, JANUARY 2020 - JUNE 2020¹

COD	Insured Claims	
	# Claims	% Total
COVID	10,229	6.7%
Other	143,371	93.3%
Total	153,600	100.0%

¹ Only insured claims from companies that supplied detailed COD used and all unknown CODs were excluded.

The following observations represent notable findings of this research.

- The first quarter of 2020 all-cause individual life death counts were in the range of 93% to 99% for the first quarter in the previous five years, similar to the CDC's estimated actual to expected all-cause deaths for the population.
- The second quarter of 2020 all-cause individual life death counts were in the range of 110% to 113% for the second quarter in the previous five years. This was lower than the CDC's second quarter estimate of 118% to 123% for the population.
- The average attained age at death of the individual life COVID claims is 0.6 years older than the average age of non-COVID claims. The U.S. population had a much larger difference of 3.0 years between the average attained age of COVID and non-COVID deaths.
- COVID deaths made up 6.7% of the known insured claims² and 7.3% of the total U.S. population deaths in the first half of 2020. The individual life percentage is likely to change as more COD information is received by insurers and the claims with an 'unknown' COD are assigned a specific COD.
- In the NY-NJ region, the individual life all-cause deaths in April 2020 were 230% of the previous five Aprils.
- All-cause claim counts for 2020 by underwriting class are counter-intuitive for ages 60 and above, with the preferred class risks having larger relative year-over-year increases than other risk classes including substandard. Non-smokers were also observed to have higher percentage increases than smoker classes for key age groups.
- The Centers for Disease Control and Prevention (CDC) reported a significant increase in deaths due to heart disease in the second quarter of 2020 compared to prior second quarters, while the insured data showed a decrease in cardiovascular deaths compared to recent second quarters.

² Based on the data submitted by the 23 companies that supplied detailed COD information. The 'unknown' CODs were excluded from the analysis.

Section 4: Overall Claims Analysis

A baseline of 2020 expectations was defined in order to allow for a comparison to the actual claim activity reported. Below are the daily average claim counts in the first quarter of 2015-2019 and 2020:

- January-March policy claims per day in 2015-2019: 1,353
- January-March policy claims per day in 2020: 1,288

The number of claims in the first quarter of 2020 was 95% of the average of the first quarters of 2015-2019. However, winter months are often the most volatile due to annual fluctuations in the severity of influenza. This is not a definitive position on where 2020 claims were headed compared to 2015-2019, but rather a simple point of reference to provide context.

For a comparison to the U.S. population numbers, the Work Group used the CDC report of estimated weekly deaths for all-cause and COVID deaths. The data through June 30, 2020 is unlikely to change dramatically going forward and this endpoint approximates where the industry data becomes less complete in the data we currently have. To that end, it can be instructive to look at the general population data from the CDC as a comparison against the insured data.

Consider the first three months of 2020 general population data: In that first quarter, the CDC estimated actual to expected all-cause deaths for that population were in the range of 97% to 101%, so likely a slightly better than expected quarter, even with COVID deaths arriving in earnest in the last days of March³.

CDC estimates U.S. population deaths coded as COVID accounted for 30% to 100% of any 2020 first quarter excess⁴. For the insured data, the application of a simple baseline expectation by averaging the first quarter deaths for 2015-2019 in the insured data shows the first quarter of 2020 at 95% of that expected count. Using a 90% confidence interval of 2015-2019 first quarter deaths gives a range of 93% to 99%, similar to the CDC population first quarter estimate.

In the key second quarter months of April through June, the CDC estimated actual to expected deaths in the range of 118% to 123%⁵. Of the excess deaths in this time period, the CDC estimated 76% to 91% included COVID as part of the cause of death. In the insured data, second quarter results were in the range of 110% to 113% of the same period over 2015-2019, with at least 76% of that excess attributed to COVID.

³ CDC. (2021, February 22). *Excess Deaths Associated with COVID-19*. Retrieved from Centers for Disease Control and Prevention: <https://data.cdc.gov/NCHS/Excess-Deaths-Associated-with-COVID-19/xkxf-xrst/>

⁴ CDC. (2021, February 22). *Excess Deaths Associated with COVID-19*. Retrieved from Centers for Disease Control and Prevention: <https://data.cdc.gov/NCHS/Excess-Deaths-Associated-with-COVID-19/xkxf-xrst/>

⁵ CDC. (2021, February 22). *Excess Deaths Associated with COVID-19*. Retrieved from Centers for Disease Control and Prevention: <https://data.cdc.gov/NCHS/Excess-Deaths-Associated-with-COVID-19/xkxf-xrst/>

Section 5: Average Age and Claims by Attained Age and Sex Analysis

5.1 INDIVIDUAL LIFE VERSUS U.S. POPULATION – DISTRIBUTIONS OF DEATHS BY ATTAINED AGE

This subsection explores the average age at death of the individual life claims and U.S. population deaths by sex and COD subgroups. It also includes a comparison of the attained age distributions of non-COVID and COVID deaths and an analysis of the attained age distributions of total insured and total population deaths by sex. The attained age groups presented in this section were chosen to enable a direct comparison of the individual life claims to the U.S. population death data made available by the CDC⁶. For report purposes, a claim is attributed to COVID if the company had identified this as the primary COD in their reporting. The life insurance results in this section are based on policy counts, not face amount. A large percentage, 43%, of insured life claims had face amounts under \$10,000 and tended to have older ages at time of death.

The average age at death for individual life claims was greater than the average age for the U.S. population deaths for all subgroups shown in Table 4. The average age of the individual life claims was 79.5 for COVID claims and 78.9 for non-COVID claims, for a difference of 0.6 years, and was much smaller than the 3.0-year difference between the average age of COVID deaths (76.1) and non-COVID deaths (73.1) in the U.S. population. The subgroup with the largest difference between the average age of individual life claims and U.S. population deaths was the non-COVID, male subgroup at 8.6 years.

Table 4
AVERAGE AGE OF DEATHS – JANUARY 2020 - JUNE 2020

Cause of Death	Sex	Individual Life Claims ⁷	U.S. Population Deaths ⁸	Individual Life minus U.S. Population
COVID	Male	79.2	73.2	6.0
	Female	80.0	79.5	0.5
	All	79.5	76.1	3.4
Non COVID	Male	78.5	69.9	8.6
	Female	79.4	76.5	2.9
	All	78.9	73.1	6.8
All-Causes	Male	78.5	70.2	8.3
	Female	79.4	76.5	2.9
	All	78.9	73.3	5.6

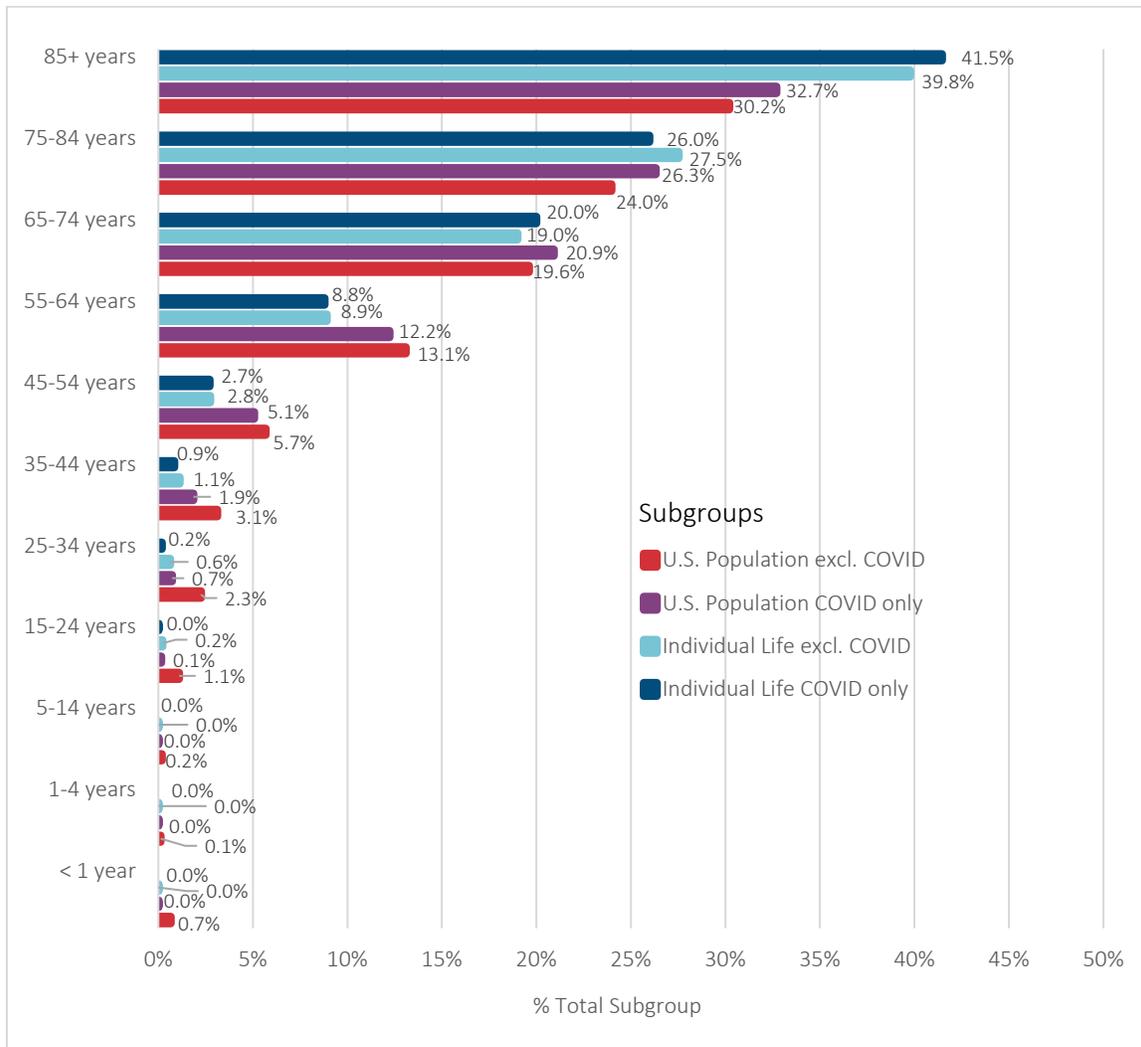
⁶ CDC. (2021, February 19). Retrieved from Centers for Disease Control and Prevention: <https://data.cdc.gov/NCHS/Provisional-COVID-19-Death-Counts-by-Sex-Age-and-W/vsak-wrfu>

⁷ Non-COVID includes unknown CODs in the individual life claims.

⁸ 2020 population death counts were only available in 10-year age groups from the CDC. The average ages of these '10-year age groups' were needed to determine the average ages shown here but were not available. As an alternative, 2019 U.S. population death data from CDC WONDER was used to approximate the average ages of the '10-year age groups'.

The age group distributions of insured COVID claims, insured non-COVID claims, general population COVID deaths, and general population non-COVID deaths are shown in Figure 1. This exhibit shows which age groups are contributing to the average age differences between the insured claims and population deaths for all sex subgroups in Table 3. For insured COVID claims, a greater percentage occurred at ages 65-74 and 85+ than for non-COVID claims. In the 75-84 age group and ages below 65, COVID claims represented the same or a slightly lower percentage of claims than non-COVID. For the general population deaths, the COVID percentages were greater than the non-COVID percentages at ages 65 and above and lower than non-COVID percentages at ages below 65.

Figure 1
DISTRIBUTION OF ALL-CAUSE DEATHS BY ATTAINED AGE GROUP – JANUARY 2020 - JUNE 2020



Combining COVID and non-COVID, age group distributions of the insured claims and the U.S. population deaths are shown separately for males and females in Figures 2 and 3. Figure 2 highlights a large difference in the insured and general population age distribution of deaths for males, with ages 75 and older representing two-thirds of the individual life claims and under 50% of the general population deaths. This difference is much smaller for females as shown in Figure 3.

Figure 2
DISTRIBUTION OF ALL-CAUSE DEATHS BY ATTAINED AGE GROUP – MALES, JANUARY 2020 - JUNE 2020

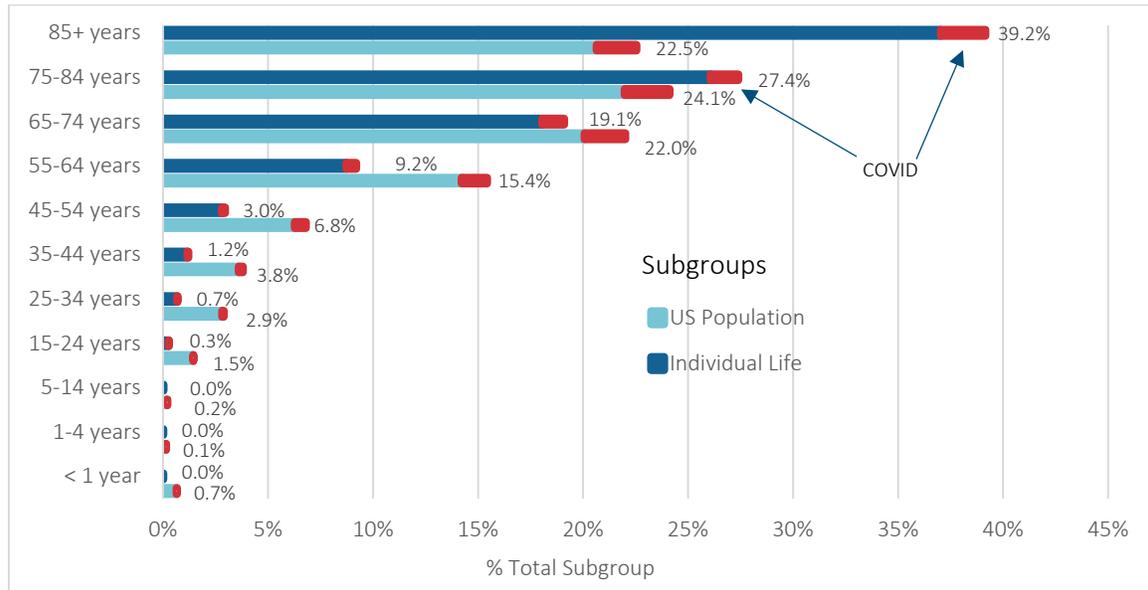
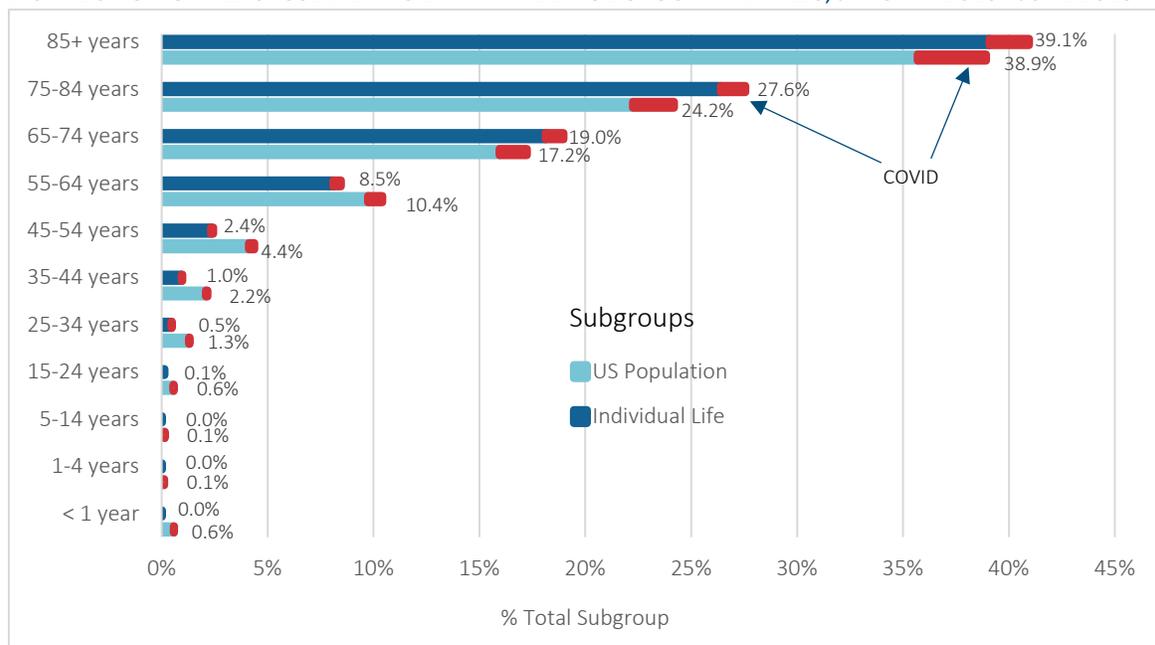


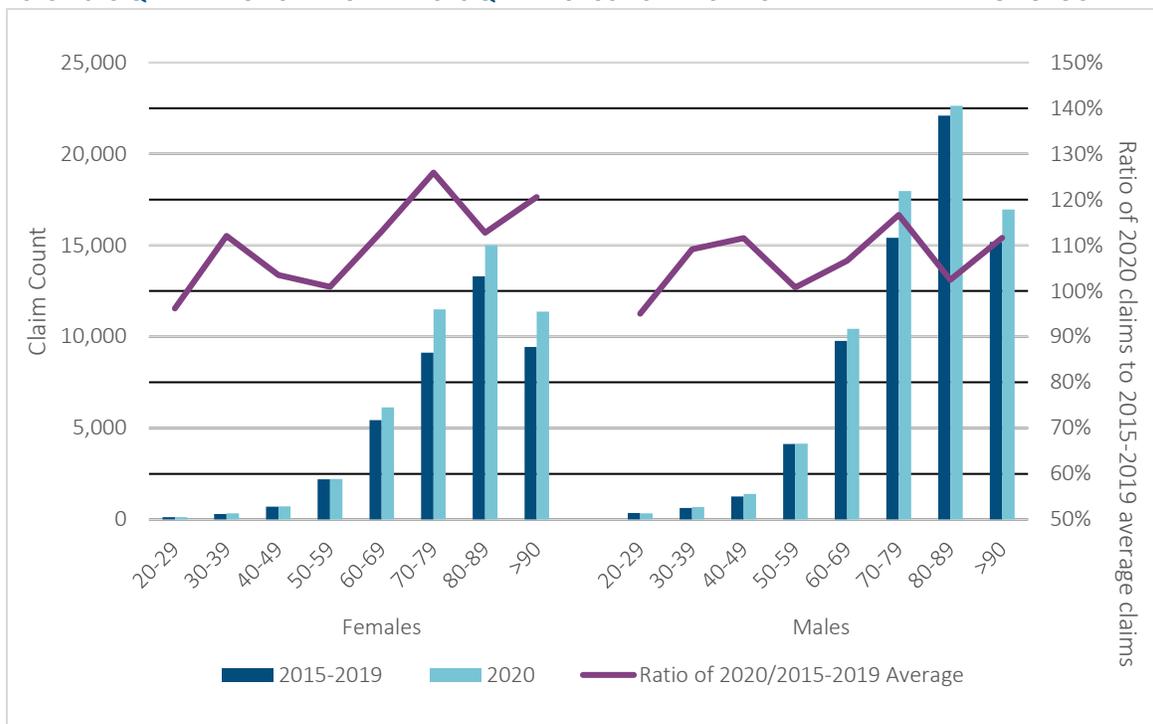
Figure 3
DISTRIBUTION OF ALL-CAUSE DEATHS BY ATTAINED AGE GROUP – FEMALES, JANUARY 2020 - JUNE 2020



5.2 INDIVIDUAL LIFE DATA (2020 Q2 VERSUS 2015-2019 Q2)

The insured data shows some notable differences compared to the U.S. population data. A comparison of claims by age and sex immediately makes that evident as shown in Figure 4. Early studies of the population data have indicated that males experienced much worse mortality due to COVID than females.⁹ However, looking at excess claims in the insured data for the second quarter shows it is females who had a slightly worse relative claims increase than males when measured against the defined expected basis in all but one age band.

Figure 4
2015-2019 Q2 AVERAGE CLAIMS AND 2020 Q2 ALL-CAUSE CLAIMS BY SEX AND ATTAINED AGE GROUP



⁹ Ng, J., Bakrania, K., Falkous, C., & Russell, R. (2020, December 18). COVID-19 Mortality by Age, Gender, Ethnicity, Obesity, and Other Risk Factors: A Comparison Against All-Cause Mortality. Retrieved February 22, 2021, from <https://www.rgare.com/knowledge-center/media/research/covid-19-mortality-by-age-gender-ethnicity-obesity-and-other-risk-factors>

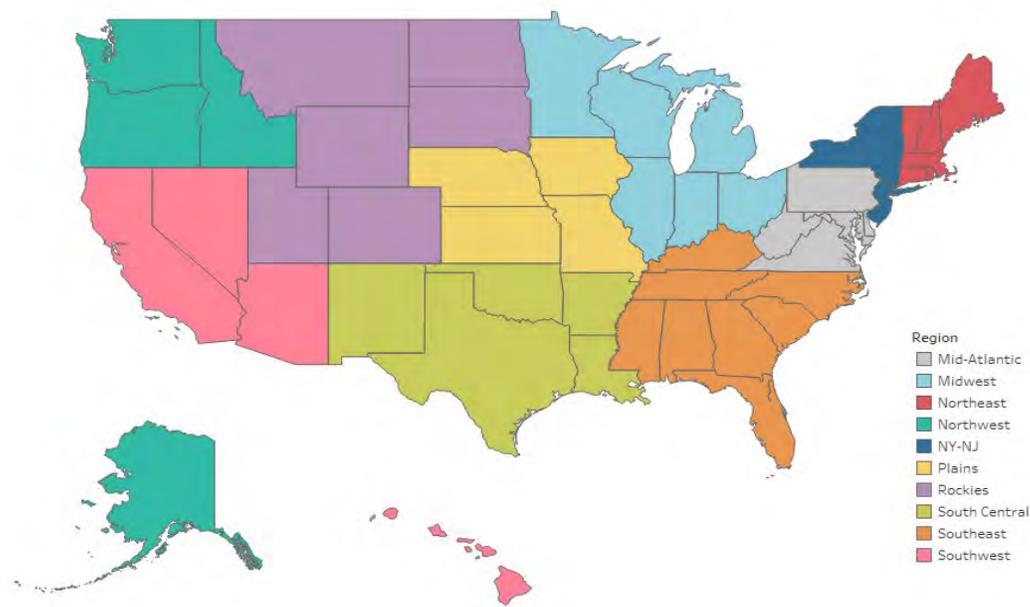
Section 6: Claims by Geographic Region Analysis

6.1 GEOGRAPHIC REGIONS DEFINED

The CDC data also points to COVID inundating various geographic regions at different times.¹⁰ The obvious early temporal patterns were the massive strike to the northeast sector of the country at the start of the pandemic, particularly New York and New Jersey.

For this report, Figure 5 defines the U.S. geographic regions examined. For the insured data, only the state of issue was available for the analysis. Therefore, the individual life state-level results only indicate where a policy was sold, which is not necessarily the same as where the individual resided at the time of their death.

Figure 5
GEOGRAPHIC REGIONS



¹⁰ CDC. (2021, February 22). *Provisional COVID-19 Death Counts by Sex, Age, and State*. Retrieved from Centers for Disease Control and Prevention: <https://data.cdc.gov/NCHS/Provisional-COVID-19-Death-Counts-by-Sex-Age-and-S/9bhg-hcku>

6.2 INDIVIDUAL LIFE DATA VERSUS U.S. POPULATION - DISTRIBUTION OF DEATHS BY GEOGRAPHIC REGION

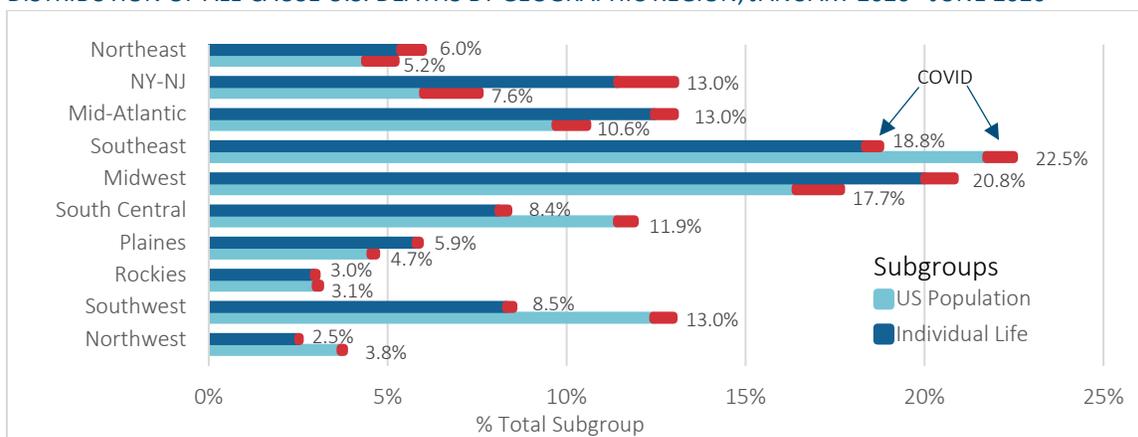
The insured claim counts submitted by the 27 participating companies and the U.S. population deaths¹¹ analyzed in this section are shown in Table 5.

Table 5
INDIVIDUAL LIFE INSURED CLAIMS AND U.S. POPULATION DEATHS BY REGION
JANUARY 2020 - JUNE 2020

Region	Individual Life Claims			U.S. Population Deaths		
	COVID	Non-COVID	Total	COVID	Non-COVID	Total
Northeast	1,528	12,792	14,320	13,578	68,831	82,409
NY-NJ	3,885	27,319	31,204	25,020	94,477	119,497
Mid-Atlantic	1,406	29,769	31,175	14,012	152,857	166,869
Southeast	1,032	43,892	44,924	12,242	342,784	355,026
Midwest	2,049	47,855	49,904	20,107	258,667	278,774
South Central	657	19,387	20,044	7,837	179,939	187,776
Plains	289	13,834	14,123	2,427	71,340	73,767
Rockies	196	7,015	7,211	2,031	47,121	49,152
Southwest	495	19,888	20,383	8,978	196,024	205,002
Northwest	106	5,972	6,078	1,603	58,047	59,650
Total	11,643	227,723	239,366	107,835	1,470,087	1,577,922

Combining COVID and non-COVID, regional distributions of the insured claims and the population deaths over the first half of 2020 are shown separately in Figure 6. Direct comparisons between regions are not too meaningful since there are such large population differences. Further, the comparison between insured data and population is further complicated, since the distribution of the insured data is a function of the where the business from the 27 contributing companies was sold and may not reflect the distribution of the entire individual life industry. A more in depth analysis by region will be explored in future studies.

Figure 6
DISTRIBUTION OF ALL-CAUSE U.S. DEATHS BY GEOGRAPHIC REGION, JANUARY 2020 - JUNE 2020



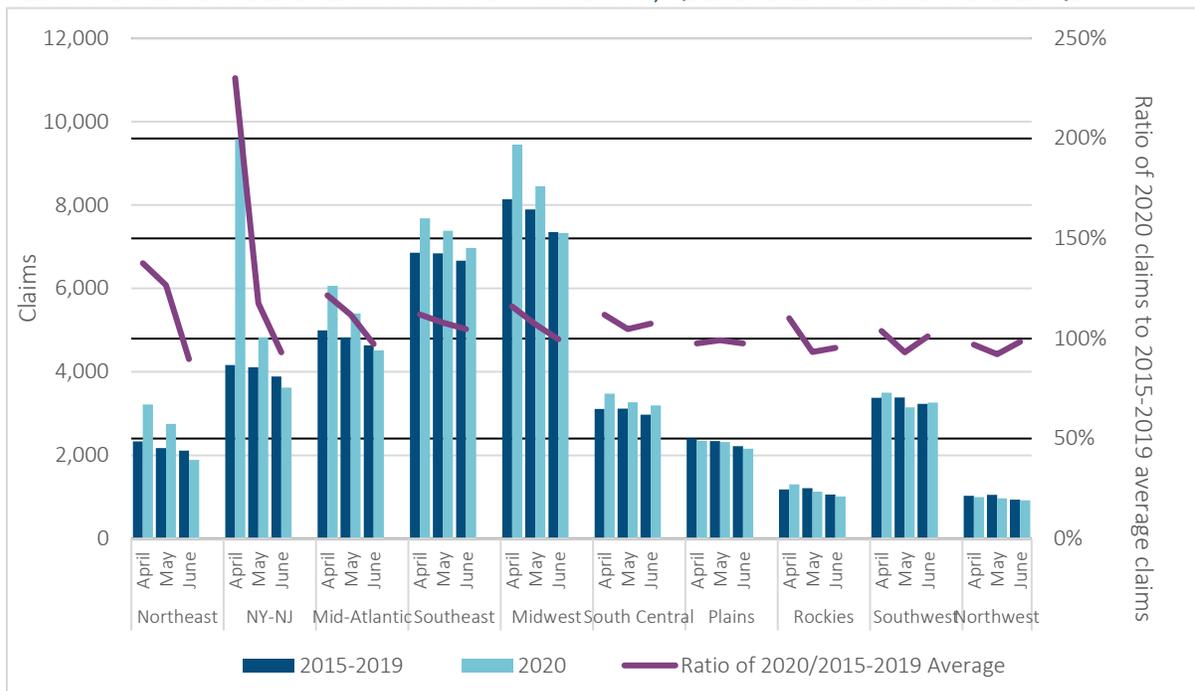
¹¹ CDC. (2021, March 2). Retrieved from Centers for Disease Control and Prevention: <https://data.cdc.gov/NCHS/Provisional-COVID-19-Death-Counts-by-Week-Ending-D/r8kw-7aab>

6.3 INDIVIDUAL LIFE DATA BY GEOGRAPHIC REGION (2020 VERSUS 2015-2019)

Figure 7 shows the individual life claim counts by region for the average of the 2nd quarter of 2015-2019 and the 2nd quarter of 2020. Some observations from the figure are:

1. Most regions seemed to have a much worse April compared to May and June
2. NY-NJ had a terrible April not experienced anywhere else in the country
3. Northeast came in well above average for April and May
4. Mid-Atlantic, Southeast, Midwest, and South Central had higher mortality relative to recent years
5. Plains, Rockies, Southwest, and Northwest were more similar to past years

Figure 7
ALL-CAUSE INDIVIDUAL LIFE CLAIM COUNTS BY U.S. REGION, Q2 2015-2019 AVERAGE AND 2020 Q2



The insured data reflects the same patterns described in the CDC population breakdowns of the same regions.

Section 7: Claims by Underwriting Class and Smoker Status Analysis

Health experts have cataloged characteristics of at-risk populations as well.¹² Older age and certain characteristics including the existence of medical conditions such as obesity, diabetes, heart disease, and respiratory disease are major influences that increase the risk of suffering more severe outcomes from COVID. The insured data does not include specific health conditions for individual insureds, but it has underwriting class and rating factors. Since rating factors are assigned to people at higher than normal risk in the insured population, it should be expected that deaths of people with rating factors would increase more than those of preferred risks during the pandemic.

Considering that, it may be surprising to see a counterintuitive result. Figure 8 shows the ratio of the number of claims by age and underwriting class for the second quarter of 2020 to the average number of claims by age for the same quarter in 2015-2019.

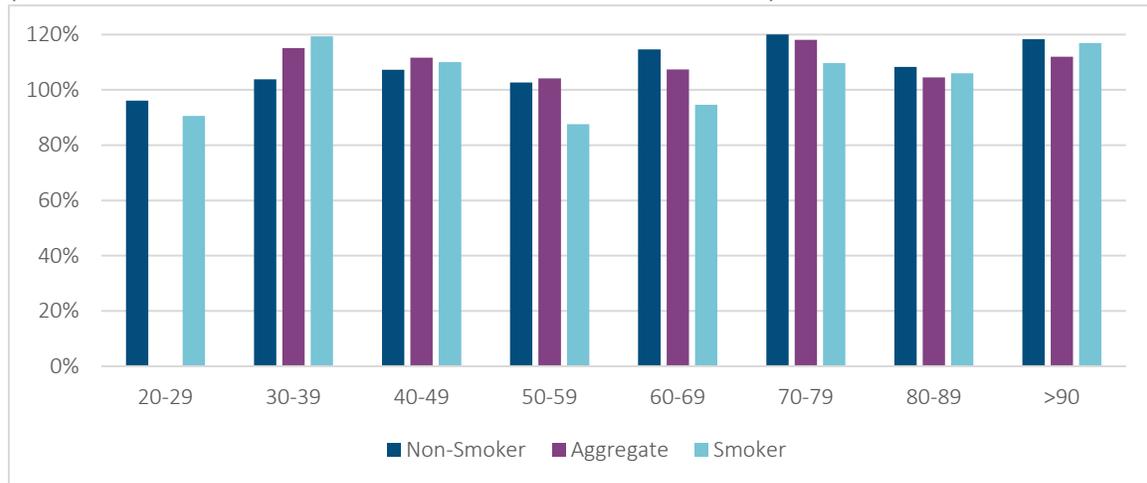
Figure 8
2020 Q2 ALL-CAUSE CLAIMS RELATIVE TO 2015-2019 Q2 AVERAGE CLAIMS BY UNDERWRITING CLASS
(MINIMUM 100 CLAIMS IN EACH PART OF THE RATIO TO BE INCLUDED)



¹² CDC. (2021, February 22). *Assessing Risk Factors for Severe COVID-19 Illness*. Retrieved from Centers for Disease Control and Prevention: <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/assessing-risk-factors.html>

The best risks had the largest year-over-year claim increases in age groups 60 and older. This relationship was not restricted to the results by underwriting class. Figure 9 shows the same phenomena occurred with smoker status, where non-smokers typically had the largest increases in claims and smokers had the lowest increase at the age groups where the vast majority of deaths occurred.

Figure 9
2020 Q2 ALL-CAUSE CLAIMS RELATIVE TO 2015-2019 Q2 AVERAGE CLAIMS BY SMOKER STATUS
(MINIMUM 100 CLAIMS IN EACH PART OF THE RATIO TO BE INCLUDED)



Section 8: Claims by Face Amount Analysis

The CDC provides demographics at the county level segmented by percent of people living at or below the poverty level.¹³ The CDC uses three classifications for counties: Low (up to 12.3% poverty), moderate (12.3% to 17.3%) and high (greater than 17.3%). The temporal patterns show that, in the first few months of the pandemic, all three groups of counties experienced similar case rates. In the summer months, the richest counties had the fewest cases by far, and the poorest had the most cases by far. But cases are not deaths. At the start of the pandemic, deaths were hitting the richest and poorest counties; the middle socioeconomic class counties were surviving much better. The summer pattern of deaths did match the summer pattern of cases.

Using face amount as a proxy for socioeconomic status in the insured population and focusing only on the second quarter insured claims by face amount, Figure 10 shows no broad patterns aside from the spike in large claims for the oldest age band. The lowest face amount bands tend to have more of the business that is underwritten on a simplified or guaranteed issue basis, but the average number of claims expected is also higher.

Figure 20
2020 Q2 ALL-CAUSE CLAIMS RELATIVE TO 2015-2019 Q2 AVERAGE CLAIMS BY FACE AMOUNT BAND AND ATTAINED AGE GROUP (MINIMUM 100 CLAIMS IN EACH PART OF THE RATIO TO BE INCLUDED)



¹³ CDC. (2021, February 22). *Trends in COVID-19 Cases and Deaths in the United States, by County-level Population Factors*. Retrieved from COVID Data Tracker: https://covid.cdc.gov/covid-data-tracker/#pop-factors_7daynewcases

Looking only at the highest and lowest face amount bands for each month of the second quarter, as shown in Figure 11, both improved dramatically from April to June.

Figure 31
2020 MONTHLY ALL-CAUSE CLAIMS RELATIVE TO 2015-2019 MONTHLY AVERAGES BY FACE AMOUNT BAND



Section 9: Claims by Cause of Death Analysis

Twenty-three of the 27 companies included in this report provided detailed COD information for the primary COD. The other four companies either did not supply COD or only supplied an indicator if the death was from COVID. Just over two million claims were submitted by the 23 ‘detailed’ companies, but the COD in 365,712 of those claims was designated as ‘unknown.’ For the COD analysis shown in this section, only the subset of 1.66 million death claims from the 23 companies where a specific COD was identified (not ‘unknown’) were included. Table 6 shows a breakdown of the data submitted and shows that 66.2% of the total death claims submitted were included in the COD analysis. The COD detail provided by the 23 companies was summarized into higher-level groupings in an effort to standardize the submissions and facilitate the analysis of COD.

Table 6
DEATH CLAIM COUNTS – INDIVIDUAL LIFE

Level of COD Detail Provided	COD	2015	2016	2017	2018	2019	2020 – Q1 & Q2	Total	%
Detailed COD from 23 companies	Specified	304,384	309,380	310,622	302,884	279,726	153,600	1,660,596	66.2%
	Unknown	71,203	57,498	57,980	61,509	80,300	37,222	365,712	14.6%
No Detail	n/a	83,437	84,719	87,995	88,549	88,244	48,549	481,493	19.2%
Total		459,024	451,597	456,597	452,942	448,270	239,371	2,507,801	100.0%

9.1 INSURED CLAIMS VERSUS U.S. POPULATION DEATHS, COVID VERSUS NON-COVID

COVID deaths made up 7.3% of the total U.S. population deaths¹⁴ in the first six months of 2020 as shown in Table 7. In the insured data, COVID was indicated as the primary COD in 6.7% of the known death claims from companies that submitted detailed CODs. The insured percentage should be monitored closely going forward because it is likely to change as more COD information is received by insurers and the claims with an ‘unknown’ COD are assigned a specific COD.

Table 7
INSURED CLAIMS VERSUS U.S. POPULATION DEATHS - COVID VERSUS NON-COVID
JANUARY 2020 - JUNE 2020¹⁵

COD	Insured Claims		U.S. Population Deaths	
	# Claims	% Total	# Deaths	% Total
COVID	10,229	6.7%	119,285	7.3%
Other	143,371	93.3%	1,512,431	92.7%
Total	153,600	100.0%	1,631,716	100.0%

¹⁴ CDC. (2021, February 19). Retrieved from Centers for Disease Control and Prevention: <https://data.cdc.gov/NCHS/Weekly-Counts-of-Deaths-by-State-and-Select-Causes/muzy-jte6>

¹⁵ Only insured claims from companies with detailed COD used. Unknown CODs excluded in the insured life claims.

9.2 INDIVIDUAL LIFE DATA VERSUS U.S. POPULATION - DISTRIBUTION OF DEATHS BY CAUSE

The CDC provides emerging 2020 population mortality data on selected primary CODs¹⁶. Data from six of those CODs were selected and compared to the individual life data to see whether the distribution of non-COVID claims and deaths were any different in 2020 from prior years. The selected CODs were heart disease, cancer, accidents, diabetes, flu and pneumonia, and suicide. In 2019, these six CODs represented about 56% of the total deaths in the U.S. The remaining CODs, representing 44% of all deaths, were combined into the ‘Other’ category, as shown in Figures 13 and 14. COVID claims were excluded in 2020 to facilitate a comparison of the change in distribution of the selected six CODs.

The ICD-10 codes for the selected CODs, other than COVID, are shown in Table 8.

Table 8
SELECTED CAUSES OF DEATH AND ICD-10 CODES

Reported Cause of Death	ICD-10 113 Cause List (with ICD-10 codes)
Heart, excl. hypertension	Diseases of heart (I00-I09, I11, I13, I20-I51)
Cancer	Malignant neoplasms (C00-C97)
Accidents	Accidents (unintentional injuries) (V01-X59, Y85-Y86)
Diabetes	Diabetes mellitus (E10-E14)
Flu/Pneumonia	Influenza and pneumonia (J09-J18)
Suicide	Intentional self-harm (suicide) (*U03, X60-X84, Y87.0)

Figure 12 shows the distribution of the individual life claims by the six selected CODs and the ‘Other’ COD category by year. Figure 13 shows the distribution of general population deaths for the same six CODs and the ‘Other’ category. The percentage of deaths from heart disease in 2020 remained level in both the insured data and the general population. The percentage of deaths from cancer dropped about 1% in both the insured data and the general population. The ‘Other’ category increased to 37% in 2020. Changes in the remaining selected CODs ranged from -0.4% to 0.5%.

¹⁶ CDC. (2021, February 19). Retrieved from Centers for Disease Control and Prevention: <https://data.cdc.gov/NCHS/Weekly-Counts-of-Deaths-by-State-and-Select-Causes/muzy-jte6>

Figure 12
DISTRIBUTION OF DEATHS BY CAUSE OF DEATH AND YEAR – INDIVIDUAL LIFE, EXCLUDING COVID AND UNKNOWN CLAIMS

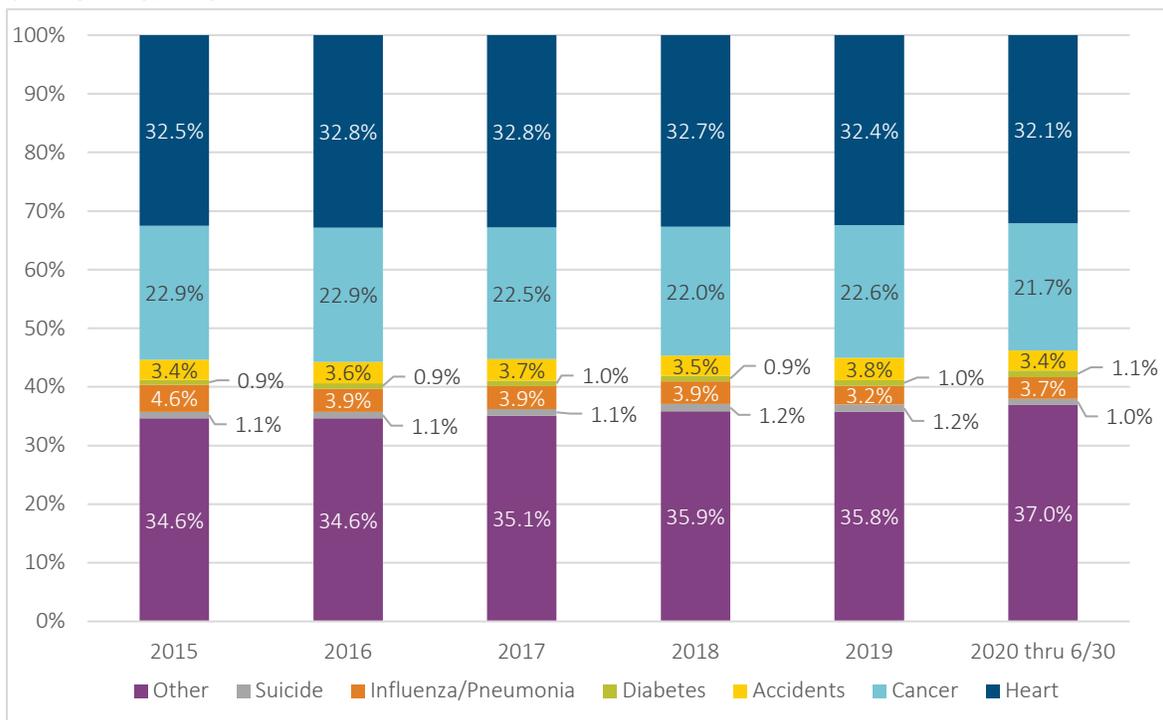
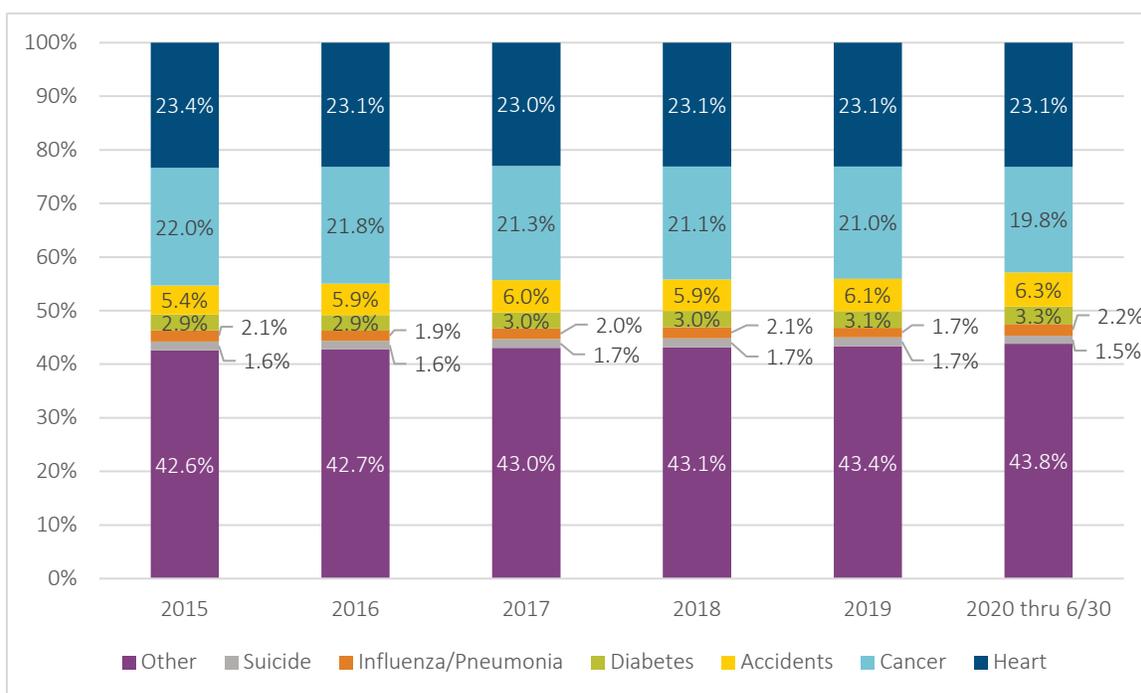


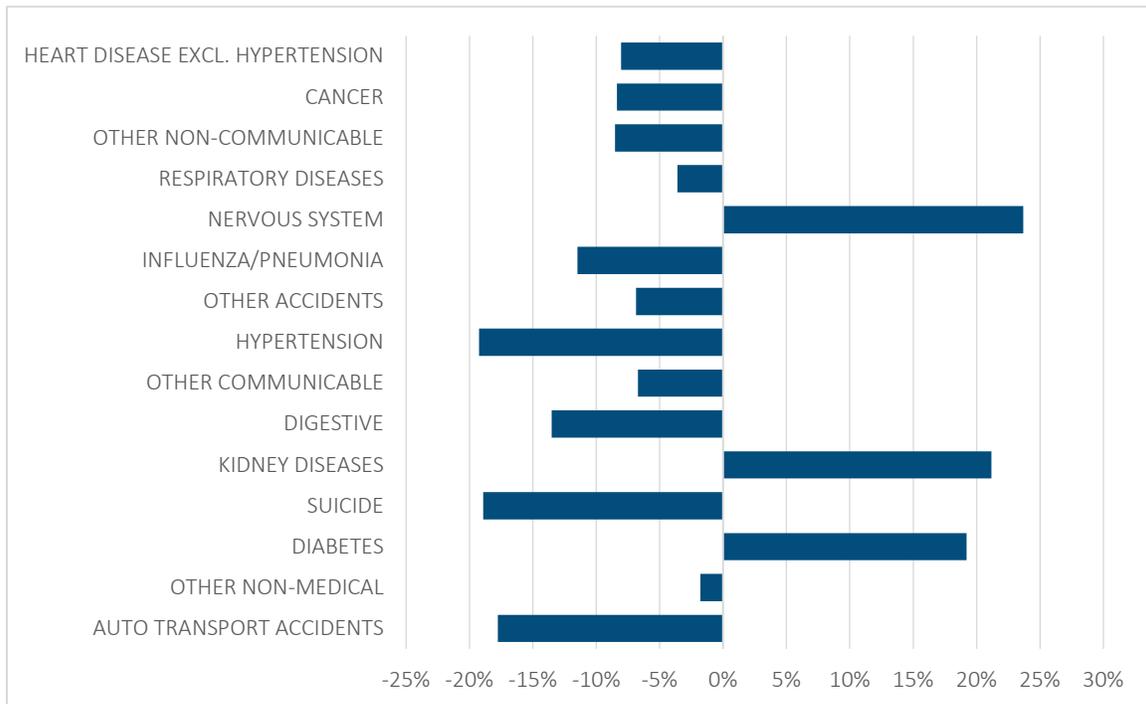
Figure 43
DISTRIBUTION OF DEATHS BY CAUSE OF DEATH AND YEAR – U.S. POPULATION, EXCLUDING COVID DEATHS



9.3 INDIVIDUAL LIFE DATA (2015-2019 VERSUS 2020)

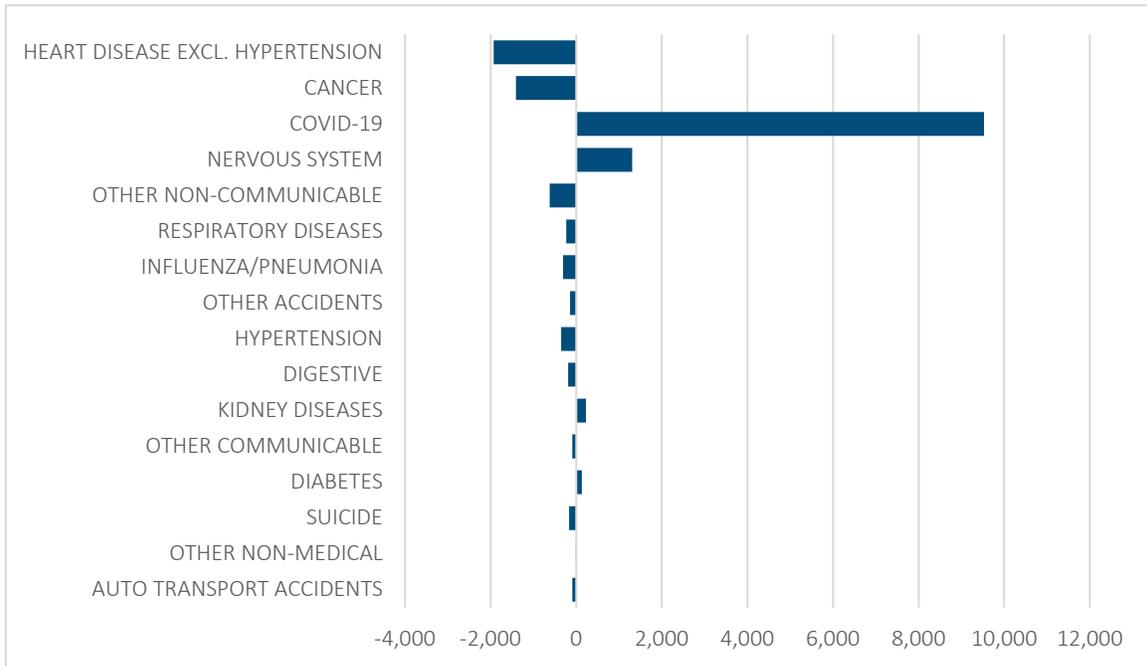
The CDC reported additional deaths due to certain causes in the early months of the pandemic. Notably, heart disease, Alzheimer’s, and diabetes-related deaths increased significantly.¹⁷ As shown in Figures 14 and 15, the insured data reflects the Alzheimer’s increase (included here with “Nervous system”) and the diabetes increase, but the cardiovascular deaths actually decreased a bit on a percentage basis and decreased considerably on a raw count basis.

Figure 14
CHANGE IN PERCENTAGE OF APRIL-JUNE 2020 CLAIM COUNTS COMPARED TO AVERAGE OF SAME PERIOD IN 2015-2019. EXCLUDES COVID AND UNKNOWN CAUSES. LISTED FROM MOST TO LEAST COMMON CAUSE.



¹⁷ CDC. (2021, February 22). *Excess Deaths Associated with COVID-19*. Retrieved from Centers for Disease Control and Prevention: https://www.cdc.gov/nchs/nvss/vsrr/covid19/excess_deaths.htm

Figure 15
CHANGE IN APRIL-JUNE 2020 CLAIM COUNTS COMPARED TO AVERAGE OF SAME PERIOD IN 2015-2019.
LISTED FROM MOST TO LEAST COMMON CAUSE OF DEATH



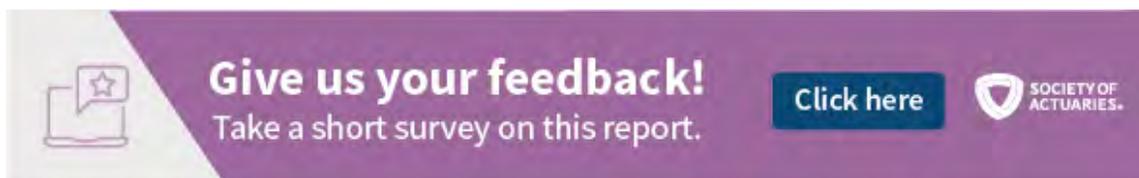
Section 10: Reliances and Limitations

The Individual Life COVID-19 Project Work Group would like to stress that, due to delays in the reporting and recording of claim information in the insured data, the more recent data submitted for this research is considered preliminary and will change with subsequent data submissions.

The analyses in this report are based on data submissions from 27 individual life insurance companies with reported data as of October 2020 or later. Deaths occurring after June 30, 2020 have been omitted from the analysis to minimize distortions due to reporting lags. Any deaths prior to June 2020 that were not reported by October 30 may potentially impact the analysis, but the authors feel the impact will likely be small.

COD is one data element that should be considered with caution. Delays and subjectivity exist in the recording of COD on death certificates. The companies that provided data for this report supplied COD information with varying levels of detail. The COD detail provided by the contributing companies has been summarized into higher-level groupings in an effort to standardize the submissions and facilitate the analysis of COD.

The material in this report is not a full experience study. Only insured claims and general population deaths were analyzed. The Work Group plans to develop an experience study report and release it in the upcoming months. Conclusions based on the distribution analysis may change once the full experience study is complete.



 **Give us your feedback!**
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Section 11: Acknowledgments

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Section 12: List of Participating Companies

AIG Life	Northwestern Mutual
Allstate	OneAmerica
Ameritas Life Insurance Corp.	Pacific Life
Amica Life	Pan-American Life
CNO Financial Group	Pavonia Life Insurance Co of MI (Global Bankers)
Equitable	Principal Financial Group
Government Personnel Mutual Life	Prudential Financial
Kansas City Life	SBLI
Knights of Columbus	State Farm Life
Lincoln Financial Group	Symetra
MetLife	The Independent Order of Foresters
Mutual of Omaha	Thrivent Financial
Nationwide	Woodmen Life
New York Life Insurance Company	

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Reinsurance Group of America, Incorporated (RGA), a Fortune 500 company, is among the leading global providers of life reinsurance and financial solutions, with approximately \$3.5 trillion of life reinsurance in force and assets of \$84.7 billion as of December 31, 2020. Founded in 1973, RGA today is recognized for its deep technical expertise in risk and capital management, innovative solutions, and commitment to serving its clients. With headquarters in St. Louis, Missouri, and operations around the world, RGA delivers expert solutions in individual life reinsurance, individual living benefits reinsurance, group reinsurance, health reinsurance, facultative underwriting, product development, and financial solutions. To learn more about RGA and its businesses, visit the Company's website at www.rgare.com.

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A dedicated team of reinsurance experts who have performed over 100 engagements to support insurers and reinsurers in full-time administration, identifying treaty data discrepancies, system projects, and analyzing operational processes and compliance.

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