Life Actuarial (A) Task Force
Amendment Proposal Form*

1.   Identify yourself, your affiliation and a very brief description (title) of the issue.

        American Academy of Actuaries Life Reserve Working Group - VM-20 Mortality Section

2.   Identify the document, including the date if the document is "released for comment," and the location in the document where the amendment is proposed:

        VM-20: Requirements for Principle-based Reserves for Life Products, Draft dated 10/6/2011, Section 9C

3.   Show what changes are needed by providing a red-line version of the original verbiage with deletions and identify the verbiage to be deleted, inserted or changed by providing a red-line (turn on "track changes" in Word®) version of the verbiage. (You may do this through an attachment.)

        See below - wording will follow if LATF agrees to concept/structure. Note: If a particular section of Section 9C is not specifically clarified or identified in the memo as a change, it is considered to remain the same.

4.   State the reason for the proposed amendment? (You may do this through an attachment.)

        The feedback from the participants in the VM20 Impact Study conducted by Towers Watson on behalf of the NAIC, indicated that the determination of the mortality assumption, as stated within VM20, was overly complex and complicated. In addition, the results from the study showed a fairly high margin on the mortality assumption. For the participants in the study, there appeared to be some uncertainty as to the differences between a credibility segment and mortality segment. The incorporation of statistical credibility theory added complexity and the process for blending anticipated experience assumptions with industry experience was not clear. In addition, the resulting prudent estimate assumptions had excessive conservatism through application of both an explicit margin, as defined within Section 9C of VM20, and an implicit margin through the credibility blending process. Therefore, the changes are necessary to simplify the process for determining the anticipated experience and prudent estimate experience assumptions. The significant changes include:

        -   Eliminate the concept of credibility segments and clarify concept/purpose of mortality segments;

        -   Eliminate the simplified approach if less than 30 deaths;

        -   Added clarity and more prescription in terms of how to grade and when to begin grading anticipated experience assumptions with industry experience;

        -   Provide more flexibility to blend mortality experience with an industry table by allowing any credibility procedure that follows accepted actuarial practice;

        -   Require companies to grade into 100% industry mortality for attained ages 90 and above;

        -   Explicitly allow for adjustments to mortality rates to ensure appropriate and reasonable relationships exist by attained age, within select period within each mortality segment;

        -   Allow for industry table to be incorporate mortality improvement factors, as determined by either SOA or NAIC from mid-point of underlying study period for table to the valuation date; and

        -   Remove two-step margin which varies by level of a company's credibility of their mortality experience and replace with a flat margin, which varies by age. The margin levels are still under discussion.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
1/25/12	JLE		
Notes:			

VM-20 proposed approach to mortality determination (changes to current VM-20 requirement)

1. Eliminate concept of credibility segment.

2. Eliminate simplified approach. The 30 death "trigger point" is eliminated.

3. Permit flexibility in reflecting the level of credibility (subject to prescribed guardrails) and eliminate the requirement that a statistical credibility procedure be utilized to blend each mortality experience rate with an industry table

4. Mortality segments will be retained, but wording will be added to clarify that the purpose of each mortality segment is to determine separate anticipated experience mortality assumptions for groups of policies that the company expects will have different mortality experience than other groups (such as male vs. female, smoker vs. non-smoker, preferred vs. super-preferred vs. residual, etc).

5. Company experience data shall be based on experience in the following order of priority:

    a. Actual company experience for book of business.

    b. Experience from other books of business within the company with similar underwriting.

    c. Reinsurance experience from reinsurance pools in which the company participates, provided the policies have similar underwriting and expected experience characteristics.

    d. Experience from other sources if available and appropriate and the policies have similar underwriting and expected experience characteristics.

6. If company experience data is not available or limited, the company can choose to use an appropriate industry basic table or modified industry table in lieu of company experience. A modified industry table might be appropriate to take into consideration of joint life mortality, simplified underwriting, substandard or rated lives, etc. If no industry basic table appropriately reflects the risk characteristics of the mortality segment, the company may use any well-established industry table that is based on the experience of policies having the appropriate risk characteristics in lieu of an industry basic table. Maintain current requirement that a company may adjust the industry basic tables up or down 2 tables from that determined by application of the underwriting criteria scoring procedures. Further adjustments to reflect risk characteristics not captured within the underwriting criteria scoring tool may be allowed upon approval by the Commissioner.

7. To the extent that company experience data is used, anticipated experience assumptions will be determined as follows:

    a. Use the company's best estimate assumption for policy durations in which there exists sufficient company experience data (as defined in item 5 above) upon which that estimate is based. To be considered as having sufficient company experience data, use the last policy duration which has a minimum of [10] claims within the exposure period [need to determine the number of claims for this purpose- idea is to use last duration at which there are 10 or more claims; not the first duration in which there are not at least 10]. Alternatively, could use amount of exposure or possibly the level of credibility rather than number of claims. The anticipated experience mortality rates may be no lower than the mortality rates which are actually expected to emerge and which the company can justify. It is anticipated that each mortality rate may not meet this requirement as a result of the application of smoothing and in order to maintain appropriate mortality relationships among the mortality segments.

    b. Determine an aggregate credibility blending factor over the exposure period where sufficient company experience data exists, using a methodology to determine the level of credibility that follows accepted actuarial practice. Credibility may be determined at either (a) the mortality segment level or (b) at a more aggregate level if the mortality for the sub-classes (mortality segments) was determined using an aggregate level of mortality experience.

c. Beginning in the policy duration at which sufficient company experience data no longer exists, as defined in 7.a above, linearly grade from the best estimate assumption to 100% of the respective industry table. Grading must begin and end no later than the policy durations shown in the table below. *

Credibility of company data	# years in which to begin blending after sufficient data no longer exists	# of years in which the assumption must grade to 100% to an industry table (from the duration where sufficient data no longer exists)
0-19%	2	10
20-39%	4	15
40-59%	6	18
60-79%	8	20
80-100%	10	25

*As noted in 7.a above, the resulting mortality rates are floored at the mortality level which is actually expected to emerge and which the company can justify. It is anticipated that each mortality rate may not meet this requirement as a result of the application of smoothing and in order to maintain appropriate mortality relationships among the mortality segments.

For example:

A company has the following experience:

Non-smoker mortality A/E (with E = 2008 VBT RR 100) = 80%
Company has sufficient company experience data for 12 years
Credibility of data = 60% overall for data for policy durations 1-12
Credibility and # of claims in each policy duration as follows:

Duration	1	2	3	4	5	6	7	8	9	10	11	12	13
Credibility Factor	70%	60%	65%	40%	70%	35%	55%	60%	65%	30%	20%	10%	0%
# claims	500	700	1000	300	500	250	300	200	250	100	80	25	6

Company determines mortality as follows:

With 60% credibility, must start blending 8 years after duration 12 and be at 100% industry no later than 20 years after duration 12 as follows: *{revised chart needed}*

Durations	1-12	13-20	21	22	23	24	25	26	27	28	29	30	31	32+
% own exp	100%	100%	92%	83%	75%	67%	58%	50%	42%	33%	25%	17%	8%	0%
% industry table	0%	0%	8%	17%	25%	33%	42%	50%	58%	67%	75%	83%	92%	100%

8. Notwithstanding item 7, the company must grade into 100% industry mortality for attained ages 90 and above.

9. When determining the company experience mortality rates for each mortality segment, the company can base the mortality on more aggregate experience and use other techniques to further subs divide the aggregate class into various sub-classes or mortality segments (e.g., start with aggregate non-smoker then use conservation of total deaths principal or normalization approach to divide the aggregate mortality into super preferred, preferred and residual standard non-smoker class assumptions). In doing so, company must ensure that when the mortality segments are weighted together, the total number of expected claims is not less than that for the aggregate class.

10. Smoothing shall be utilized, where appropriate, within each mortality segment to ensure that an appropriate relationship exists by attained age within each mortality segment.

11. Mortality improvement shall not be incorporated beyond the valuation date. However, historical mortality improvement from the central point of the underlying experience to the valuation date may be incorporated for both

the underlying experience and the respective industry mortality table, based on actual improvement experienced. The improvement factors for the industry mortality table must be those determined annually by the SOA?? Can we do this?

12. The company may adjust the resulting mortality rates within each mortality segment to ensure that the resulting anticipated assumptions produce a reasonable relationship with assumptions in other mortality segments that reflects the underwriting class or risk class of each mortality segment. Such adjustments must be done in a manner that does not result in a material change in total expected claims for all mortality segments in the aggregate.

13. The level of credibility of the underlying anticipated experience assumption will no longer be reflected in the mortality margin as it is already taken into consideration in the blending approach described above. A flat margin based upon the existing proposed margin table in VM-20 will be used/provided. (The table currently within VM-20 was designed for companies with no credibility in their own data. It reflects individual company volatility around the mean/industry table. Using 100% here is too conservative a margin for companies that have significant experience on their own.) Note: The lower the credibility of a company's experience, the earlier they will have blended their anticipated experience assumption into the respective industry table. This creates an additional implicit margin for companies with less credible experience.

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