



LIMRA, Reinsurance Group of America (RGA), the Society of Actuaries (SOA) Research Institute, 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 Research Institute, and TAI to design, implement, and create the study and to produce and distribute a variety of analyses.

This report is the latest public release from this collaboration and contains the results of the study of excess mortality for individual life insurance to include the fourth quarter of 2022. Data from 29 companies representing approximately 69% of the industry face amount in force have been included in the analysis in this report. A total of 3.2 million death claims from 2015 through December 31st, 2022 make up the basis of the analysis.

Highlights of 4th quarter 2022 actual to expected relative mortality ratios (A/E):

- Fully underwritten policies overall came in at just 101% A/E, but with a few interesting splits.
- Fully underwritten policies under \$100,000 had the best experience against the pre-pandemic trend. We estimated an expected 56,229 claims and the actual claim count was 55,910 (99.4% A/E) in this cohort
- Fully underwritten policies of \$100,000 and higher continued to show poorly against our expected. The estimated (pre-pandemic) expected in this cohort was 16,111 claims in the fourth quarter and the actual was 17,138 (106.4%)
 - The worst A/E experience was in the \$1,000,000 and larger face amount band, coming in at 108.2% (1,300 claims against 1,202 expected)
- As the overall excess decreased, so too did the spread between the best and worst regions. The 2020 and 2021 fourth quarters saw ranges in the lowest to highest regions from 104% to 135% A/E (2020) and 105% to 123% A/E (2021). But the fourth quarter of 2022 had a low of 94% and a high of just 107%.
 - The low was in region 6 (the southeastern states) and joined two other regions with A/E's below 100% in the fourth quarter of 2022. This marked the first time any region came in below 100% in the fourth quarter since the pandemic began.
- Younger ages (under 45) had worse experience than other age groups with an A/E of 105.3%. But, this was a large improvement for this cohort compared to the two prior fourth quarters which came in at 119.3% and 132.5%.
- Looking at other age groups, (45-64, 65-84, 85+) none deviated above or below expected by even 2%

Other Information

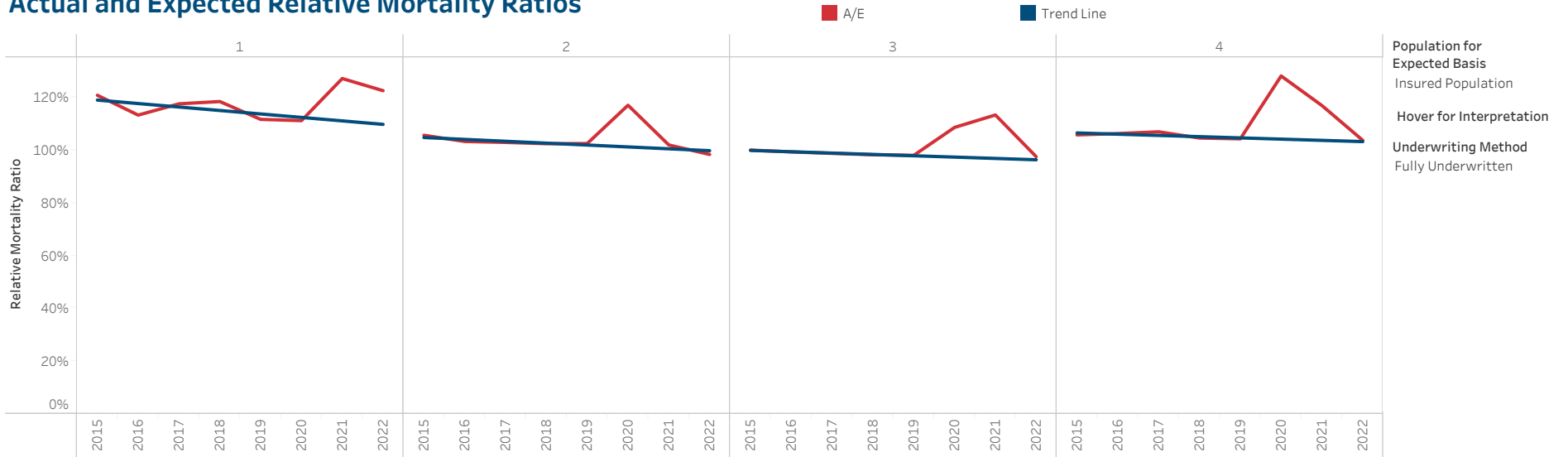
A list of companies whose data was included in this work can be found in the Information tab. Additionally, this report includes a comparison of the mortality impact of COVID-19 on insured lives versus the general population. Please see the Information tab and the hover box indicators in each of the tabs for more detail on the methodology and analysis approaches. This dashboard provides the user the ability to interact with data from the report.

For questions regarding the dashboard please contact:

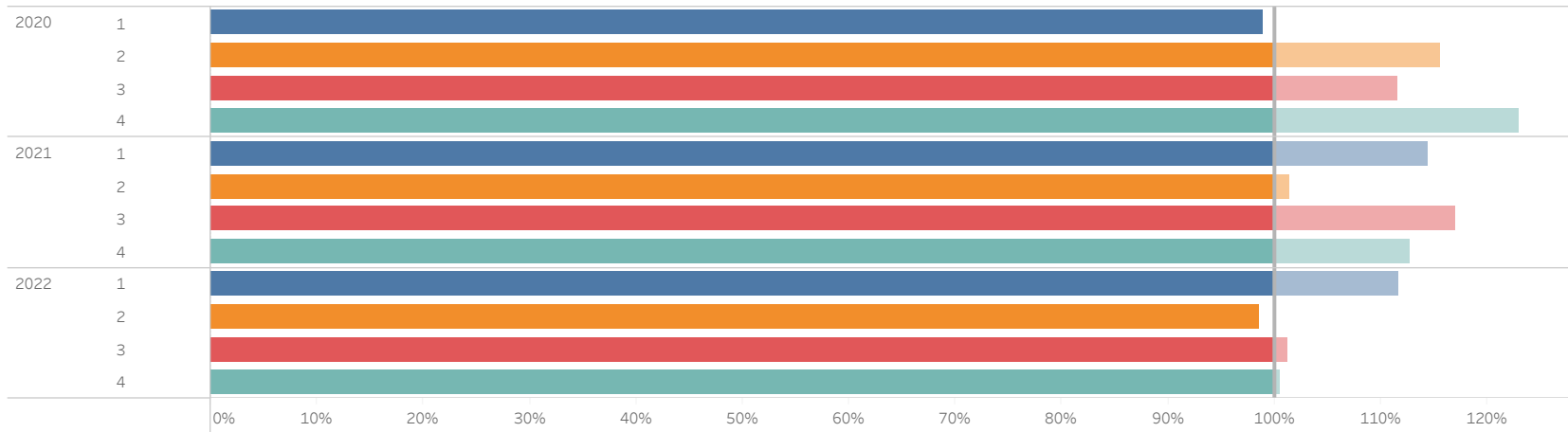
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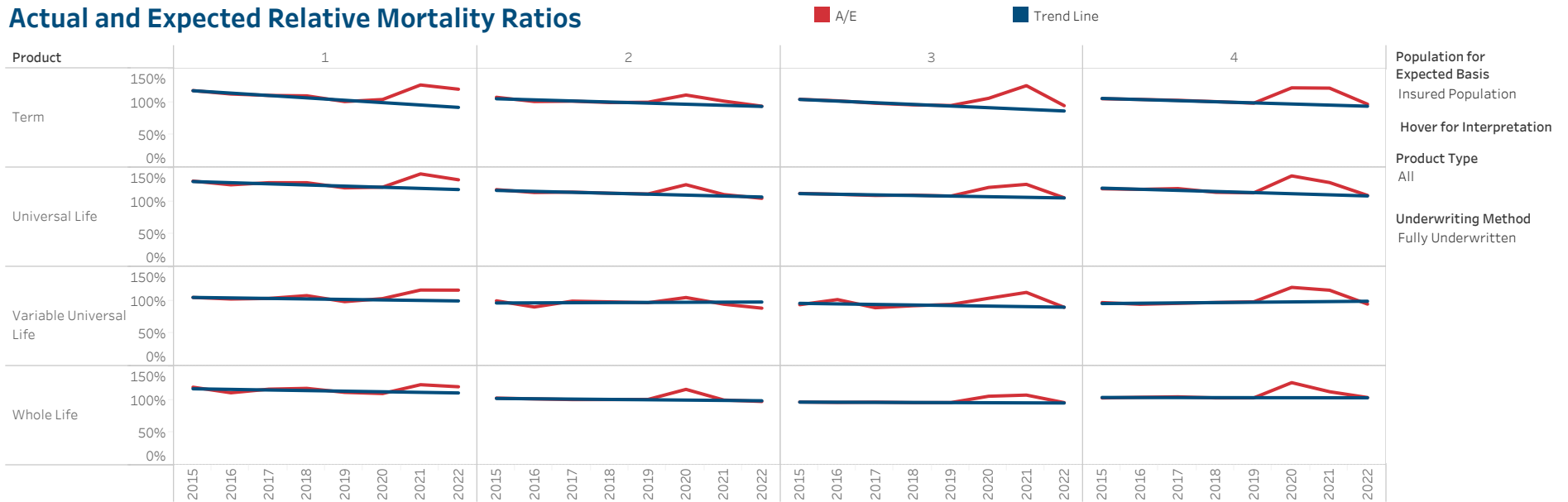
Actual and Expected Relative Mortality Ratios



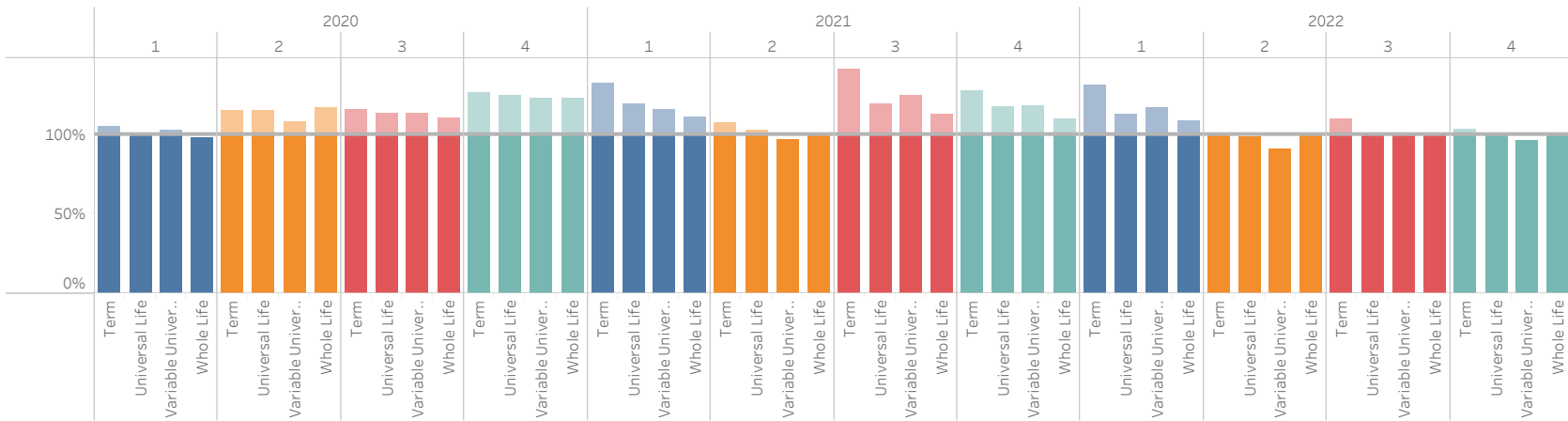
2020 - 2022 Ratio of Actual to Expected Relative Mortality Ratios



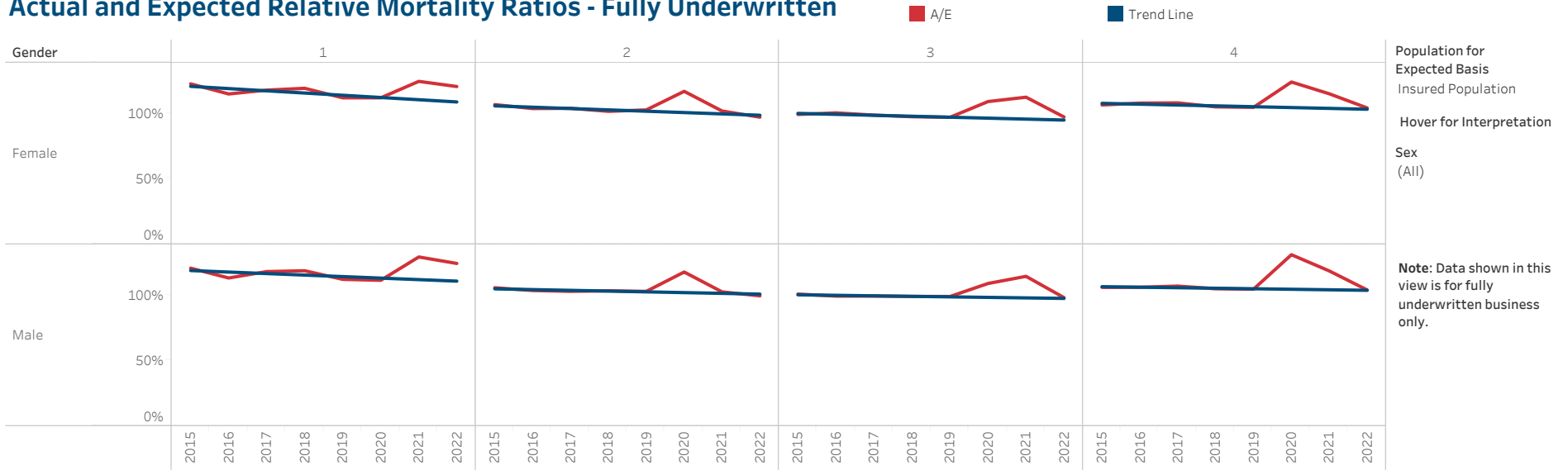
Actual and Expected Relative Mortality Ratios



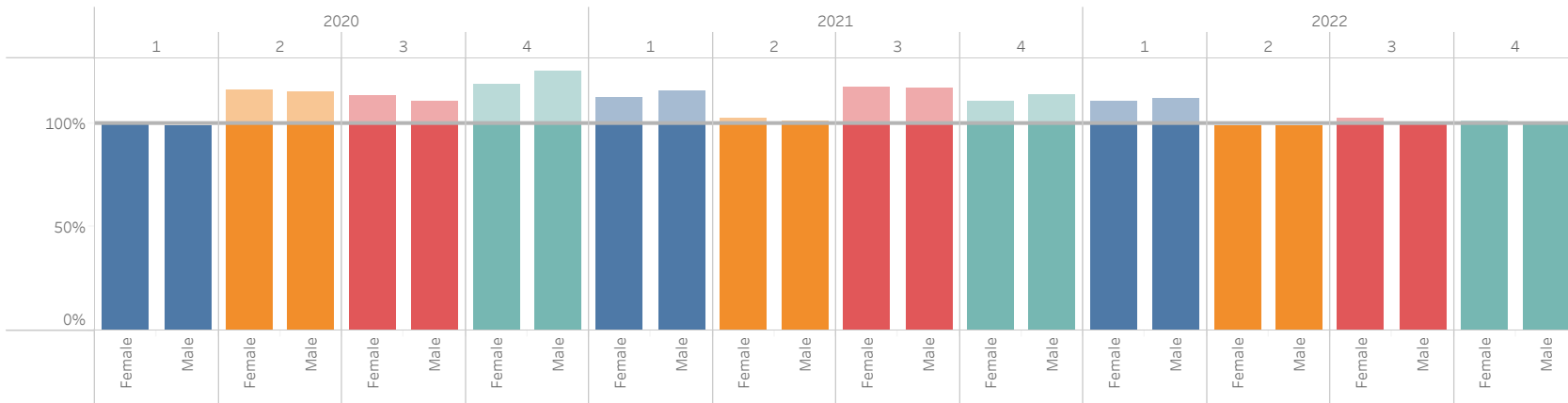
2020 - 2022 Ratio of Actual to Expected Relative Mortality Ratios



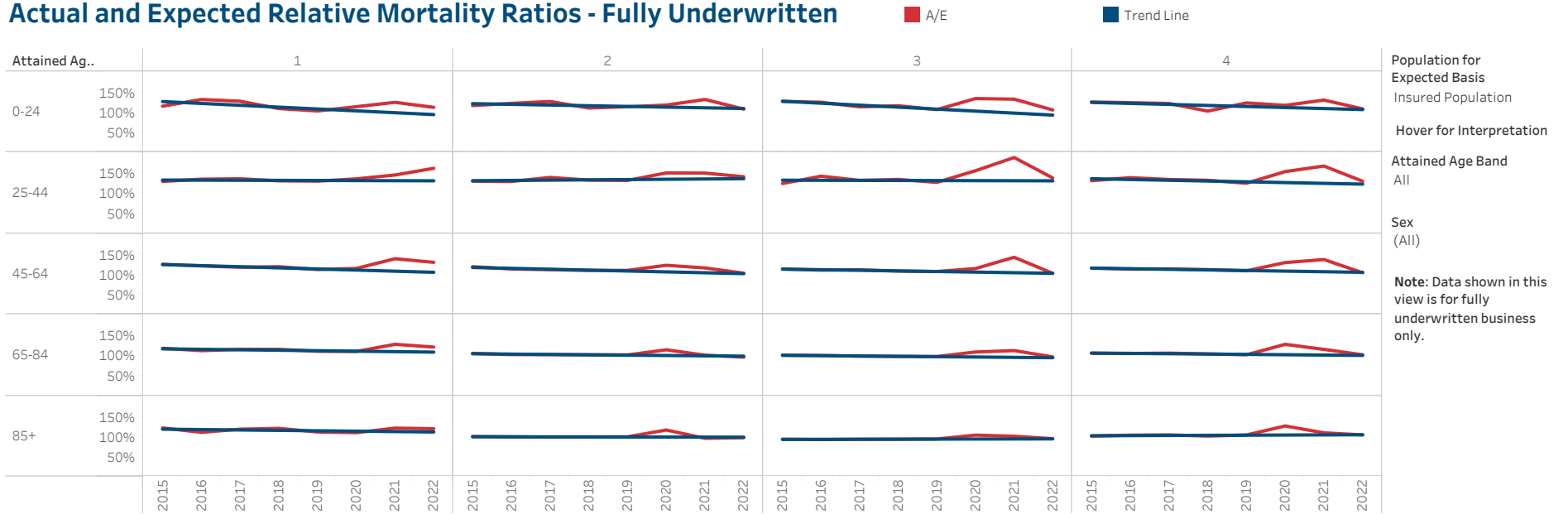
Actual and Expected Relative Mortality Ratios - Fully Underwritten



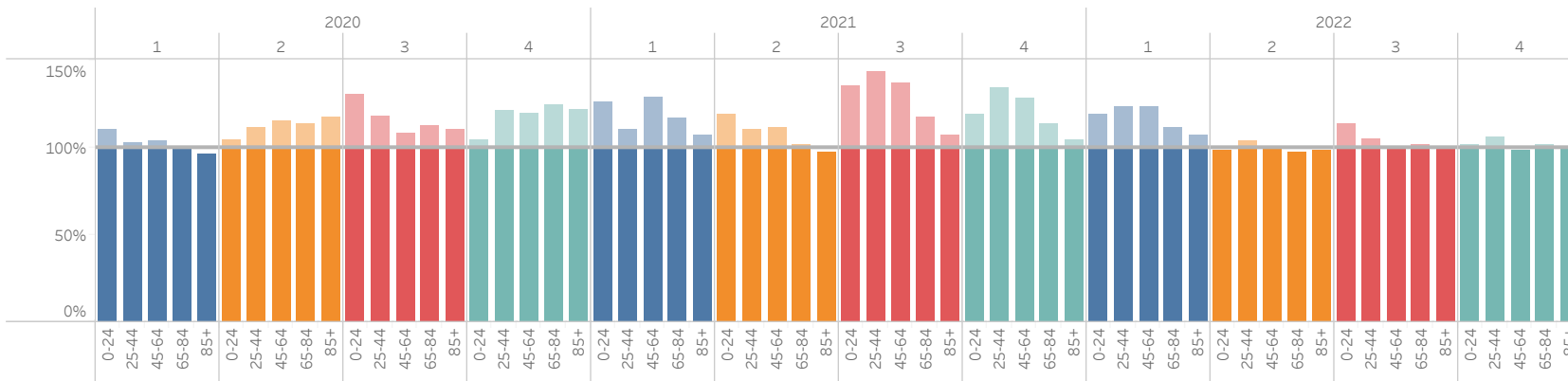
2020 - 2022 Ratio of Actual to Expected Relative Mortality Ratios - Fully Underwritten



Actual and Expected Relative Mortality Ratios - Fully Underwritten



2020 - 2022 Ratio of Actual to Expected Relative Mortality Ratios - Fully Underwritten



Actual and Expected Relative Mortality Ratios - Fully Underwritten

A/E

Trend Line



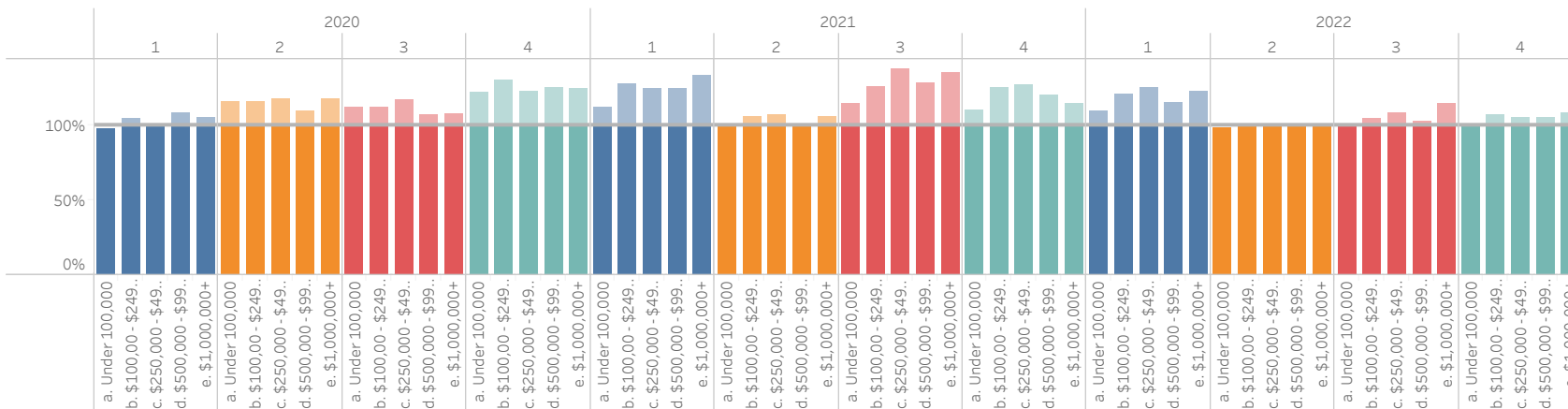
Population for Expected Basis
Insured Population

Hover for Interpretation

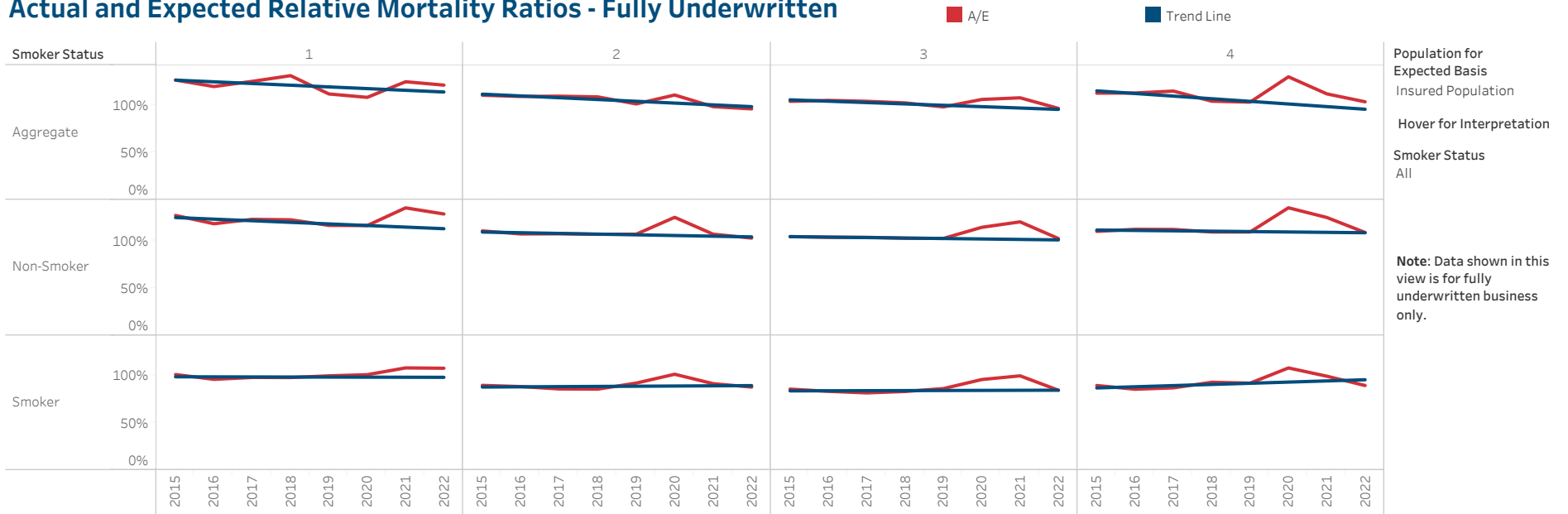
Face Amount Band
All

Note: Data shown in this view is for fully underwritten business only.

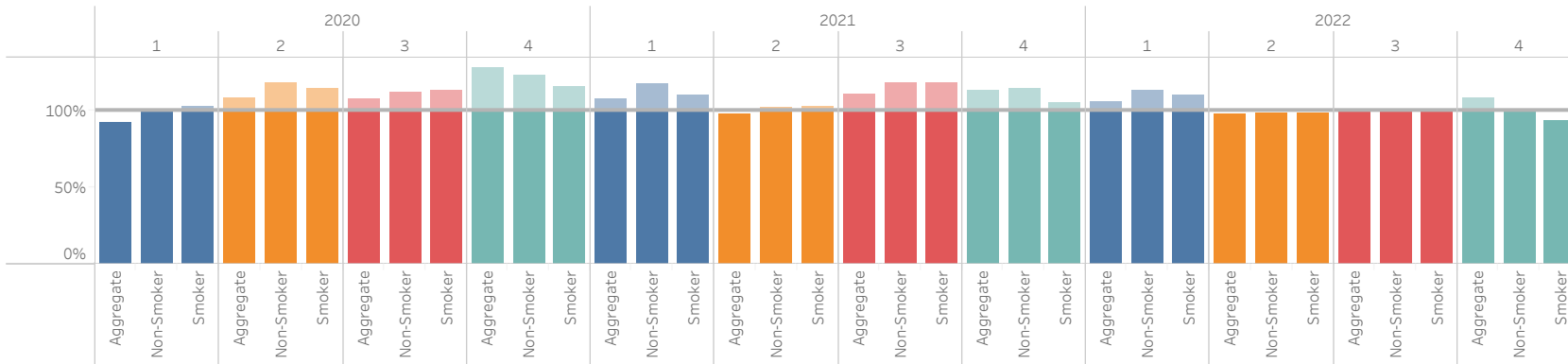
2020 - 2022 Ratio of Actual to Expected Relative Mortality Ratios - Fully Underwritten



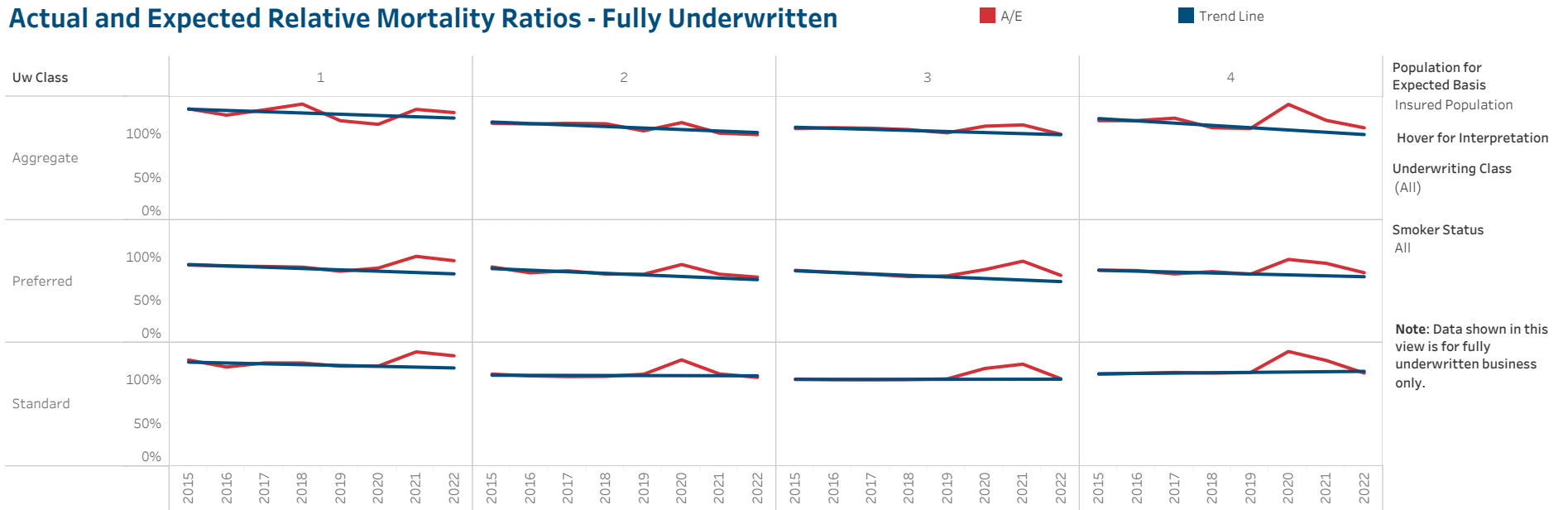
Actual and Expected Relative Mortality Ratios - Fully Underwritten



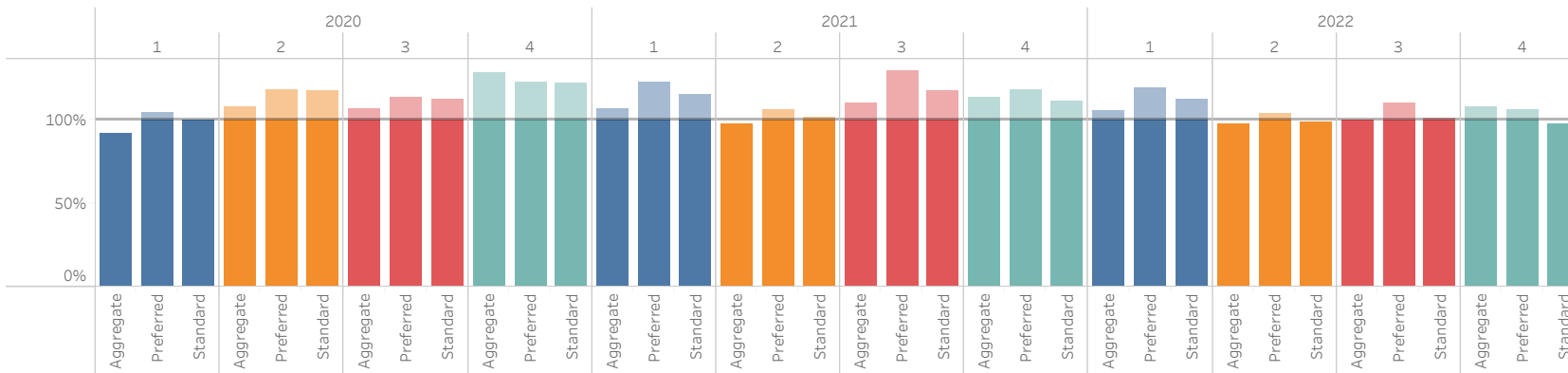
2020 - 2022 Ratio of Actual to Expected Relative Mortality Ratios - Fully Underwritten



Actual and Expected Relative Mortality Ratios - Fully Underwritten



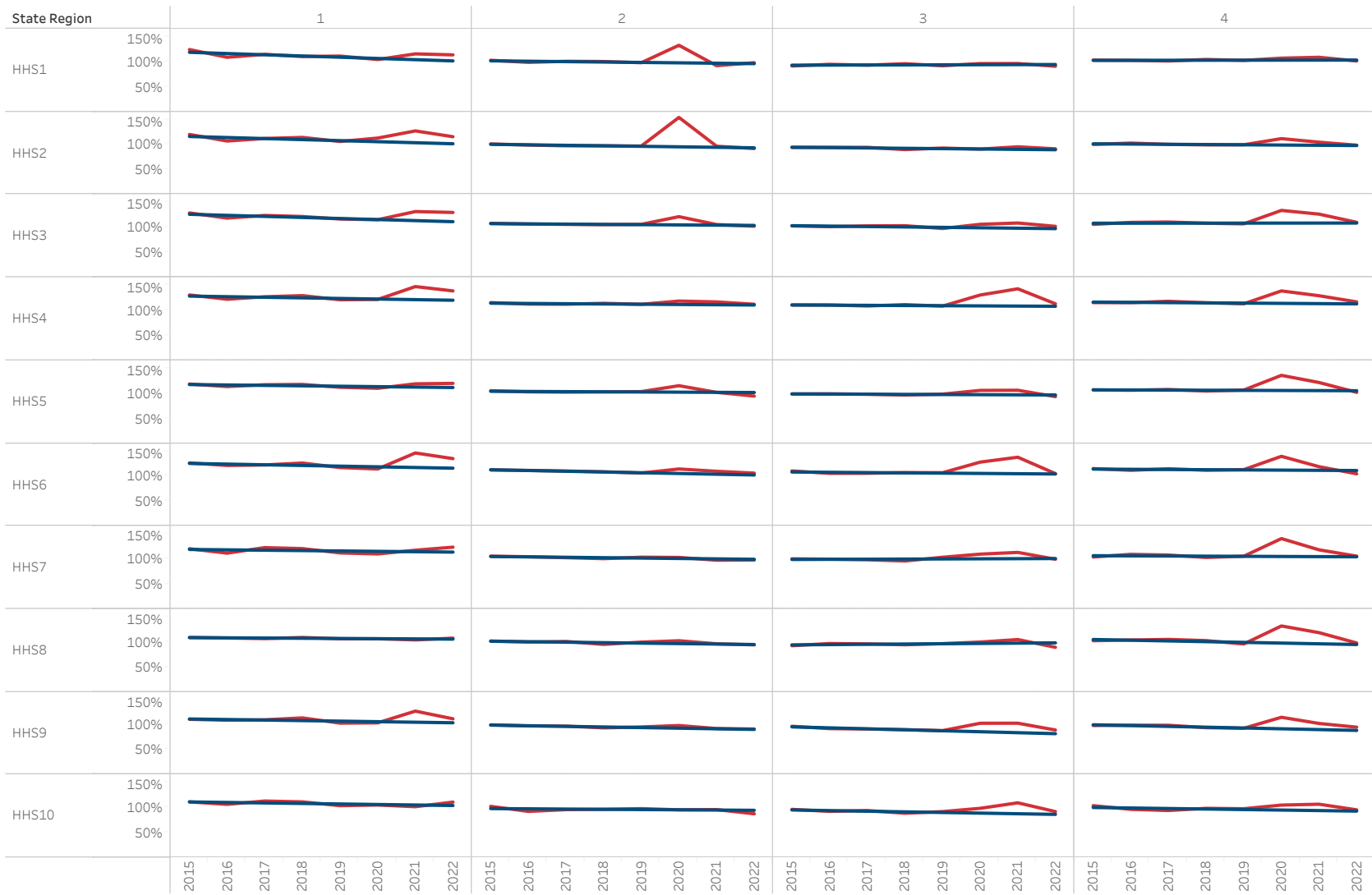
2020 - 2022 Ratio of Actual to Expected Relative Mortality Ratios - Fully Underwritten



Actual and Expected Relative Mortality Ratios - Fully Underwritten

A/E

Trend Line



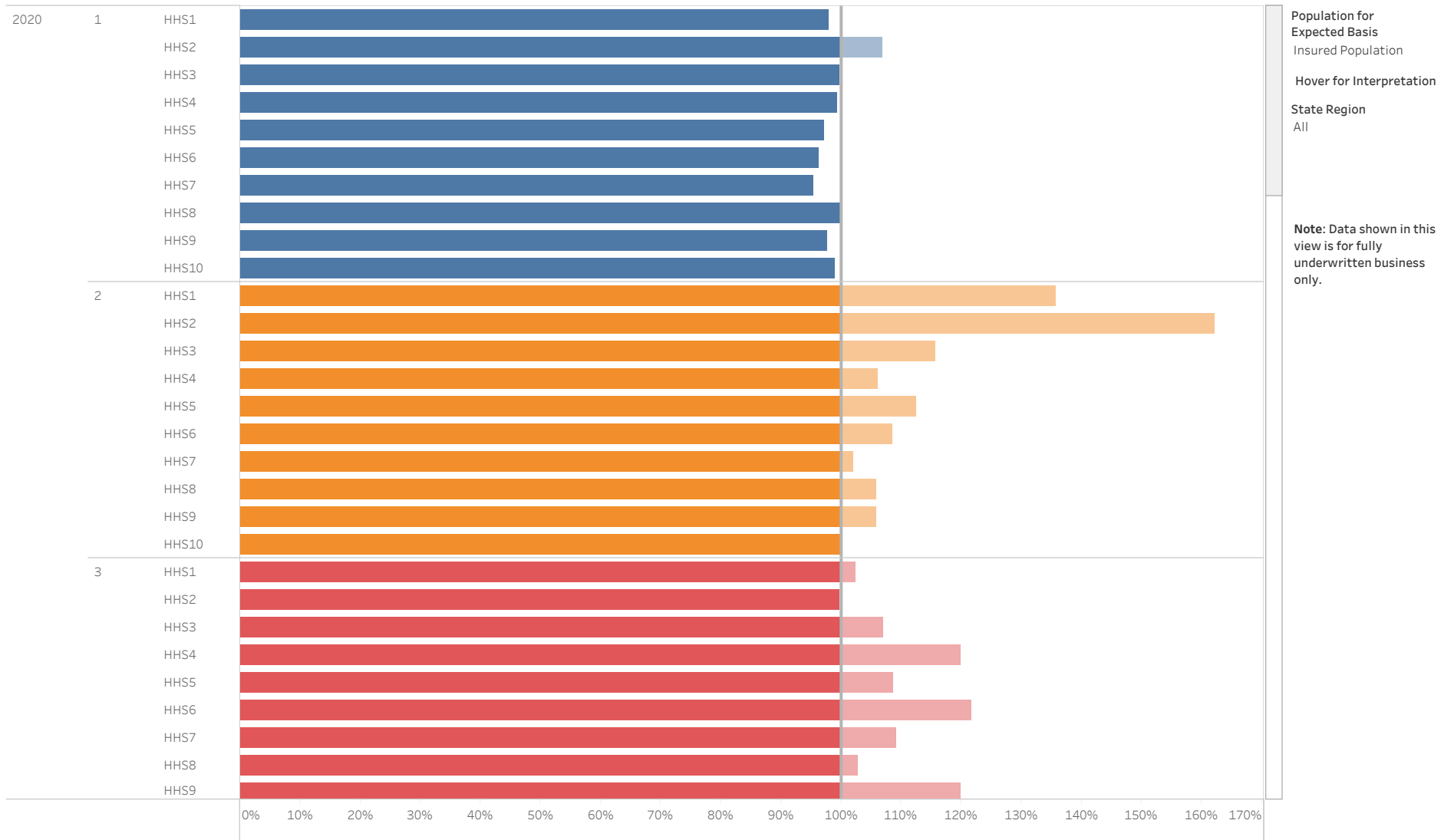
Population for Expected Basis Insured Population

Hover for Interpretation

Region All

Note: Data shown in this view is for fully underwritten business only.

2020 & 2021 Ratio of Actual to Expected Relative Mortality Ratios - Fully Underwritten



2015 - 2022 Claims and Exposure by Quarter and Sex

Sex	Year	1		2		3		4		Sex (All)
		Claims	Exposures	Claims	Exposures	Claims	Exposures	Claims	Exposures	
Female	2015	33,800	4,152,661	30,418	4,209,544	28,494	4,262,251	31,202	4,269,727	
	2016	32,802	4,235,103	29,988	4,256,281	29,402	4,317,476	32,863	4,331,725	
	2017	34,388	4,254,336	30,724	4,320,865	29,616	4,382,923	33,238	4,395,945	
	2018	35,245	4,313,463	30,832	4,380,423	30,212	4,443,721	33,137	4,456,082	
	2019	34,480	4,370,111	32,137	4,431,113	31,094	4,487,611	33,684	4,494,666	
	2020	35,636	4,453,468	37,913	4,478,836	36,226	4,553,615	41,463	4,577,077	
	2021	41,117	4,502,105	34,326	4,583,704	38,747	4,658,016	40,188	4,680,320	
	2022	41,365	4,593,907	33,607	4,662,644	34,425	4,723,730	37,003	4,732,803	
Male	2015	71,716	5,391,172	63,768	5,443,673	60,984	5,494,305	67,074	5,486,101	
	2016	67,347	5,420,616	61,780	5,425,741	60,200	5,486,236	66,802	5,486,852	
	2017	69,050	5,368,791	61,005	5,431,353	59,335	5,492,425	66,709	5,491,861	
	2018	68,744	5,369,885	60,435	5,432,740	58,686	5,494,353	65,282	5,493,725	
	2019	65,844	5,370,509	61,202	5,427,314	59,329	5,481,070	62,588	5,474,294	
	2020	65,689	5,407,194	69,634	5,417,981	65,475	5,487,987	78,379	5,497,266	
	2021	75,728	5,386,140	60,971	5,461,860	68,899	5,532,966	71,290	5,542,272	
	2022	72,881	5,422,708	59,229	5,486,156	59,385	5,544,299	62,911	5,541,363	

2015 - 2022 Claims and Exposures by Quarter and Attained Age

Attained Age	Year	1		2		3		4		Attained Age All
		Claims	Exposures	Claims	Exposures	Claims	Exposures	Claims	Exposures	
0-44	2015	2,294	3,410,695	2,344	3,445,488	2,288	3,474,462	2,400	3,465,013	
	2016	2,421	3,425,634	2,317	3,432,949	2,516	3,470,492	2,490	3,469,570	
	2017	2,387	3,401,094	2,460	3,449,305	2,342	3,492,821	2,398	3,495,372	
	2018	2,290	3,426,267	2,337	3,477,625	2,413	3,525,497	2,382	3,531,746	
	2019	2,282	3,461,755	2,403	3,508,456	2,323	3,550,424	2,334	3,551,750	
	2020	2,451	3,519,766	2,691	3,540,488	2,885	3,599,590	2,834	3,618,371	
	2021	2,712	3,563,479	2,853	3,633,756	3,586	3,696,322	3,179	3,718,876	
	2022	2,963	3,652,490	2,677	3,706,615	2,638	3,750,948	2,536	3,753,563	
45-64	2015	13,892	3,928,291	13,397	3,969,363	12,956	4,008,886	13,167	4,005,327	
	2016	13,645	3,960,335	12,914	3,966,079	12,584	4,010,965	12,947	4,011,383	
	2017	13,206	3,924,062	12,519	3,967,426	12,601	4,007,947	12,932	4,003,278	
	2018	13,225	3,910,309	12,418	3,950,623	12,346	3,988,589	12,842	3,980,880	
	2019	12,773	3,885,540	12,489	3,920,808	12,306	3,953,166	12,579	3,942,005	
	2020	13,010	3,886,255	14,161	3,887,806	13,588	3,931,448	15,057	3,931,120	
	2021	15,822	3,846,279	13,667	3,891,532	16,735	3,933,170	16,151	3,930,634	
	2022	15,010	3,839,026	12,014	3,877,452	12,140	3,912,519	12,156	3,904,112	
65-74	2015	17,496	1,267,139	16,507	1,292,026	16,022	1,316,339	16,467	1,327,397	
	2016	17,335	1,323,741	16,215	1,336,147	16,331	1,362,756	17,282	1,374,893	
	2017	17,964	1,355,915	16,788	1,381,478	16,425	1,406,275	17,499	1,416,056	
	2018	18,263	1,393,474	16,858	1,417,659	16,930	1,441,478	17,756	1,450,056	
	2019	18,271	1,426,630	17,466	1,450,585	17,105	1,474,231	17,891	1,482,413	
	2020	19,219	1,472,844	20,234	1,484,954	20,184	1,513,654	23,137	1,525,095	
	2021	24,059	1,501,322	19,288	1,527,754	22,494	1,551,468	22,931	1,555,593	
	2022	23,051	1,523,660	18,269	1,542,396	18,549	1,560,339	19,762	1,561,824	
75-84	2015	27,965	636,048	25,017	642,438	23,882	649,796	25,703	650,943	
	2016	26,606	644,307	24,366	645,822	23,888	655,395	25,678	658,701	
	2017	27,636	646,994	24,368	657,140	23,767	668,610	26,000	673,851	
	2018	27,935	663,641	24,548	676,000	23,977	688,680	26,111	693,635	
	2019	27,381	681,971	25,259	692,165	24,513	702,174	26,010	704,600	
	2020	27,797	698,137	29,260	701,173	28,101	712,351	33,799	715,926	
	2021	32,534	702,705	26,115	715,575	29,197	729,990	30,662	738,053	
	2022	32,248	730,020	26,169	748,538	27,062	767,259	28,785	777,335	
85+	2015	43,874	301,754	36,927	303,993	34,332	307,162	40,539	307,237	
	2016	40,148	301,785	35,962	301,102	34,287	304,174	41,284	304,094	
	2017	42,245	295,113	35,595	296,918	33,817	299,744	41,118	299,296	
	2018	42,276	289,702	35,108	291,300	33,232	293,874	39,328	293,533	
	2019	39,618	284,766	35,722	286,456	34,177	288,732	37,460	288,238	
	2020	38,850	283,706	41,203	282,438	36,945	284,602	45,015	283,875	
	2021	41,718	274,502	33,374	276,991	35,636	280,076	38,556	279,480	
	2022	40,974	271,461	33,708	273,842	33,422	277,007	36,680	277,377	

Methodology

The analyses included in this dashboard were based on reported claims submitted by participating companies through June 2023. Death occurring after December 2022 were omitted from the analyses to minimize distortions due to reporting lags. Any deaths prior to the end of December 2022 that were not yet shared by company contributors at the time of this report may impact the analysis, but the authors feel the impact will likely be minimal.

The primary goal of this dashboard is to communicate industry mortality experience starting with the pandemic through the date noted above, and to share the level of excess mortality observed each quarter since the pandemic started. The expected mortality trend is based on the five calendar years prior to the pandemic (2015 – 2019) and is a very important assumption in any pandemic-related excess mortality result.

Starting with 2020 results, Expected Relative Mortality Ratios were developed independently for each relevant sub-segment of the experience. For example, separate 2020 Expected Mortality Ratios were developed for each quarter and face amount group and then compared against the 2020 Actual Mortality Ratios. Additional subsets of trends can be viewed by sex, attained age group, underwriting class, smoker status, product type, geographic region, and underwriting method. The inclusion of these graphs allows the user to assess for themselves the appropriateness of the trend line any of the excess mortality results.

After examining various subsegments of business, it was felt that the development of a trend line was more appropriate than using an average of the Actual Relative Mortality Ratios over a period of time, such as 2015-2019, or a single year ratio, such as 2019. The use of recent trends captures emerging trends in factors such as mortality improvement or mix of business.

Only single life, base policies are included for the purposes of this analysis. Various categories of policies were excluded from our analysis:

- Joint life policies
- Policy riders
- Policies with residences outside of the U.S.
- Policies issued prior to 1950

Certain views may be excluded if the expected claim count is fewer than 50.

Definitions | [Hover for description](#)

Actual Relative Mortality Ratio

Actual to Expected Relative Mortality Ratio

Excess Mortality

Expected Relative Mortality Ratio

Relative Mortality Tables

Trend line

Participating Companies

AI&G Life

Allstate

Ameritas Life Insurance Corp.

Amica Life

Baltimore Life

CNO Financial Group

Equitable

Global Atlantic Financial Group

Guaranty Life Insurance Company