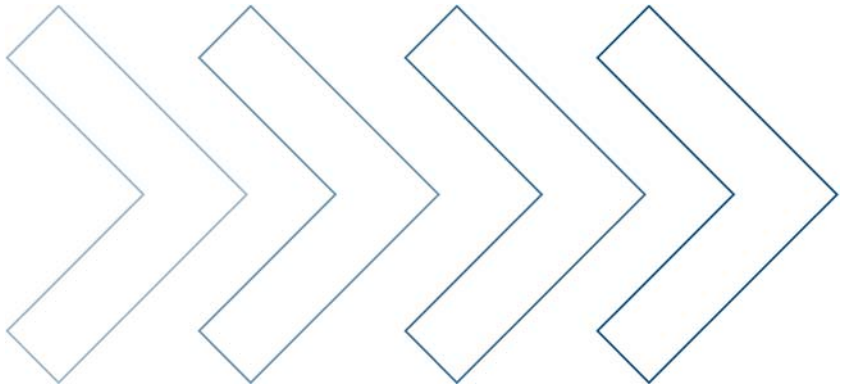
SOCIETY OF ACTUARIES



2000-2008 Structured Settlement
Mortality Experience Report

February 2016

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Caveat and Disclaimer

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Mortality Experience Report

Section 1: Overview

1.1 Background

This report describes the results of the latest intercompany study of mortality experience under Structured Settlement annuities. Structured Settlement annuities consist primarily of workmen's compensation, individual long-term disability claims, and lawsuit settlements that provide a life-contingent income to the plaintiffs. Such periodic and deferred payments have been encouraged and even mandated in some states as a means of controlling costs under malpractice claims and ensuring the monies will be available in future years and not squandered as could happen with lump sum payments.

Because the settlement annuity market is considerably smaller than other insurance annuity markets, all contributors' data are very important. For example, the data contributed by some companies contained as little as one death. Only by combining the data of many companies could we hope to construct a database from which we could derive statistically reliable information. This study includes 4,369 deaths among standard lives and 3,380 among substandard lives. By comparison, the most recent Individual Payout Annuity study included 132,000 deaths. Therefore, some random fluctuation will be evident and credibility will be particularly impacted when results are subdivided into various categories. Accordingly, considerable care must be taken in the interpretation of the results.

MIB's Actuarial and Statistical Research Group collected, validated and summarized the data for this report. In lieu of printed tables, the two Microsoft Excel files published with this report provide Pivot Tables, which access the database and provide the breakdowns described herein. This report highlights a number of those pivot tables with several references to the "tabs," which are the tabs or sheets of the Excel files containing the pivot tables. These pivot tables can be modified to provide alternate breakdowns and information of interest to the individual user. Data for this report were collected in 2005 for study years 2000-04, and in 2009 for study years 2005-08. Since the two blocks came from different sets of companies (albeit with some overlapping), care must be exercised in reviewing trends over the nine-year period.

The study compared, separately for standard and substandard lives, actual to expected (A/E) mortality based on annuity valuation tables [1983 IAM (aka, "1983 Table a"), Annuity 2000 and 2012 IAM] available on the SOA's mortality table site and Social Security/Medicare mortality rates during the study period. In addition, for substandard business, a comparison of actual-to-expected mortality was made based on the "constant extra death (CED) method," which is the minimum valuation standard as prescribed in NAIC Actuarial Guideline IX-A.

This is the fourth such study sponsored by the Society of Actuaries and its Individual Annuity Experience Committee. This study is based on experience during study years 2000 through 2008.

The first study, published in the Transactions of the Society of Actuaries 1991-92 Reports, included experience through calendar year 1989. The second study, published in the Transactions of the Society of Actuaries 1995-96 Reports, included experience through calendar year 1993. The third study, available on the SOA website, looks at experience through calendar year 1997.

Structured settlements do not necessarily have annuity payments in all years. In addition, payments may vary substantially from year to year. Annual income, therefore, cannot be the measure of exposure. Instead, we used the statutory reserve for weighting the "By Amount" computations. Since some companies were unable to provide reserve data, the "By Amount" results only reflect 88% of the contract years of experience and 79% of the deaths relative to the Standard "By Contract" experience. For the Substandard experience, the "By Amount" results reflect 89% of the contract years of experience and 82% of the deaths. Results by amount are, therefore, more vulnerable to random fluctuation.

The study data only reflects contracts providing life contingent payments. We excluded certain-only business because there would likely be underreporting of deaths on such business, plus there is no real reason to study mortality on contracts for which mortality has no financial relevance. For Joint & Survivor annuities, only the person in payment status is counted in the exposure and death statistics.

1.2 Purpose of the Study

The primary purposes of the study are to:

1. Compare emerging structured settlement experience to that assumed in currently-used statutory valuation tables, both standard and substandard.

2. For substandard business, compare the actual to expected experience on a rated-age basis to the A/E using the "true age plus constant extra death (CED)" method pursuant to NAIC Actuarial Guideline IX-A.

3. Help to provide a credible basis for actuaries to assess mortality in this unique line of business where mortality tables based on traditional payout annuities may not be fully representative of this distinct population.

Section 2: Format of the Data

This study was performed on a calendar year basis. Contributing companies received an analysis of their own experience; otherwise, individual company experience is not made public. Rather, all experience is combined and made available by contract years and amount. The data are available with the following breakdowns:

Underwriting Group:	Standard, Substandard
Gender:	Male, Female
Experience Years:	2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008
Issue Age Groups:	0-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81+
Attained Age Groups:	0-5, 6-10, 11-15, 16-20, 21-25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, 61-65, 66-75, 76-85, 86-90, 91-95, 96-100, 101+
Rated Attained Age Groups:	0-10, 11-20, 21-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, 61-65, 66-75, 76-85, 86-90, 91-95, 96-100, 101+
Duration:	0-1 years, 2-5 years, 6-10 years, Ultimate (11+)

The aforementioned Excel spreadsheets contain pivot tables, which subdivide results according to the above categories and allow the user to choose alternate breakdowns.

Section 3: General Commentary

The study combines data for calendar years 2000-2008, which includes 469,488 and 236,769 contract years of experience for standard and substandard lives, respectively. All 21 contributing companies are listed in Section 6. Seven of these companies contributed data for both submission periods, while six contributed for 2000-04 only and eight for 2005-08 only.

The age distribution for this business differs greatly from retirement annuity business. As can be seen in Figures 1a and 1b, the peak issue age for standard issues is at ages 31-40, while substandard issues have a large block of issues at true ages 0-10, followed by a peak at ages 41-50. Both groups show a rapid decline in issues after age 50. By contrast, ages under 50 are usually sparsely represented in retirement annuity mortality studies. Average Attained Ages were approximately 43 and 39 for standard and substandard lives, respectively.

FIGURE 1a
STANDARD CONTRACTS BY ISSUE AGE GROUP

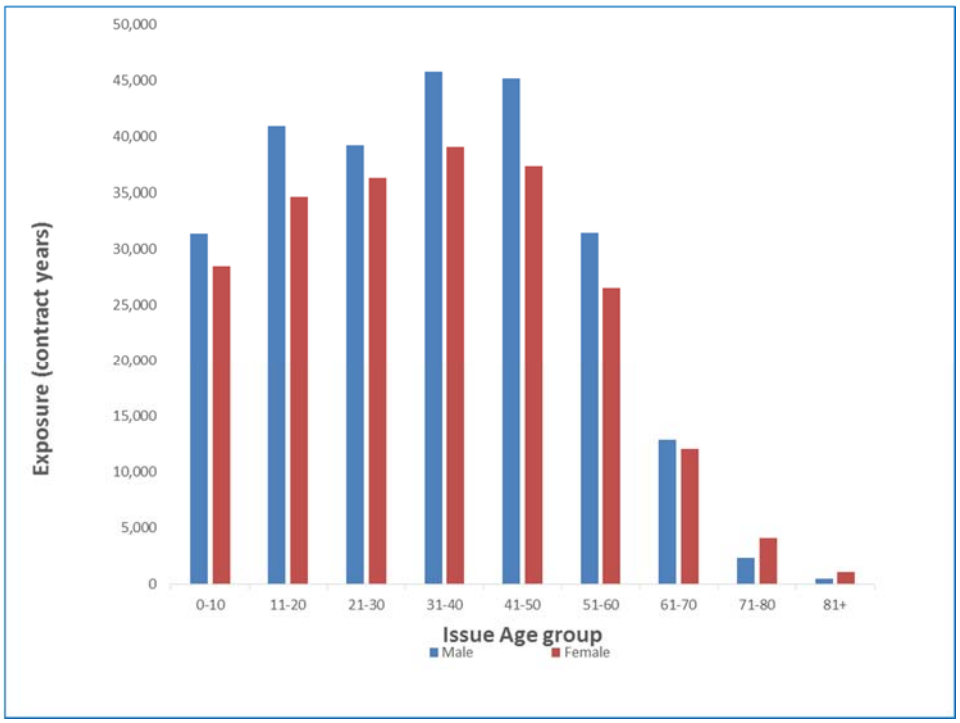
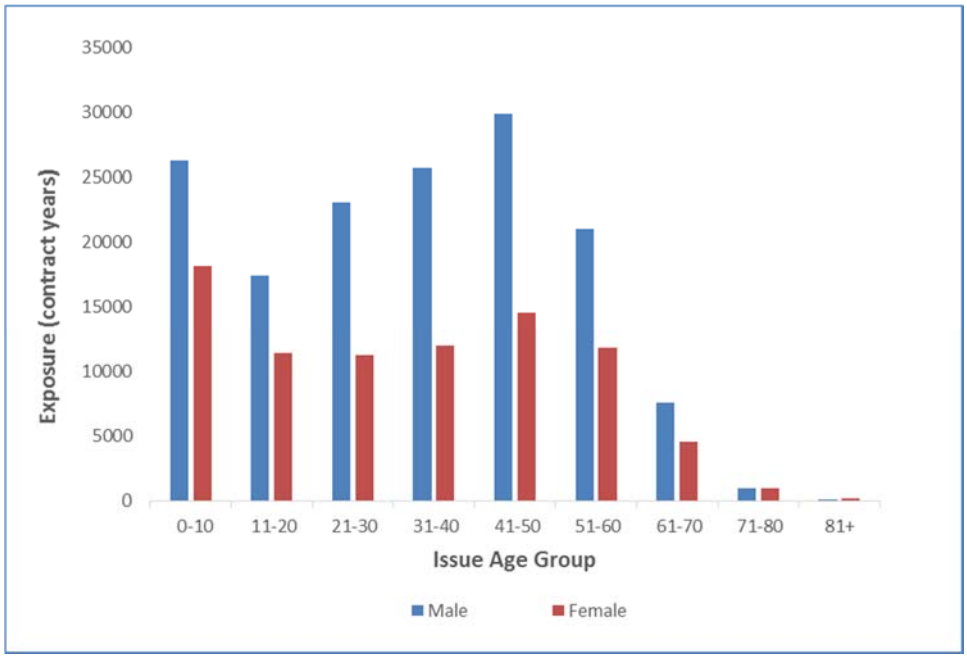


FIGURE 1b
SUBSTANDARD CONTRACTS BY ISSUE AGE GROUP



As will be seen, mortality experience under structured settlement annuities does not fit well with assumed mortality under individual annuity valuation tables. This result is to be expected because these tables were developed from retired lives experience, which has age distributions much different from those of the structured settlement business. Furthermore, individual annuity purchasers tend to have lower mortality due to self-selection and socioeconomic status. In general, structured settlement business exhibits mortality levels well in excess of rates in annuity valuation tables.

Analysis of substandard experience is hampered by a scarcity of data to cover the large number of true age and substandard rating combinations in force. In addition, the multitude of specific impairments that result in substandard ratings cannot be expected to exhibit the same year-by-year excess mortality, even at the same true age and substandard rating.

Section 4: Standard Lives

4.1 Expected Tables

The table below shows the mortality bases available in the data.

Mortality Table	Valuation Margin	Projection
1983 IAM	Included	None
Annuity 2000	Included	None
2012 IAM	Included	None
SSA Table	None	None

The NAIC's Standard Valuation Law requires a mortality improvement projection for mortality rates beyond 2012. All experience used in this study is prior to 2012, and no adjustment has been made to backcast (increase) the mortality rates in the 2012 IAM table for comparison to this earlier period experience. All these tables are included in the Full Summary tab described below. Only two of the valuation tables, 1983 IAM and 2012 IAM, are shown in the Gender and Duration tabs because 1983 IAM is the only prescribed valuation table for this business, and 2012 IAM is the latest valuation table for individual annuities. The Social Security Administration table (SSA Table) used in this study is the unweighted average of the experience rates provided by the Social Security Administration for the nine years of the 2000-08 study period. This 9-year average is used for each study year.

4.2 Full Summary Tab

The initial tab labeled "Full Summary" displays total exposure, deaths, expected deaths and A/E ratios for each table above. These results are shown for both Contract counts and Amount. Naturally, the more recent valuation tables have lower mortality rates and, thus, higher A/E's. None of these tables fit the experience very well; the Social Security/Medicare experience table comes closest, but this may not be a usable table for projecting forward. An implication of this is that Structured Settlement business should have its own mortality tables.

The results on this tab are also broken down by Study Year, which gives some idea of both the trend and the level of random fluctuation. The data seem to indicate a downward trend in mortality rates comparable to that seen in most studies of other populations. The results by amount have lower A/E's than those by contract and, as expected, have higher year-by-year volatilities.

Actual to expected ratios relative to the annuity valuation tables are well over 100%, indicating reserves based on those tables may be excessive. As stated above, this is to be expected given those valuation tables are designed for individual annuity purchasers, a much more select population than this one. However, the breakdowns described in Section 4.3 below will show that this relationship reverses at ages above 86, where the A/E's fall below 100% in this study, as well as the previous studies.

4.3 Gender Tabs

There are three tabs for analyzing summary statistics by gender. The first gender tab, *Summary – Gender & Study Yr*, contains two pivot tables, one by contract and another by amount. The next two gender tabs, *Iss Age & Gender* and *Att Age & Gender*, likewise have two pivot tables, one for Issue/Attained Age groups by contract and another by amount. Exposures, actual deaths and A/E ratios are shown on each tab.

4.3(a) Study Years

The two pivot tables on this tab are displayed sequentially with By Contract appearing first and By Amount second. Individual study years are shown separately.

- By Contract

  Both male and female exposures by contract show steady increases each year within each submission period (2000-04 and 2005-08), although there is a decrease in data submissions in the second period. Overall, the distribution of exposures by contract is roughly 53% male and 47% female throughout the study period. The female proportion was slightly less in the first submission period than the second, but otherwise these percentages were not impacted by the decline in submissions between the two submission periods. As shown in Table 1 below, the average A/E ratios declined during the second period. Nonetheless, they consistently exceeded 100% relative to each mortality table, for both genders and study periods.

Table 1: Actual to Expected Ratios by Contract Years – Standard Issues

A/E Ratios By Contract	2000-2004			2005-2008			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
1983 IAM	166.1%	166.8%	166.4%	139.6%	156.7%	146.4%	154.4%	162.2%	157.5%
2012 IAM	252.2%	202.1%	230.0%	207.7%	188.9%	199.3%	232.3%	196.1%	216.2%
2000-08 SSA	121.7%	113.9%	118.5%	103.4%	108.7%	105.6%	113.6%	111.6%	112.8%

While the decline in A/E's between the two study periods indicates some mortality improvement, most likely it also reflects random fluctuation, differences in the company mix between the periods, and perhaps evolving changes in the Structured Settlement annuitant population.

- By Amount

  As with contract counts, the distribution of exposure by amount remained stable throughout the entire period, 51.5% male and 48.5% female, although the female proportion was slightly lower in the first submission period than the second.

Table 2: Actual to Expected Ratios by Amount – Standard Issues

A/E Ratios	2000-2004			2005-2008			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
1983 IAM	165.8%	159.7%	163.7%	103.3%	100.7%	102.3%	154.4%	134.6%	139.0%
2012 IAM	253.6%	195.5%	230.0%	155.9%	122.8%	141.3%	232.3%	164.5%	194.0%
2000-08 SSA	117.8%	102.3%	112.0%	74.7%	67.0%	71.5%	113.6%	87.7%	96.0%

As shown in Table 2 above, results and trends by amount follow a similar pattern to those by contract, although the A/E's are lower, particularly during the second submission period. While this could indicate lower mortality among annuitants with higher settlements, it also reflects differences in the two blocks of exposures. All of the contributors in the first submission period (2000-04) provided statutory reserves for all contracts, but some contributors were unable to do so in the second submission period. The 2005-08 portion does not include Amount data for contracts, which make up 58,453 contract years. These contracts can be removed from the study by specifying "1" in the Reserve Indicator Key in the accompanying pivot table. If this adjustment is made, the resulting A/E's by contract for 2005-08 are 111.2%, 151.5% and 80.1% for the 1983 IAM, 2012 IAM and 2000-08 SSA, respectively. This would bring the total A/E's to 147.3%, 202.5% and 105.3%. While those A/E ratios continue to be higher than the highlighted by amount ratios in Table 2 above, the difference is not as great.

We would expect the By Amount results to be more subject to random fluctuation than By Contract as there are fewer policies and those with higher reserves have greater impacts on the overall result. That expectation is indeed borne out in the measurements.

4.3(b) Issue Age

The two pivot tables on this tab are displayed side by side with By Contract on the left and By Amount on the right. Results are shown for all nine years of the study period combined. Results for an individual experience year or group of years can be obtained by changing the Study Year field on the pivot table.

- By Contract

  Overall, female A/E ratios are higher than male A/E's relative to 1983 IAM rates, lower relative to 2012 IAM rates, and nearly the same relative to the SSA table for the full study period. A/E ratios relative to each table show a steady decline after the late teen years.

- By Amount

  Results by amount likewise show a steady decline in the A/E ratios from the late teen years to the end of the table. Unlike the By Contract results, female A/E's are lower than male based on all tables.

4.3(c) Attained Age

Results by Attained Age mirror those described above by Issue Age. Results are shown for all nine years of the study period combined. Results for an individual experience year or group of years can be obtained by changing the Study Year field on the pivot table.

- By Contract

  Female A/E ratios are higher than male A/E's relative to 1983 IAM rates, lower relative to 2012 IAM rates, and nearly the same relative to the SSA table for the full study period. A/E ratios relative to each table show a steady decline after attained age 25.

- By Amount

  Results by amount likewise show a steady decline in the A/E ratios from attained age 25 to the end of the table. Unlike the By Contract results, female A/E's are lower than male based on all tables.

While overall A/E ratios exceed 100% relative to the valuation tables, they consistently drop below 100% at the higher ages. The following table lists the ages at which this experience dips below expectation relative to both valuation tables.

Table	Ages at which Expected Deaths Exceed Actual	
	By Contract	By Amount
1983 IAM	96+	76+
2012 IAM	96+	86+

Based on this study's overall distribution of business, each valuation table appears sufficient because its A/E ratio is greater than 100%. However, as the ratio is less than 100% at the highest ages, a valuation actuary should consider the sufficiency of each table in light of the distribution of the company's block of business.

4.4 Duration Tabs

There are two tabs for analyzing summary statistics by duration. Like the gender tabs, each tab has two pivot tables, the first measuring results by contract and the second measuring by amount. Each tab groups policies into four duration groups – 1-2, 3-5, 6-10 and 11+. Alternatively, the data can be split into 11 groups – one for each of the first 10 years and one for years 11+. We grouped the data into four groups to make the output more manageable and to reduce random fluctuation. A user can readily modify the pivot tables to look at it either way by changing the duration parameter.

As with previous Structured Settlement studies, the A/E ratios increase with duration, indicating there is some selection in this population, but that selection wears off pretty quickly.

4.4(a) Duration & Study Yr tab

Both measurements (By Contract and By Amount) indicate mortality improvement over the study period overall and within duration groups, albeit with random fluctuation. As mentioned above, the results may also reflect differences in the company mix between the two submission periods, as well as evolving changes in the Structured Settlement annuitant population.

4.4(b) Duration & Att Age tab

Both measurements (By Contract and By Amount) show lower mortality rates relative to the base tables at higher attained ages. This trend is consistent over each duration subgroup, albeit with more random fluctuation. This indicates a high degree of selection at the higher ages. It has been postulated that, because plaintiffs in court cases have some choice in how awards are structured, annuitant mortality should be expected to exhibit some selection. As in the prior Structured Settlement studies, this postulate is validated in this study at the higher ages.

4.5 Remaining Tabs

The 16 remaining tabs measure results based on:

- Contract or Amount
- Issue Age or Attained Age
- The 1983 IAM, Annuity 2000, 2012 IAM or 2000-08 Social Security/Medicare table

Section 5: Substandard Lives

5.1 Description

All substandard contracts (also called "rated" contracts) are given a "rated age," which is higher than the true age. The rated age is deemed by the issuing company's underwriters and actuaries to produce an actuarial equivalency with respect to the cost of the guaranteed income stream.

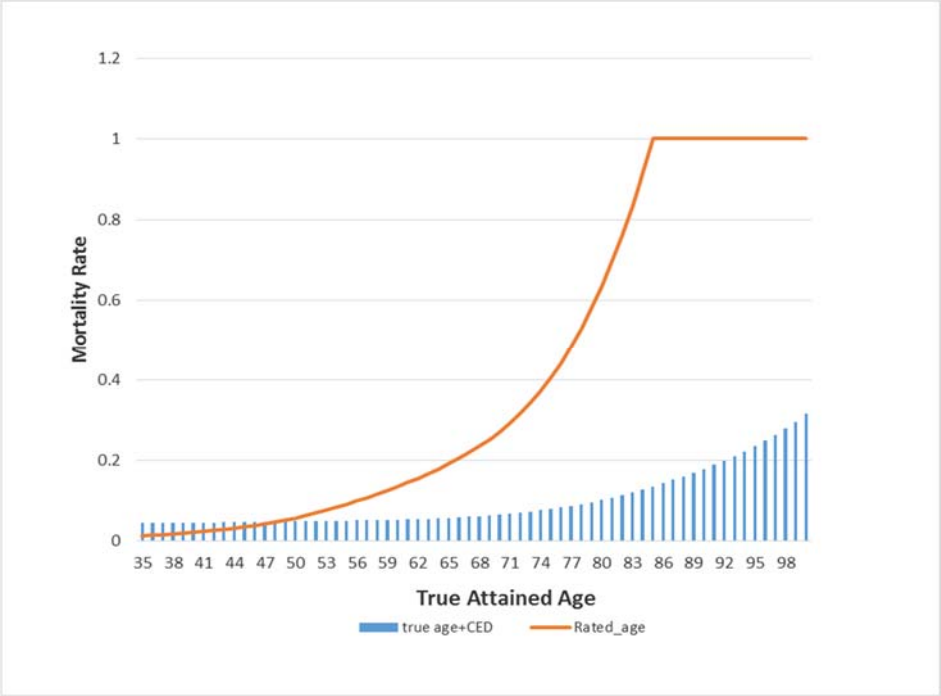
The CED basis is specified as the statutory method for minimum substandard reserves in Actuarial Guideline IX-A of the NAIC's *Financial Examiners Handbook*. Substandard payout annuity reserves are allowed only for structured settlement contracts pursuant to tort actions and for contracts used to fund disabled lives and workers' compensation liabilities. Under the CED method, a constant "flat extra" increment to the 1983 IAM rates is calculated to reproduce the life expectancy of the rated-up age.

For example, adding 44 extra deaths per thousand to every attained age rate for a male annuitant with a true age of 35 decreases the 1983 IAM life expectancy to that of a 65-year old. The mortality is "front-loaded" because the 44 extra deaths have a proportionally greater effect at the younger ages than the advanced ones. Over time, the substandard mortality rates effectively approach standard rates as the underlying mortality rate increases and the increment becomes relatively less significant. Because of this grading towards standard mortality rates, reserves using the CED method approach standard reserves over time. By contrast, rated-age reserves for a 35-year-old with a 30-year age rate-up would be zero when the annuitant reaches true age 85.

Experience was studied on a true age, rated age, and "true age plus constant extra deaths (CED)" basis.

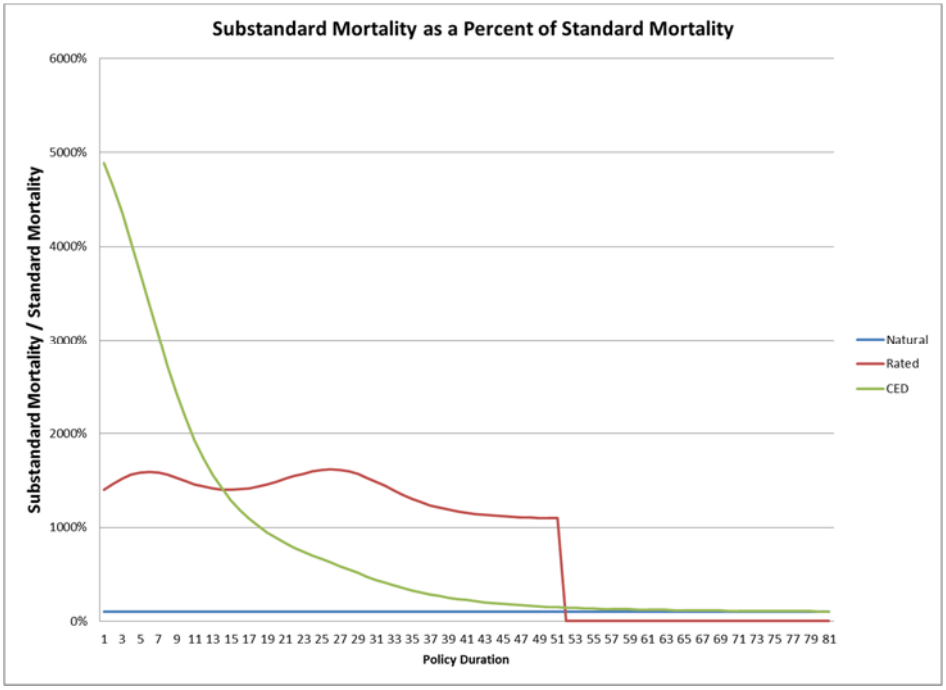
Figure 2a compares the mortality assumptions under the CED and rated age methods, by duration, for a typical rating (male, true age 35, rated age 65). The incidence of extra mortality assumed under the two methods is not at all consistent. Again, when the substandard cases are medically underwritten, the determination is made of average life expectancy. The rated age is used to price the contract because it reflects the approximate total excess mortality (that is, it reproduces the appropriate life expectancy), but no explicit assumption is made that the pattern of extra mortality year-by-year will follow that of a standard life at a higher age. Neither the rated-age method nor the constant extra death method exhibits the underwriter's best estimate of the pattern of mortality. While CED reserves are the statutory minimum, Actuarial Guideline IX-A also states that holding these reserves "shall in no way relieve the actuary from considering whether such reserves are adequate." Since CED reserves are always based on the true age, they will go more years before reaching the end of the table and will grade into the standard reserve. Therefore, the CED method should ultimately result in higher reserves for long-surviving structured settlement annuitants, as compared to reserves calculated using mortality rates based on rated age. Figure 2b also compares the CED and rated-age mortality rates, but looks at both as a percentage of the standard 1983 IAM rate.

FIGURE 2a
ALTERNATE VALUATION MORTALITY FOR MALE, 35, RATED AGE 65
1983 IAM TABLE*



* The 1983 IAM table has no mortality rates beyond age 115, or duration 51, for the rated age above.

FIGURE 2b
ALTERNATE VALUATION MORTALITY FOR MALE, 35, RATED AGE 65
1983 IAM TABLE*



* The 1983 IAM table has no mortality rates beyond age 115, or duration 51, for the rated age above.

5.2 Expected Tables

The table below shows the mortality bases that are available in the data.

Mortality Table	Valuation Margin	Projection
1983 IAM	Included	None
1983 IAM plus CED	Included	None
Annuity 2000	Included	None
2012 IAM	Included	None
SSA Table	None	None

Substandard structured settlement annuity mortality is particularly challenging to quantify because age categories are not homogeneous. True age groupings consist of slightly impaired lives with small age rate-ups and heavily impaired lives with substantially higher rated ages. While rated-age groupings tend to be more informative and useful, a given rated-age grouping will comprise young true-age policies with large rate-ups and older true-age policies with small rate-ups. Slicing the results into more homogeneous categories will give too little exposure and deaths per cell.

Minimum statutory reserve rates must be computed based on true age, although the True Age plus Constant Extra Death method is permitted to reflect impairments. An actuary may only base statutory reserves on a rated age if it can be demonstrated that such reserves are at least as high as the mandated true-age reserves at all durations. GAAP reserves, on the other hand, may be computed on a rated-age basis. Therefore, substandard results will be shown in sections 5.3 and 5.4(a) below on both a true-age and rated-age basis. Given true-age mortality is over three times the "expected" mortality under each standard table, those tables clearly do not reflect past experience or any reasonable expectation of future experience. Most remaining sections will cover rated-age and CED results only, but users can manipulate the pivot tables to include true-age results if desired.

5.3 Full Summary Tab

The initial tab labeled "Full Summary" displays total exposure, deaths, expected deaths and A/E's according to each table above. These results are shown for both Contract counts and Amount. A/E's are well over 100% when based on true age, including those using expected mortality from the Social Security/Medicare tables.

The results on this tab are also broken down by Study Year, which gives some idea of both the trend and level of random fluctuation. The data seem to indicate a downward trend in mortality rates during the first submission period comparable to that seen in most studies of other populations. The second period has less exposure, greater fluctuation and no clear upward or downward trend. The results by amount are comparable to those by contract, but with more fluctuation.

Measured by Rated Age, the A/E's relative to 1983 IAM were a little over 100%. However, those A/E's have fallen below 100% in more recent years. Measured by True Age and relative to the 1983 IAM plus CED (the NAIC valuation standard), the A/E's were well below 100%. Figures 2a and 2b above show why this can be expected for early policy durations. See section 5.5(c) below for further discussion on this and why reserves can still be adequate even though early policy durations may show less than 100% A/E on the CED method.

5.4 Gender Tabs

There are four tabs for analyzing summary statistics by gender, all of which display results by contract and by amount. Exposures, actual deaths and A/E ratios are shown on each tab. Overall, when measured by contract, female A/E ratios are higher than male A/E's relative to 1983 IAM and SSA rates, and nearly the same relative to the 1983 IAM + CED and 2012 IAM tables for the full study period. Measured by amount, female A/E's are higher than male based on all tables.

5.4(a) Study Years

The first two gender tabs, *Gender & Study Yr – True Age* and *Gender & Study Yr – Rated Age*, have pivot tables displayed sequentially with By Contract appearing first and By Amount second. Individual study years are shown separately.

- By Contract

  Both male and female exposures by contract show steady increases each year within each submission period (2000-04 and 2005-08), although there is a decrease in data submissions in the second period.

  The distribution of exposures by contract was roughly 64% male throughout the study period. This percentage was not impacted by the change in company mix between the two submission periods. As shown in Table 3 below, the A/E ratios declined during the second period.

Table 3: Substandard Actual to Expected Ratios by Contract Years

A/E Ratios	Age Basis	2000-2004			2005-2008			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1983 IAM	True	418.9%	643.0%	474.9%	276.6%	384.9%	304.0%	352.5%	521.6%	395.0%
1983 IAM	Rated	110.7%	129.4%	116.4%	85.2%	103.3%	90.3%	99.8%	119.0%	105.4%
83 IAM + CED	True	70.3%	70.6%	70.4%	51.6%	54.5%	52.5%	62.1%	64.0%	62.7%
2012 IAM	True	648.7%	786.7%	689.6%	430.3%	468.4%	441.8%	547.1%	636.6%	573.8%
2012 IAM	Rated	158.0%	153.9%	156.6%	123.2%	122.0%	122.9%	143.2%	141.1%	142.5%
2000-08 SSA	True	298.6%	415.6%	330.0%	197.5%	246.5%	210.9%	251.5%	335.6%	274.3%
2000-08 SSA	Rated	83.6%	92.8%	86.5%	64.3%	72.8%	66.8%	75.3%	84.7%	78.2%

While the decline between the two study periods indicates some mortality improvement, most likely it also reflects random fluctuation, differences in the company mix between the periods, and perhaps evolving changes in the substandard Structured Settlement annuitant population.

- By Amount

As with contract counts, the distribution of exposure by amount is heavily male throughout the entire period – 63% male vs 37% female. These percentages were stable throughout the study period, although there was a 1-2% increase in the female proportion during the second submission period, likely a result of the change in company mix between the two periods.

As seen in Table 4, results and trends by amount follow a similar pattern to those by contract, although the A/E's are lower, particularly during the second submission period, indicating lower mortality among annuitants with higher settlements. In fact, the overall A/E ratio under the 1983 IAM table is less than 100% when based on rated age.

Table 4: Substandard Actual to Expected Ratios by Amount

A/E Ratios	Age Basis	2000-2004			2005-2008			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1983 IAM	True	522.5%	1013.5%	642.2%	252.0%	408.6%	287.0%	381.8%	715.8%	459.8%
1983 IAM	Rated	103.6%	131.7%	112.9%	60.8%	65.3%	62.1%	83.4%	102.4%	89.4%
83 IAM + CED	True	57.1%	61.7%	58.8%	32.7%	31.3%	32.2%	45.4%	48.5%	46.5%
2012 IAM	True	796.7%	1248.5%	925.5%	381.8%	504.5%	413.8%	580.2%	882.8%	662.8%
2012 IAM	Rated	149.4%	157.5%	152.4%	87.3%	77.4%	83.9%	120.1%	122.0%	120.8%
2000-08 SSA	True	359.3%	635.3%	431.4%	178.6%	262.7%	198.8%	266.7%	454.3%	313.7%
2000-08 SSA	Rated	77.6%	93.4%	83.0%	45.6%	46.3%	45.8%	62.5%	72.7%	65.8%

All rated-age A/E's by amount in the above table are lower than the corresponding A/E's measured by contract. Some contributors' contracts were not considered in the above computation because they were not able to provide statutory reserves. Specifically, the Amount data above does not include contracts which make up 25,017 contract years. These contracts can be removed from the study by specifying "1" in the Reserve Indicator Key. If this adjustment is made, the resulting A/E's by contract and rated age are 96.9%, 57.7%, 130.9% and 71.8% for the 1983 IAM, 1983 IAM plus CED, 2012 IAM and 2000-08 SSA, respectively. While those A/E ratios continue to be higher than the highlighted By Amount ratios in Table 4 above, the difference is not as great. For the total period, all true-age A/E's by amount in the above table are higher than the corresponding true-age A/E's measured by contract, except for those using the CED table. Given true-age mortality is over three times the "expected" mortality under each standard table, those tables clearly do not reflect past experience or any reasonable expectation of future experience.

5.4(b) Rated Issue Age

Results are shown for all nine years of the study period combined. Results for an individual experience year or group of years can be obtained by changing the Study Year field on the pivot table. Bear in mind the rated-age categories are not homogeneous (that is, a given rated-age grouping comprises young true-age policies with large rate-ups and older true-age policies with small rate-ups), but slicing the results into more homogeneous categories will give too little exposure and deaths per cell.

- By Contract

  A/E ratios relative to each table except 1983 IAM + CED show a steady decline after age 40. Relative to 1983 IAM + CED rates, A/E's trend slightly upward by rated Issue Age group.

- By Amount

  Results by amount likewise show a steady decline in the A/E ratios after age 40, except for the 1983 IAM + CED A/E's, which increase with age. Results by age group are more volatile measured by amount than by contract, perhaps because contracts with higher reserves have greater impacts on the overall result.

5.4(c) Rated Attained Age

Results by Rated Attained Age mirror those described above by Rated Issue Age. Results are shown for all nine years of the study period combined. Results for an individual experience year or group of years can be obtained by changing the Study Year field on the pivot table.

- By Contract

  A/E ratios relative to each table, except the 1983 IAM + CED, show a steady decline after age 50. Relative to 1983 IAM + CED rates, A/E's generally increase by rated Attained Age group. As stated in sec 5.1, this is to be expected as the CED incorporates more of the expected excess mortality at earlier policy durations and less at later durations.

- By Amount

  Results by amount show a steady decline in the A/E ratios from age 50 to the end of the table, except for the 1983 IAM + CED A/E's, which generally increase with age. Results by age group are more volatile measured by amount than by contract, perhaps because contracts with higher reserves have greater impacts on the overall result.

5.5 Duration Tabs

There are three tabs for analyzing summary statistics by duration. Like the gender tabs, each tab has two pivot tables, the first measuring results by contract and the second measuring by amount. The first two tabs (*Duration & Study Yr (rated age)* and *Duration & Rated AA*) group policies into four duration groups – 1-2, 3-5, 6-10 and 11+. The data can be split more granularly, but we used four groups on this tab to make the output more manageable and to reduce random fluctuation. The third tab (*Dur & Study Yr (83IAM+CED)* does get more granular in order to estimate the duration at which experience mortality exceeds this valuation basis. A user can readily modify the pivot tables by changing the duration parameter.

The rated-age A/E ratios for substandard contracts decrease with duration, suggesting the extra mortality from the impairment wears off over time. However, the A/E ratios based on true age and the 1983 IAM plus CED increase as duration increases.

5.5(a) Duration & Study Yr (rated age) tab

Both measurements (By Contract and By Amount) indicate mortality improvement over the first submission period. There was no clear trend in the second, although overall mortality was lower in the second submission period than the first. As mentioned above, the results may also reflect differences in the company mix between the two submission periods, as well as evolving changes in the Structured Settlement annuitant population.

5.5(b) Duration & Rated AA tab

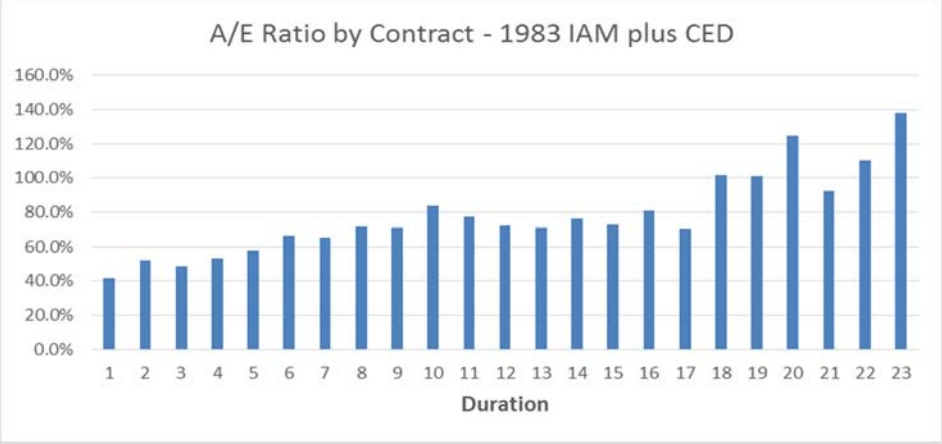
As stated above, rated-age A/E ratios for substandard contracts decrease with duration. However, this trend is less pronounced than that seen for standard lives, which would tend to validate the age rate-ups assigned by the contributing companies to the contracts. On the other hand, A/E ratios based on true age and the 1983 IAM plus CED increase as duration increases, which will be discussed in more detail in subsection 5.5(c).

Both measurements (By Contract and By Amount) show lower mortality relative to the base tables at higher rated attained ages. This trend is consistent over each duration subgroup, except for the first (dur's 1-2) where A/E ratios level off after age 50. This may indicate some selection at the higher ages, perhaps on the part of companies purchasing the annuities rather than the annuitants themselves.

5.5(c) Dur & Study Yr (83IAM+CED) tab

As discussed in section 5.1, the CED method uses annuitants' true age with a flat extra amount (Constant Extra Deaths) computed for each true-age/rated-age combination such that the life expectancy at the rated issue age is equal to the life expectancy at the true issue age after adding the flat extra. This method is expected to overstate the q_x's at early durations leading to low (<100%) A/E ratios, which is indeed the case. The CED method incorporates less of the extra mortality at later durations leading to high (>100%) A/E ratios. However, the duration breakdowns on the previous tabs, which top out at durations 11+, do not reflect that. Therefore, this tab displays all durations for the 1983 IAM plus CED. Measured by contract, the resulting A/E ratios go over 100% at duration 18 as shown in Figure 3 below. Measured by amount, the A/E ratios remain under 100% at nearly all durations. However, as stated above, A/E ratios do trend upward with increasing duration as would be expected.

FIGURE 3



The A/E ratios under the 1983 IAM plus CED for this experience are 62.7% measured by contract and 46.5% by amount. Normally, this might call into question the adequacy of reserves as valuation mortality rates are typically *lower* than experience rates for annuities. However this business in year 7 on average, at which point the 1983IAM+CED mortality rates are expected to be *higher* than experience rates for the reasons stated above. Reserves computed pursuant to NAIC Actuarial Guideline IX-A are based on 1983IAM+CED mortality rates in future policy durations, which are generally lower than anticipated mortality experience and, thus, result in higher reserve requirements. Therefore, such reserves should have the built-in conservatism intended when this guideline was designed and adopted.

5.6 Remaining Tabs

The next 24 tabs measure results based on:

- Study Year, Duration, or Years Rated Up
- The 1983 IAM, Annuity 2000, 2012 IAM or 2000-08 Social Security/Medicare table
- Contract or Amount

For these 24 tabs, the expected mortality rate is based on rated age.

The final two tabs (*CNT by Study Yr* and *AMT by Study Yr*) display A/E's based on both true age and rated age for the four mortality tables listed above, and on true age for the 1983 IAM plus CED table.

Section 6: Acknowledgements

The Structured Settlement Experience Subcommittee would like to thank all of the companies who contributed data to this study. We also thank those who helped us review this document and offered helpful suggestions and thoughtful comments. Finally, the Subgroup thanks the Society of Actuaries staff for their help in completing this project. We hope you will find the report, and the accompanying pivot tables, to be useful.

Contributing Companies for the 2000-2004 Study Period
Allstate
Aviva/Athene
AXA Financial - Equitable
Genworth Financial
Hartford Life
Jefferson-Pilot Life
Liberty Mutual (Liberty Life of Boston)
Nationwide
New York Life
Pacific Life
Prudential
State Farm Life
Symetra

Contributing Companies for the 2005-2008 Study Period
AIG American General Life
AXA Financial - Equitable
Hartford Life
Liberty Mutual (Liberty Life of Boston)
Lincoln Benefit Life
Lincoln National
Met Life
Met Life Insurance of America
Nationwide
Pacific Life
Prudential
Standard
State Farm Life
USAA Life
Western & Southern Insurance

Society of Actuaries
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Sean Souders
Jacqueline Wetcher
Chris Whitney

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