**Life Actuarial (A) Task Force Exposure:**

**Exposure Questions**

**Life insured rates of mortality improvement for use with AG38 and VM20**

**for 2025 valuation purposes**

**Please include comments on the questions below (background and additional context information begins on page 2).**

Commenters are requested to respond to the following questions from the SOA LMISG (Life Mortality Improvement Subgroup) of the MLOAC (Mortality and Longevity Oversight Advisory Council).

These questions are related to the development of a recommendation that individual life insured historical (HMI) and future mortality improvement (FMI) scales be developed using industry experience rather than general population experience. The industry experience is derived from data that was collected by MIB and NAIC under VM-51.

Questions:

1. Older Age Insured MI

Is there any industry insight regarding the difference in mortality improvement between the general and insured population at ages 80 and older? There appears to be a divergence in general and insured population mortality improvement at these ages with the general population showing continued mortality improvement while the insured population data indicates declining mortality improvement levels going below 0 at ages over 86.

1. Smoker versus NonSmoker Insured MI

Are there any reservations regarding combining smoker and non-smoker populations for purposes of the HMI scale recommendation for 2025?

Although we do see a difference in HMI for smokers versus nonsmokers, the inclination of LMSIG is not to split the insured HMI or FMI rates by smokers versus nonsmokers but to have a single set of rates that apply to both. The thinking behind this approach is that the proportion of the individual life insured exposure that is smoker is small and does not provide a credible basis for quantifying differences in experience.

1. Male versus Female Insured HMI Smoothing by Age Group

VM20/AG38 HMI and FMI published rates are smoothed by averaging across age groups. For 2025, LMISG recommends averaging across different age groups for males and females. Are there any concerns with this approach?

**Background:**

LMISG is responsible for determining an appropriate methodology for the development of individual life insured mortality improvement (MI) scales to be used in conjunction with AG38 and VM20. The SOA has published these scales each year for use in the upcoming yearend valuation work.

The methodology that has been used to date has relied on US general population data published by the Social Security Administration (SSA) to develop HMI and FMI scales. The new methodology would seek to utilize direct insured MI data or, alternatively, to identify a segment of the general population that better represents the insured population.

The preliminary recommendation of LMISG is to use the actual life insured industry experience for developing life insured MI rates. The source for this experience would be the data collected by MIB and the NAIC as part of the current mandatory data calls for individual life insurance. These rates are then adjusted for any industry trends that have impacted changes in rates of mortality, but are not driven by true biometric factors. In order to determine the adjustments needed, a predictive model was developed and key factors impacting mortality trend were identified. One of the key factors identified is changes in face amount distribution over time for the insured population.

In order to analyze the adjusted insured mortality experience, LMSIG developed an excel-based analysis tool. Based on that analysis, our inclination is to recommend using the insured experience directly wherever that data is credible. There are, however, a few areas where we would like to request industry input and commentary.

1. Older Age Insured MI

Is there any industry insight regarding the difference in mortality improvement between the general and insured population at ages 80 and older?

At most life insured attained ages (35-80), the individual life insurance population HMI is greater than the US general population HMI. At ages under 35, where there are fewer deaths and less data credibility, the insured results are similar to the general population results. But at the oldest ages (80 and older), the insured MI is materially lower than that of the US general population. We would expect that continued medical advances would result in at least some improvement at these ages, but we are actually seeing small rates of deterioration. One suggested possibility is that this is due to the impact of the life settlements market on insured data - leading to decreased lapses at older insured ages and therefore more impaired lives in this segment of the population. Please refer to the charts below for additional context.

**Historical Mortality Improvement Rates**Experience Period = 2011-2019

Policy Count Basis, Data Adjusted (Normalized) for Changes in Face Amount Distribution over the Experience Period, Ages 20 and older only, Term and Permanent Business Combined

1. Smoker versus Nonsmoker Insured MI

Are there any reservations regarding the approach of combining smoker and non-smoker populations for purposes of the HMI scale recommendation for 2025?

Although we do see a difference in HMI for smokers versus non smokers, the inclination of LMIAF is not to split the insured HMI rates by smokers versus non smokers but to have a single set of rates that apply to both. The thinking behind this approach is that the proportion of the individual life insured exposure that is smoker is too small to provide a credible basis for quantifying differences in experience.

1. Male versus Female Insured HMI Smoothing by Age Group

HMI rates are smoothed by averaging across age groups. For 2025, LMISG recommends different age groups for males and females. Are there any concerns with this approach?

The first chart below represents the unsmoothed rates of HMI for male and female insureds based on insured data for ages 20-80 using the recommended methodology. HMI rates continue to be split by sex and attained age only.

The second chart below represents the unsmoothed rates of HMI for the VM20 published scale for 2024 valuation purposes.

One of the differences we are seeing in applying the insured data versus the general population data in determining MI rates is the difference in pattern between males and females at ages between 20 and 50. Note that for the scale based on the insured data, there is a pattern of deterioration at these ages that skews older for males than for females. In applying the general population data to determine the HMI rates as we have in the past, the male and female deterioration at these ages follows a more similar pattern.

Our current thinking is that we would use different averaging age ranges for males and females to smooth rates.