**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.

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Annuity mortality tables and non-US lives mortality.

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-M Sections 1 and 2
* VM-31 Section 3.D.3 and Section 3.F.3.i
* VM-20 Sections 3.C.1, 9.C.3.b and , 9.C.3.g
* VM-21 Sections 6.C.3.h, 7.C.9.b and c, 11.B.3 and 11.C.1

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.)

**VM-M: Section 1: Valuation and Nonforfeiture Mortality Tables**

J. 2012 Individual Annuity Reserve Valuation Table

1. Definitions
	* 1. “2012 IAR Table” means that generational mortality table developed by the Joint Academy/SOA Payout Annuity Table Team and containing rates, q 2012+n, derived from a combination of the 2012 IAM Period Table and Projection Scale G2, using the methodology stated in the “Application of the 2012 IAR Mortality Table” paragraph of Appendix A-821 of the AP&P Manual.

x

* + 1. “2012 Individual Annuity Mortality Period Life (2012 IAM Period) Table” means the Period Table containing loaded mortality rates for calendar year 2012. This table contains rates, q 2012, developed by the Joint Academy/SOA Payout Annuity Table Team and is shown in Appendices 1–2 of Appendix A-821 of the AP&P Manual.

x

* + 1. “Projection Scale G2 (Scale G2)” is a table of annual rates, G2x, of mortality improvement by age for projecting future mortality rates beyond calendar year 2012. This table was developed by the Joint Academy/SOA Payout Annuity Table Team and is shown in Appendices 3–4 of Appendix A-821 of the AP&P Manual.
1. 2017 Commissioners Standard Guaranteed Issue Mortality Tables
2. “2017 Commissioners Standard Guaranteed Issue Mortality Table” (2017 CSGI) means that 2017 Guaranteed Issue basic ultimate mortality table with 75% loading, consisting of separate rates of mortality for male and female lives, as well as combined unisex rates, developed from the experience of 2005–2009 collected by the SOA. This table was adopted by the NAIC on Aug. 7, 2018 and is included in the NAIC Proceedings of the 2018 Summer National Meeting.
3. 1994 Group Annuity Reserving (1994 GAR) Table
4. “1994 GAR Table” means that mortality table developed by the Society of Actuaries Group Annuity Valuation Table Task Force and shown on pages 866-867 of Volume XLVII of the Transactions of the Society of Actuaries (1995).
5. 1983 Table a
	1. “1983 Table ‘a’” means that mortality table developed by the Society of Actuaries Committee to Recommend a New Mortality Basis for Individual Annuity Valuation and adopted as a recognized mortality table for annuities in June 1982 by the National Association of Insurance Commissioners. [See 1982 Proceedings of the NAIC II, page 454.]

**VM-M: Section 2:** **Industry Experience Valuation Basic Tables**

1. 2008 Valuation Basic Table (2008 VBT)
2. 2015 Valuation Basic Table (2015 VBT) The 2015 Valuation Basic Table is a valuation table without loads jointly developed by the Academy and SOA for use in determining a company’s prudent estimate mortality assumption for valuations of Dec. 31, 2015, and later. The table consists of the Primary table (Male, Female, Smoker, Nonsmoker and Composite), 10 Relative Risk tables for nonsmokers (Male and Female) and four Relative Risk tables for smokers (Male and Female). Rates for juvenile ages are included in the composite tables. The tables are on a select and ultimate and ultimate-only basis and are available on an age nearest and an age last birthday basis.
3. “2012 Individual Annuity Mortality Basic (2012 IAM Basic) Table” means the unloaded mortality table underlying the 2012 IAM Period Table. This was developed from the 2002 experience table, projected with improvement factors to 2012. The 2000-2004 Payout Annuity Mortality Experience Study includes experience for immediate annuities, annuitizations and life settlement options of individual life insurance and annuity death claims. The experience analyzed excluded substandard annuities, structured settlement annuities and variable payout annuities. The experience represented 16 companies over the exposure period. The result of these efforts was a 2002 experience table.
4. The 1994 Group Annuity Mortality Basic (GAM-94 Basic) Table, developed by the Society of Actuaries Group Annuity Valuation Table Task Force and shown on pages 886-887 of Volume XLVII of the Transactions of the Society of Actuaries (1995).is a static mortality table containing unloaded mortality rates for calendar year 1994. The central calendar year of the modified mortality experience is 1988. Mortality experience is projected from the central experience year of 1988 to central year 1994, to produce a 1994 Basic Table.

**VM-31: Section 3.D.3: Life Report Mortality**

1. Non-US Mortality – Description and rationale for mortality tables used to value non-US blocks of business, pursuant to VM-20 Section 3.C.1.h and VM-20 Section 9.C.3.b.

**VM-31: Section 3.F.3.i: Variable Annuity Report Mortality**

1. Non-US Mortality – Description and rationale for mortality tables and mortality improvement rates used to value non-US blocks of business, pursuant to VM-21 Section 6.C.3.h.

**VM-20:**

**Section 3.C: Net Premium Reserve Assumptions**

**Section 3.C.1.h (new):**

For a group of policies or certificates covering insureds who are not residents of the United States:

1. The company shall use a valuation mortality table based on a non-US industry mortality table developed as described in Section 9.C.3.b.i.
2. Appropriate mortality improvement factors should be used to bring the non-US industry table forward or backward to the same as of date of the corresponding CSO table.
3. Margins consistent with the purpose of US statutory reserve methods shall then be added to the (adjusted) unloaded mortality table. For example, the margins in the non-US valuation rate could be determined by a formula such as CSO rate/unloaded CSO rate x non-US (adjusted) industry rate.
4. When a company uses such non-US valuation mortality table for one block of non-US business, the company should consistently use the same or similarly developed non-US valuation tables for other non-US business.
5. The provisions in Section 3.C.1.f and 3.C.1.g still apply to the non-US valuation mortality table.

**Section 9.C.3 Determination of Applicable Industry Basic Tables**

1. A modified industry basic table is permitted in a limited number of situations where an industry basic table does not appropriately reflect the expected mortality experience, such as joint life mortality, simplified underwriting, ~~or~~ substandard or rated lives, or non-US residence. In cases other than modification of the table to reflect joint life mortality, the modification must not result in mortality rates lower than those in the industry basic table without approval by the insurance commissioner.

For blocks of policies or certificates covering insureds who are not residents of the United States:

1. the company shall use a relevant no load mortality table developed by the regulatory authority or the local actuarial society for the life insurance industry in the country of residence. When a relevant non-US industry table developed by the regulatory authority or the local actuarial society is not available, the company shall use any well-established industry table that is based on the experience of policies having the appropriate risk characteristics or create an industry table based on the lives having the appropriate risk characteristics.

Adjustments shall be made to include margins consistent with those included in the relevant VBT. These Margins for industry experience tables are meant to cover lack of credibility, estimation error, and similar data risks, rather than conservatism. Such mortality tables must be approved by the insurance department of the state of domicile before being used for reserve purposes.

1. When a company uses such non-US Industry mortality table for one block of non-US business, the company should consistently use the same or similarly developed non-US Industry tables for other non-US business.

g. Mortality improvement shall not be incorporated beyond the valuation date in the industry basic table. However, historical mortality improvement from the date of the industry basic table (e.g., Jan. 1, 2008, for the 2008 VBT and July 1, 2015, for the 2015 VBT) to the valuation date shall be incorporated using the improvement factors for the applicable industry basic table as determined by the SOA, adopted by the Life Actuarial (A) Task Force and published on the SOA website, https://www.soa.org/research/topics/indiv-val-exp-study-list/ (Individual Life Insurance Mortality Improvement Scale – for Use with AG38/VM20 – 20XX) for US business. For blocks of policies or certificates covering insureds who are not residents of the United States, appropriate mortality improvement factors should be used to bring the non-US industry table forward to the valuation date; such mortality improvement factors must be approved by the insurance department of the state of domicile before being used for reserve purposes.

**VM-21: Section 6: Requirements for the Additional Standard Projection Amount**

C. Prescribed Assumptions

3. Guarantee Actuarial Present Value

h. For US business, the mortality assumption used shall follow the 2012 IAM Basic Mortality Table, improved to Dec. 31, 2017, using Projection Scale G2 but not applying any additional mortality improvement in the projection.

For a group of contracts or certificates covering insureds who are not residents of the United States:

1. The company shall use a non-US basic individual annuitant mortality table based on a relevant unloaded mortality table developed by the regulatory authority or the local actuarial society for the life insurance industry in the country of residence. When a relevant non-US table developed by the regulatory authority or the local actuarial society is not available, the company shall use any well-established industry table that is based on the experience of policies having the appropriate risk characteristics or create an industry table based on the lives having the appropriate risk characteristics. Adjustments shall be made as necessary to include margins consistent with those included in the 2012 IAM Basic table used to value contracts or certificates covering US lives. These margins are intended to cover lack of credibility, estimation error, and similar data risks, rather than conservatism. Appropriate mortality improvement factors should be used to bring the non-US industry table forward or backward to the same as of date of the 2012 IAM Basic table.
2. Mortality improvement shall be applied to improve the table to Dec. 31, 2017, using an appropriate scale developed by the regulatory authority or the local actuarial society for the life insurance industry in the country of residence with appropriate adjustments where necessary to ensure consistent conservatism. When such mortality improvement scale is not available, the company shall use any well-established projection scale that is based on the experience of policies having the appropriate risk characteristics or create a projection scale based on the lives having the appropriate risk characteristics.
3. Such mortality table and projection scale must be approved by the insurance department of the state of domicile before being used for determining reserve or capital requirements.
4. When a company uses such non-US mortality table for one block of non-US business, the company should consistently use the same or similarly developed non-US tables for other non-US business.

9. Mortality

For US business, the mortality rate for a contract holder with age x in year (2012 + n) shall be calculated using the following formula, where qx denotes mortality from the 2012 IAM Basic Mortality Table, multiplied by the appropriate factor (Fx) from Table 6.9 and G2x denotes mortality improvement from Projection Scale G2:

𝑞𝑥 2012+n= 𝑞𝑥 2012(1−G2𝑥)n∗𝐹𝑥

For non-US business, the mortality rate for a contract holder shall similarly be multiplied by the appropriate factor (Fx) from Table 6.9 after applying appropriate mortality improvement described in Section 6.C.3.h.ii.

**Section 7: Alternative Methodology**

1. Calculation of the *GC* Component

9. Adjusting *GC* for Mortality Experience

The factors that have been developed for use in determining *GC* assume male mortality at 100% of the 1994 Variable Annuity MGDB ALB Mortality Table. Females use a five-year age setback. Companies electing to use the Alternative Methodology that have not conducted an evaluation of their mortality experience shall use these factors, or they shall adjust the factors using the methodology below to apply the mortality defined in Section 11.C. for products without VAGLB. Other companies should use the procedure described below to adjust for the actuary’s prudent estimate of mortality. The development of prudent estimate mortality shall follow the requirements and guidance of Section 11. Once a company uses the modified method for a block of business, the option to use the unadjusted factors is no longer available for that part of its business. In applying the factors to actual in-force business, a five-year age setback should be used for female annuitants.

1. Calculate two sets of NSPs at each attained age:
	1. One using 100% of the 1994 Variable Annuity MGDB Age Last Birthday (ALB) Mortality Table (with the aforementioned five-year age setback for females); and
	2. A second using either:
		1. The prudent estimate mortality if that has been established by the company.
		2. For companies that have not established a prudent estimate mortality assumption, the appropriate percentage of the 2012 IAM Basic Table or the non-US table in in Section 6.C.3.h (if applicable) with Projection Scale G2 ALB (as described in Section 12.B.3).

These calculations shall assume an interest rate off 3.75% and a lapse rate of 7% per year.

1. The *GC* factor is multiplied by the ratio, for the specific attained age being valued, of the NSP calculated using the prudent estimate mortality for blocks with those assumptions or the NSP calculated using the adjusted 2012 IAM Basic Table or the non-US table in in Section 6.C.3.h (if applicable) for blocks without a prudent estimate assumption to the NSP calculated using the 1994 Variable Annuity MGDB ALB Mortality The base factors for females use the values (with the aforementioned five-year age setback).

**Section 11: Guidance and Requirements for Setting Prudent Estimate Mortality Assumptions**

B. Determination of Expected Mortality Curves

3. No Data Requirements

When little or no experience or information is available on a business segment, the company shall use expected mortality curves that would produce expected deaths no less than the appropriate percentage (Fx) from Table 1 of the 2012 IAM Basic Table with Projection Scale G2 or the non-US table and mortality improvement where applied pursuant to Section 6.C.3.h for contracts with no VAGLBs and expected deaths no greater than the appropriate percentage (Fx) from Table 1 of the 2012 IAM Basic Mortality Table with Projection Scale G2 or the non-US table and mortality improvement where applied pursuant to Section 6.C.3.h for contracts with VAGLBs. If mortality experience on the business segment is expected to be atypical (e.g., demographics of target markets are known to have higher [lower] mortality than typical), these “no data” mortality requirements may not be adequate.

C. Adjustment for Credibility to Determine Prudent Estimate Mortality

1. Adjustment for Credibility

The expected mortality curves determined in Section 11.B shall be adjusted based on the credibility of the experience used to determine the curves in order to arrive at prudent estimate mortality. The adjustment for credibility shall result in blending the expected mortality curves with a mortality table consistent with a statutory valuation mortality table. For contracts with no VAGLBs, the table shall be consistent with the appropriate percentage (Fx) from Table 1 of the 2012 IAM Basic Table with Projection Scale G2 or the non-US table and mortality improvement where applied pursuant to Section 6.C.3.h; and for contracts with VAGLBs, the table shall be consistent with the appropriate percentage (Fx) From Table 1 of the 2012 IAM Basic Mortality Table with Projection Scale G2 or the non-US table and mortality improvement where applied pursuant to Section 6.C.3.h. The approach used to adjust the curves shall suitably account for credibility.

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

1994 GAR and 1983 Table a will be needed for valuations using (proposed) VM-22 methodology.

Life insurance that is sold internationally is reinsured into the United States. Mortality for international insureds may vary significantly from that of US insurance markets. The Valuation Manual should be updated to allow for international mortality tables.

\* 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:

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