

## **Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force Amendment Proposal Form\***

1. Identify yourself, your affiliation and a very brief description (title) of the issue.  
**American Academy of Actuaries' Life Reserves Work Group (LRWG)  
Aggregation of mortality segments for the purpose of determining credibility.**
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:

**Exposure draft APF 2018-17 Aggregation of Mortality Segments, which is a proposal to change VM-20 Sections 9.C.2.d, 9.C.4.b and 9.C.6.b.ii from the Valuation Manual (January 1, 2018 edition), with NAIC Adoptions through August 8, 2017, and VM-31 Sections 3.C.3.b and 3.C.3.m from the same edition of the Valuation Manual, as revised by APF 2017-94.**

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.):

**Please see below.**

4. State the reason for the proposed amendment? (You may do this through an attachment.)
  1. VM-20 requires companies to determine separate prudent estimate mortality assumptions (i.e., separate "mortality segments") for groups of policies that the company expects will have different mortality experience, such as male vs. female, smoker vs. non-smoker, preferred vs. standard, etc. (Section 9.C.1.a.). Section 9.C.2.d allows a company to determine company experience at an aggregate level and subdivide this experience using an appropriate process to determine company experience at a mortality segment level.
  2. The credibility for a group of policies depends on the exposure generated by the policies, so aggregation of groups of policies may have a significant impact on the resulting credibility and thus on the prescribed margins provided in Section 9.C.5.
  3. A company may issue a variety of policies using the same or a similar underwriting process, which may produce similar mortality experience.
  4. Section 9.C.4.b permits the aggregation of mortality experience when determining experience. However, there is little guidance as to the circumstances under which such aggregation should be allowed. This APF proposes such additional guidance, based on the idea that policies with similar underwriting may be aggregated for credibility purposes provided aggregate mortality experience is used in determining mortality segment experience as provided in Section 9.C.2.d.

Comments on the proposed changes:

1. On the Life Actuarial Task Force (LATF) call of May 24, 2018, held to discuss an earlier exposure draft of this APF, the question was raised as to whether the conditions for using aggregate mortality for purposes of determining credibility set forth in Section 9.C.4.b should apply only to "top-down" processes in which an aggregate is first formed and then broken down into mortality subgroups, rather than to the aggregation of previously determined mortality segments.

The LRWG agrees the two approaches will produce similar results, provided (1) that the mortality segments were subject to the same or similar underwriting and (2) that the mortality segment rates are informed by the aggregate experience, i.e., that the mortality segment rates reflect, or potentially could reflect, the aggregate experience, consistent with Section 9.C.2.d. The proposed revisions to the romanettes within Sections 9.C.2.d deal with determining company mortality experience various types of segment aggregation: none, top-down and bottom-up and the proposed changes in Section 9.C.4.b align the determination of credibility with the type of aggregation by referring back to Section 9.C.2.d.

2. The application of Section 9.C.4.b to reinsurers was not clear in prior exposures of this APF. To rectify this, the LRWG recommended in the June 28, 2018 version of the APF that a new paragraph be added immediately following the 9.C.4.b romanettes to clarify that “underwriting processes” for reinsurers do not require the reinsurer to “look through” the treaty to the ceding company’s underwriting of the underlying insureds, but rather refer to the processes by which reinsurers determine the expected mortality that underlies a reinsurance offer to a client company. LATF voted on the June 28, 2018 call to expose this version of the APF.

At the Aug 2, 2018 LATF Boston Meeting there was discussion that this new paragraph was still unclear.

Further discussion within the LRWG after the Boston meeting also noted that this previously proposed and exposed wording did not specifically address affiliate reinsurance. As a result, the LRWG proposes rewording this paragraph to provide more clarity regarding “underwriting processes” for direct insurers, for reinsurers, and add proposed language for affiliate reinsurance when a company assumes policies from an affiliate and does depends upon the affiliate’s underwriting process to determine which risks to accept.

3. Among the comments discussed on the May 24, 2018 LATF call was that requiring similar distribution systems and target markets was overly restrictive and could inhibit development of new types of coverage. It was asserted that having similar underwriting processes should be sufficient for determining which policies may be aggregated for credibility determination. The LRWG agrees that prior version of the APF were too restrictive, but notes that distribution systems and target markets can impact the risk selection process and, to the extent they do, should be considered part of the underwriting process.

The APF exposed on the June 28, 2018 LATF call proposed Guidance Note wording to address these concerns, but as a result of discussion at the Aug 2, 2018 LATF meeting in Boston, LATF requested that wording regarding these issues be moved to within the VM itself rather than reside only in a Guidance Note.

The June 28, 2018 exposure of the APF also included Guidance Note wording regarding “incremental” versus “non-incremental” changes in underwriting processes and the associated demonstrations and evidence required when performing aggregation for credibility purposes in these situations. Again, discussion at the Aug 2, 2018 LATF meeting in Boston led LATF to request that wording regarding these issues be moved to within the VM itself rather than reside only in a Guidance Note.

Additional feedback from some LATF members suggested that the concepts of “incremental” and “non-incremental” changes was also unclear.

As a result the LRWG proposes a new Section 9.C.4.c with six underlying romanettes to address all the issues above within the VM rather than in the Guidance Note to meet the LATF request.

4. In the June 28, 2018 version of this APF the LRWG had suggested that consideration be given to changing Section 9.C.6.b.ii so that the same considerations that apply to the determination of credibility apply to the determination of the sufficient data period. This was retained unchanged in this version.
5. In the June 28, 2018 version of the APF the LRWG suggested changes in VM-31 for reporting requirements resulting from the aggregation of mortality segments for credibility purposes. Since this current revision now addresses top-down and bottom-up aggregation, the LRWG proposes that a new section i) be added within VM-31 Section 3.C.3 to provide the reporting and documentations associated with these aggregation types.
6. During the August 2, 2018 LATF meeting, discussion suggested that it was unclear what experience E should be in the A/E reporting required in what was then VM-31 Section 3.C.3 m).  
Due to the insertion of a new Section 3.C.3.i, this now becomes Section 3.C.3.n. The LRWG proposes adding wording to clarify that this E was intended to be based on the last experience study performed by the company as determined under VM-20 Section 9.C.2.e.

\* This form is not intended for minor corrections, such as formatting, grammar, cross-references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
<b>Notes:</b> Amendment Proposal 2018-17 revised 6_27_18			

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VM-20 Section 9.C.2:

- d. When determining the company experience mortality rates for each mortality segment, the company may:
- i. determine the mortality for each mortality segment separately, with no recourse to aggregate mortality;
  - ii. base the mortality on more aggregate experience and use other techniques to subdivide the aggregate class into various subclasses or mortality segments (e.g., start with aggregate non-smoker then use the conservation of total deaths principle, normalization or other approach to divide the aggregate mortality into super preferred, preferred and residual standard non-smoker class assumptions); or
  - iii. determine the mortality rates for each mortality segment separately based on the experience of that segment, then determine revised segment mortality rates that reflect, or potentially could reflect, the aggregate mortality experience.

If using either the approach in (ii) or (iii), the company must ensure that when the mortality segments are weighted together, the total amount of expected claims is not less than the company experience data for the aggregate class and shall perform, an actual to expected analysis annually for each such mortality segment separately. For purposes of this analysis, the expected mortality shall be that last determined under VM-20 Section 9.C.2.e.

VM-20 Section 9.C.4:

- b. Credibility may be determined at either the mortality segment level or at a more aggregate level. Experience for different mortality segments may be aggregated if the following two conditions are met:

The

- i. the mortality segments were subject to the same or similar underwriting processes; and
- ii. the aggregate mortality experience was used in the process of establishing the company experience mortality rates for the mortality segments, pursuant to Section 9.C.2.d.ii or Section 9.C.2.d.iii

For directly-written policies, “underwriting processes” means the processes by which the direct-writing company determines which risks to accept, which may include the impacts on risk selection of distribution systems and target markets. For assumed policies, “underwriting processes” means the processes by which the assuming company determines which risks to accept, which may be separate and distinct from the underwriting process used by the direct-writing company; however, for a company that assumes policies from an affiliate and depends upon the affiliate’s underwriting process to determine which risks to accept, “underwriting process” means the affiliate’s underwriting process.

For purposes of determining credibility, aggregation of the mortality experience of different types of life insurance products (such as term, whole life, universal life (UL), etc.) and different underwriting and risk classes within these products is permitted when the underlying underwriting processes, including any impact on risk selection attributable to differences in distribution systems or target markets, are the same or similar.

- c. For purposes of determining the similarity of underwriting processes when determining credibility:

i. an underwriting process that is expected to produce similar mortality to a previously established underwriting process, or for which the expected mortality differs from that of a previously established underwriting process only as the result of one or more specific, identifiable modifications to the established process for which the expected change to mortality may be reasonably estimated, may be treated as similar to the previously established underwriting process if these expectations regarding mortality are supported ~~in the PBR Actuarial Report~~ by reinsurance experience data, or published medical, clinical, actuarial, ~~reinsurance experience~~ or industry studies. ~~Alternatively;~~

~~i.ii. alternatively, an underwriting process which has been shown to produce similar mortality to that of ~~an~~ previously established process, or for which the expected change to mortality due to one or more specific, identifiable modifications to a previously established process has been estimated, based on a retrospective demonstration using statistical analyses, predictive model back-testing, or other modeling methods, may be treated as similar to the previously established underwriting processes, ~~if these demonstrations are clearly outlined and explained in the PBR Actuarial Report. Except if the difference between the modified underwriting process and the established underwriting practice is incremental,~~ Such retrospective demonstration shall be carried out and repeated each time the company performs a review of company experience data pursuant to Section 9.C.2.e. ~~To the extent that the judgment of similarity of mortality or expected change to mortality introduces additional uncertainty, the margin should be increased pursuant to Section 9.C.5.d. until such time as the estimated change in expected mortality has been shown to be reasonably verified by the company experience data. Notwithstanding the above, no retrospective demonstration shall be required if the difference between the modified underwriting process and the established underwriting practice is incremental, such as the introduction of a new risk characteristic or a change in the thresholds associated with a risk characteristic;~~~~

~~ii.iii. **Guidance Note:** The intent of this section is to allow aggregation of different types of life insurance products (such as term, whole life, universal life (UL), etc.) notwithstanding (i) and different underwriting and risk classes within these products for purposes of determining credibility when the underlying underwriting processes, including any impact on risk selection attributable to differences in distribution systems or target markets, are similar. The intent is not to allow (ii) above, broad aggregation of the experience of policies underwritten using disparate underwriting methods, such as simplified issue policies with fully underwritten ~~products~~ policies, is not permitted;~~

~~Company experience collected on a mortality segment basis may be aggregated provided that the segments were subject to the same or similar underwriting and the mortality segment rates reflect, or potentially could reflect, the aggregate mortality experience.~~

~~iii.iv. Examples of incremental changes in underwriting processes include the introduction of a new risk characteristic, a change in the thresholds associated with a risk characteristic, etc. The ~~the~~ adoption by a company of a new method of risk assessment modified underwriting process that involves a new or significantly altered ~~processes~~ method of risk assessment, such as accelerated underwriting, is not an incremental change and is thus subject to the ~~requirement for~~ requirements in (ii) above regarding retrospective demonstrations carried out in conjunction with the company's review of company experience data ~~if~~ the new or altered method is to be treated as similar to the previously established underwriting process pursuant to (ii) above. If the new or altered method is to be treated as similar to the previously established underwriting process— pursuant to (i) above (i.e., based on reinsurance experience data, or published medical, clinical, actuarial, ~~reinsurance experience~~ or industry studies), no retrospective demonstration is required;~~

~~v. With regard the requirement for retrospective demonstrations does not apply to changes in underwriting processes, if there is one group of a company assuming policies underwritten by a ceding company using a newly such a modified underwriting process ~~and one group, except to the extent that the modified process is actually used by the assuming company in determining which risks to accept; and~~~~

~~vi. to the extent that the treatment of underwriting processes as similar, the judgment of policies using a previously established underwriting process, showing that the similarity of mortality or the estimate of the expected change to mortality, introduces additional uncertainty, the margin applicable to the mortality assumptions used for other company functions, such as pricing, risk assessment and the preparation of financial statements, for the two groups of policies are consistent could be one part of supporting the company's position that the two underwriting processes should be treated as equivalent increased pursuant to Section 9.C.5.d.~~

d. A single level of credibility shall be determined over the entire exposure period, rather than at each duration within the exposure period. This overall level of credibility shall be used to:

- i. determine the prescribed margin for company experience mortality rates, and <sup>[SEP]</sup>
- ii. determine the grading period (based on the credibility percentage shown in column (1) in the applicable table in Section 9.C.6.b.iii) for purposes of aggregation, grading company experience mortality rates into the applicable industry basic table. <sup>[SEP]</sup>

#### VM-20 Section 9.C.6.b:

- ii. In determining the sufficient data period the company shall first identify the last policy duration at which sufficient company experience data exists (using all the sources defined in Section 9.C.2.b). The sufficient data period then ends at the last policy duration that has 50 or more claims (i.e., no duration beyond this point has 50 claims or more) subject to the limits in Column 2 of the applicable table in Section 9.C.76.b.iii.b. The same aggregation of mortality segments applied for the determination of credibility should be applied ~~to the aggregation of mortality segments~~ for the determination of the sufficient data period.

#### VM-31 Section 3.C.3

Mortality – The following information regarding the mortality assumptions used by the company in performing a principle-based valuation:

~~...~~  
[A new paragraph (i) is inserted and the subsequent paragraphs renumbered in the version of VM-31 that results from APF 2017-94.]

- b. Company Experience – If company experience is used, a description and summary of the company experience mortality rates for each mortality segment, ~~including together with~~ a summary of the company experience mortality rates and emerging experience for any aggregate class that is to be sub-divided into mortality segments ~~and pursuant to VM-20 Section 9.C.2.d.ii, or for each of any aggregate class formed by the resulting aggregation of separate mortality segments, pursuant to VM-20 Section 9.C.2.d.iii.~~

- i. Similarity of underwriting processes. For each underwriting process that is treated as similar to a previously established underwriting process,
  - i. if pursuant to VM-20 Section 9.C.4.c.i, a description, summary and citation for the published medical, clinical, actuarial, or industry studies, or
  - ii. if pursuant to VM-20 Section 9.C.4.c.ii, a description and explanation of the most recent annual retrospective demonstration,

that supports the assertion that mortality experience is expected to be similar to that expected under the previously established underwriting process, or for which the difference in mortality may be, or has been, reasonably estimated. If the retrospective demonstration in (ii) above is no longer repeated annually, documentation that the company experience data has verified the estimated change in expected mortality.

Showing that the mortality assumptions used for other company functions, such as pricing, risk assessment and the preparation of financial statements for the two groups of policies are consistent could be one part of supporting the company's position that the two underwriting processes should be treated as similar for purposes of aggregation.

...

~~m-n.~~ **Actual to Expected Mortality Analysis** – At least once every three years, the results of an actual to expected (without margins) analysis. For mortality segments that result from the sub-division of an aggregate class pursuant to VM-20 Section 9.C.2.d.ii or for which revised segment mortality rates that reflect, or potentially could reflect, more aggregate experience pursuant to VM-20 Section 9.C.2.d.iii, the actual to expected analysis shall be ~~performed~~reported annually for each ~~resulting~~such mortality segment separately. For purposes of this analysis, the expected mortality shall be that last determined under VM-20 Section 9.C.2.e.