

**Title 20—DEPARTMENT OF  
INSURANCE, FINANCIAL  
INSTITUTIONS AND  
PROFESSIONAL REGISTRATION  
Division 400—Life, Annuities and Health  
Chapter 1—Life Insurance and Annuity Standards**

**PROPOSED AMENDMENT**

**20 CSR 400-1.130 Annuity Mortality Tables for Use in Determining Reserve Liabilities for Annuities.** The director is amending the existing sections (1) through (5), adding a new section (3), and adding Appendices I through IV.

*PURPOSE: This amendment changes the actuarial table to be used in determining the minimum standard of valuation for any individual annuity or pure endowment contract issued on or after January 1, 2016, except as provided in subsection (E) of section (2) of this rule as amended.*

(1) Definitions.

(A) As used in this rule[, ] “1983 Table A” means that mortality table developed by the Society of Actuaries Committee to Rec[-]ommend 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.

(B) As used in this rule “1983 Group Annuity Mortality (GAM) Table” means that mortality table developed by the Society of Actuaries Committee on Annuities and adopted as a recognized mortality table for annuities in December 1983 by the National Association of Insurance Commissioners.

(C) As used in this rule “1994 Group Annuity Reserving (GAR) Table” means that mortality table developed by the Society of Actuaries Group Annuity Valuation Table Task Force. The 1994 GAR Table is included in the report on pages 865-919 of Volume XLVII of the “Transactions of the Society of Actuaries (1995).”

(D) As used in this rule “Annuity 2000 Mortality Table” means that mortality table developed by the Society of Actuaries Committee on Life Insurance Research. The Annuity 2000 Mortality Table is included in the report on pages 211-249 of Volume XLVII of the “Transactions of the Society of Actuaries (1995).”

**(E) As used in this rule “period table” means a table of mortality rates applicable to a given calendar year (the period).**

**(F) As used in this rule “generational mortality table” means a mortality table containing a set of mortality rates that decrease for a given age from one year to the next based on a combination of a period table and a projection scale containing rates of mortality improvement.**

**(G) As used in this rule “2012 IAR Table” means that generational mortality table developed by the Society of Actuaries Committee on Life Insurance Research and containing rates,  $q_x^{2012+n}$ , derived from a combination of the 2012 IAM Period Table and Projection Scale G2, using the methodology stated in section (3).**

**(H) As used in this rule “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,  $q_x^{2012}$ , developed by the Society of Actuaries Committee on Life Insurance Research and is shown in Appendices I and II.**

**(I) As used in this rule “Projection Scale G2 (Scale G2)” is a table of annual rates,  $G2_x$ , of mortality improvement by age for projecting future mortality rates beyond calendar year 2012. This table was developed by the Society of Actuaries Committee on Life Insurance Research and is shown in Appendices III and IV.**

(2) Individual Annuity or Pure Endowment Contracts.

(A) Except as provided in subsections (B) and (C) of this section, the 1983 Table A is recognized and approved as an individual annuity mortality table for valuation and, at the option of the company, may be used for purposes of determining the minimum standard of valuation for any individual annuity or pure endowment contract issued on or after September 28, 1979.

(B) Except as provided in subsection (C) of this section, either the 1983 Table A or the Annuity 2000 Mortality Table is to be used for determining the minimum standard of valuation for any individual annuity or pure endowment contract issued on or after January 1, 1987.

(C) Except as provided in subsections (D) **and** (E) of this section, the Annuity 2000 Mortality Table shall be used for determining the minimum standard of valuation for any individual annuity or pure endowment contract issued on or after January 1 *[of the year following the effective date of this rule]*, **2001**.

**(D) Except as provided in subsection (E) of this section, the 2012 IAR Table shall be used for determining the minimum standard of valuation for any individual annuity or pure endowment contract issued on or after January 1, 2016.**

**(E)** The 1983 Table A without projection is to be used for determining the minimum standards of valuation for an individual annuity or pure endowment contract issued on or after January 1 *[of the year following the effective date of this rule]*, **2001**, solely when the contract is based on life contingencies and is issued to fund periodic benefits arising from:

1. Settlements of various forms of claims pertaining to court settlements or out of court settlements from tort actions;
2. Settlements involving similar actions such as workers' compensation claims; or

3. Settlements of long-term disability claims where a temporary or life annuity has been used in lieu of continuing disability payments.

**(3) Application of the 2012 IAR Table.**

**In using the 2012 IAR Table, the mortality rate for a person aged x in year (2012+n) is calculated as follows:**

$$q_x^{2012+n} = q_x^{2012}(1 - G2_x)^n$$

**where the  $q_x^{2012}$  and  $G2_x$  are as specified in the 2012 IAM Period Table and Scale G2, Appendices I-IV.**

**The result  $q_x^{2012+n}$  shall be rounded to three decimal places per 1,000, e.g., 0.741 deaths per 1,000. Also, the rounding shall occur according to the formula above, starting at the 2012 period table rate. For example, it is incorrect to use an already rounded  $q_x^{2012+n}$  to calculate  $q_x^{2012+n+1}$ .**

*[(3)]* **(4) Group Annuity or Pure Endowment Contracts.**

(A) Except as provided in subsection (B) and (C) of this section, the 1983 GAM Table, the 1983 Table A and the 1994 GAR Table are recognized and approved as group annuity mortality tables for valuation and, at the option of the company, any one of these table may be used for purposes of valuation for any annuity or pure endowment purchased on or after September 28, 1979, under a group annuity or pure endowment contract.

(B) Except as provided in subsection (C) of this section, either the 1983 GAM Table or the 1994 GAR Table is to be used for determining the minimum standard of valuation for any annuity or pure endowment purchased on or after January 1, 1987 under a group annuity or pure endowment contract.

(C) The 1994 GAR Table shall be used for determining the minimum standard of valuation for any annuity or pure endowment purchased on or after January 1 of the year following the effective date of this rule under a group annuity or pure endowment contract.

*[(4)]* **(5) Application of the 1994 GAR Table.** In using the 1994 GAR Table, the mortality rate for a person age x in year (1994 + n) is calculated as follows:

$$q_x^{1994+n} = q_x^{1994}(1-AA_x)^n$$

where the  $q_x^{1994}[s]$  and  $AA_x[s]$  are as specified in the 1994 GAR Table.

*[(5)]* **(6) Separability.** If any provision of this rule or the application of this rule to any person or circumstance is for any reason held to be invalid, the remainder of the rule and the application of that provision to other persons or circumstances shall not be affected by it.

**APPENDIX I**

**2012 IAM Period Table  
Female, Age Nearest Birthday**

| <b>AGE</b> | <b>1000 * <math>q_x^{2012}</math></b> |
|------------|---------------------------------------|------------|---------------------------------------|------------|---------------------------------------|------------|---------------------------------------|
| 0          | 1.621                                 | 30         | 0.300                                 | 60         | 3.460                                 | 90         | 88.377                                |
| 1          | 0.405                                 | 31         | 0.321                                 | 61         | 3.916                                 | 91         | 97.491                                |
| 2          | 0.259                                 | 32         | 0.338                                 | 62         | 4.409                                 | 92         | 107.269                               |
| 3          | 0.179                                 | 33         | 0.351                                 | 63         | 4.933                                 | 93         | 118.201                               |
| 4          | 0.137                                 | 34         | 0.365                                 | 64         | 5.507                                 | 94         | 130.969                               |
| 5          | 0.125                                 | 35         | 0.381                                 | 65         | 6.146                                 | 95         | 146.449                               |
| 6          | 0.117                                 | 36         | 0.402                                 | 66         | 6.551                                 | 96         | 163.908                               |
| 7          | 0.110                                 | 37         | 0.429                                 | 67         | 7.039                                 | 97         | 179.695                               |
| 8          | 0.095                                 | 38         | 0.463                                 | 68         | 7.628                                 | 98         | 196.151                               |
| 9          | 0.088                                 | 39         | 0.504                                 | 69         | 8.311                                 | 99         | 213.150                               |
| 10         | 0.085                                 | 40         | 0.552                                 | 70         | 9.074                                 | 100        | 230.722                               |
| 11         | 0.086                                 | 41         | 0.600                                 | 71         | 9.910                                 | 101        | 251.505                               |
| 12         | 0.094                                 | 42         | 0.650                                 | 72         | 10.827                                | 102        | 273.007                               |
| 13         | 0.108                                 | 43         | 0.697                                 | 73         | 11.839                                | 103        | 295.086                               |
| 14         | 0.131                                 | 44         | 0.740                                 | 74         | 12.974                                | 104        | 317.591                               |
| 15         | 0.156                                 | 45         | 0.780                                 | 75         | 14.282                                | 105        | 340.362                               |
| 16         | 0.179                                 | 46         | 0.825                                 | 76         | 15.799                                | 106        | 362.371                               |
| 17         | 0.198                                 | 47         | 0.885                                 | 77         | 17.550                                | 107        | 384.113                               |
| 18         | 0.211                                 | 48         | 0.964                                 | 78         | 19.582                                | 108        | 400.000                               |
| 19         | 0.221                                 | 49         | 1.051                                 | 79         | 21.970                                | 109        | 400.000                               |
| 20         | 0.228                                 | 50         | 1.161                                 | 80         | 24.821                                | 110        | 400.000                               |
| 21         | 0.234                                 | 51         | 1.308                                 | 81         | 28.351                                | 111        | 400.000                               |
| 22         | 0.240                                 | 52         | 1.460                                 | 82         | 32.509                                | 112        | 400.000                               |
| 23         | 0.245                                 | 53         | 1.613                                 | 83         | 37.329                                | 113        | 400.000                               |
| 24         | 0.247                                 | 54         | 1.774                                 | 84         | 42.830                                | 114        | 400.000                               |
| 25         | 0.250                                 | 55         | 1.950                                 | 85         | 48.997                                | 115        | 400.000                               |
| 26         | 0.256                                 | 56         | 2.154                                 | 86         | 55.774                                | 116        | 400.000                               |
| 27         | 0.261                                 | 57         | 2.399                                 | 87         | 63.140                                | 117        | 400.000                               |
| 28         | 0.270                                 | 58         | 2.700                                 | 88         | 71.066                                | 118        | 400.000                               |
| 29         | 0.281                                 | 59         | 3.054                                 | 89         | 79.502                                | 119        | 400.000                               |
|            |                                       |            |                                       |            |                                       | 120        | 1000.000                              |

**APPENDIX II**

**2012 IAM Period Table  
Male, Age Nearest Birthday**

| <b>AGE</b> | <b>1000 * q<sub>x</sub><sup>2012</sup></b> |
|------------|--|------------|--|------------|--|------------|--|
| 0          | 1.605                                      | 30         | 0.741                                      | 60         | 5.096                                      | 90         | 109.993                                    |
| 1          | 0.401                                      | 31         | 0.751                                      | 61         | 5.614                                      | 91         | 123.119                                    |
| 2          | 0.275                                      | 32         | 0.754                                      | 62         | 6.169                                      | 92         | 137.168                                    |
| 3          | 0.229                                      | 33         | 0.756                                      | 63         | 6.759                                      | 93         | 152.171                                    |
| 4          | 0.174                                      | 34         | 0.756                                      | 64         | 7.398                                      | 94         | 168.194                                    |
| 5          | 0.168                                      | 35         | 0.756                                      | 65         | 8.106                                      | 95         | 185.260                                    |
| 6          | 0.165                                      | 36         | 0.756                                      | 66         | 8.548                                      | 96         | 197.322                                    |
| 7          | 0.159                                      | 37         | 0.756                                      | 67         | 9.076                                      | 97         | 214.751                                    |
| 8          | 0.143                                      | 38         | 0.756                                      | 68         | 9.708                                      | 98         | 232.507                                    |
| 9          | 0.129                                      | 39         | 0.800                                      | 69         | 10.463                                     | 99         | 250.397                                    |
| 10         | 0.113                                      | 40         | 0.859                                      | 70         | 11.357                                     | 100        | 268.607                                    |
| 11         | 0.111                                      | 41         | 0.926                                      | 71         | 12.418                                     | 101        | 290.016                                    |
| 12         | 0.132                                      | 42         | 0.999                                      | 72         | 13.675                                     | 102        | 311.849                                    |
| 13         | 0.169                                      | 43         | 1.069                                      | 73         | 15.150                                     | 103        | 333.962                                    |
| 14         | 0.213                                      | 44         | 1.142                                      | 74         | 16.860                                     | 104        | 356.207                                    |
| 15         | 0.254                                      | 45         | 1.219                                      | 75         | 18.815                                     | 105        | 380.000                                    |
| 16         | 0.293                                      | 46         | 1.318                                      | 76         | 21.031                                     | 106        | 400.000                                    |
| 17         | 0.328                                      | 47         | 1.454                                      | 77         | 23.540                                     | 107        | 400.000                                    |
| 18         | 0.359                                      | 48         | 1.627                                      | 78         | 26.375                                     | 108        | 400.000                                    |
| 19         | 0.387                                      | 49         | 1.829                                      | 79         | 29.572                                     | 109        | 400.000                                    |
| 20         | 0.414                                      | 50         | 2.057                                      | 80         | 33.234                                     | 110        | 400.000                                    |
| 21         | 0.443                                      | 51         | 2.302                                      | 81         | 37.533                                     | 111        | 400.000                                    |
| 22         | 0.473                                      | 52         | 2.545                                      | 82         | 42.261                                     | 112        | 400.000                                    |
| 23         | 0.513                                      | 53         | 2.779                                      | 83         | 47.441                                     | 113        | 400.000                                    |
| 24         | 0.554                                      | 54         | 3.011                                      | 84         | 53.233                                     | 114        | 400.000                                    |
| 25         | 0.602                                      | 55         | 3.254                                      | 85         | 59.855                                     | 115        | 400.000                                    |
| 26         | 0.655                                      | 56         | 3.529                                      | 86         | 67.514                                     | 116        | 400.000                                    |
| 27         | 0.688                                      | 57         | 3.845                                      | 87         | 76.340                                     | 117        | 400.000                                    |
| 28         | 0.710                                      | 58         | 4.213                                      | 88         | 86.388                                     | 118        | 400.000                                    |
| 29         | 0.727                                      | 59         | 4.631                                      | 89         | 97.634                                     | 119        | 400.000                                    |
|            |  |            |  |            |  | 120        | 1000.000                                   |





*AUTHORITY: Sections 374.045, RSMo Supp. 2014 and 376.380, RSMo 2000.\* This rule was previously filed as 4 CSR 190-13.270. Original rule filed April 2, 1986, effective Aug. 25, 1986. Amended: Filed June 23, 2000, effective Dec. 30, 2000. Amended: Filed January 15, 2015.*

*\*Original authority 374.045, RSMo 1967, amended 1993, 1995, 2008; and 376.380, RSMo 1939, amended 1943, 1947, 1959, 1961, 1965, 1971, 1975, 1979, 1982, 1993.*

*PUBLIC COST: This proposed amendment will not cost state agencies or political subdivisions more than five hundred dollars (\$500) in the aggregate.*

*PRIVATE COST: This proposed amendment will not cost private entities more than five hundred dollars (\$500) in the aggregate.*

*NOTICE OF PUBLIC HEARING AND NOTICE TO SUBMIT COMMENTS: Anyone may file a statement in support of or in opposition to this proposed amendment with the Department of Insurance, Financial Institutions and Professional Registration, Attention: Kelly A. Hopper, P.O. Box 690, Jefferson City, MO 65102. To be considered, comments must be received within thirty (30) days after publication of this notice in the **Missouri Register**. A public hearing is scheduled for 10:00 AM, March 18, 2015, at the Harry S Truman State Office Building, Room 530, 301 West High Street, Jefferson City, Missouri.*

*SPECIAL NEEDS: If you have any special needs addressed by the Americans with Disabilities Act, please notify us at (573) 751-2619 at least five (5) working days prior to the hearing.*