



21st Services' 98.1% Actual-to-Expected Ratio Reflects the Reliability of Our LEs

21st Services is pleased to announce the results of its latest A-to-E (actual-to-expected) study. We are not aware of any other life expectancy provider that has announced more accurate results on an overall basis.

We caution against reliance on a single number for A-to-E, so we encourage all interested parties to review the more detailed results by percentile and by duration which are presented below. We find those results to be very favorable as well.

This summary of 21st Services' 2009 actual-to-expected study incorporates all Senior Model Life Expectancy evaluations from January 1, 2001, through March 31, 2009, with mortality experience through March 31, 2009. We utilized our current mortality tables and underwriting methodology to calculate the expected deaths.

Back in 2008, we re-calibrated our mortality tables and calculation methodology to reflect our emerging experience and because the Society of Actuaries introduced new VBT (Valuation Basic Tables) that year. At that time, our database numbered around 52,000 unique lives. The results of that calibration produced a very acceptable A-to-E ratio of approximately 98%.

The current study, which incorporates 12 more months experience with approximately 20,000 additional lives, validates the decisions we made in 2008. As we have indicated to many of our clients and in various communications, the overall level of mortality has been accurately captured in our life expectancy certificates. Our current A-to-E ratio of 98.1% is clear evidence of that.

We chose to utilize the above methodology to calculate A-to-E because it allows us to best answer the question that we most hear from clients and prospective clients: "How do you know that the Life Expectancy estimates that 21st Services is providing today are accurate?"

Notes about the report and methodology

Our semi-annual studies are conducted with the assistance of two outside actuarial firms. One is an internationally recognized leader in financial and actuarial disciplines, based in New York. The other is a German actuarial consulting firm, well known within the life settlement industry.

As you review the various analyses below, please note the limited sample size in several categories. Our actuarial consultants have advised us that the statistical credibility of 21st Services' overall underwriting portfolio is increasing, but we could still see volatility in some of the categories.

Although 21st Services' database is now large enough to reduce this volatility, 21st Services is taking steps to vastly increase the amount of data on which our mortality tables and our underwriting system are based. We believe that this effort will enable us to bring the same precision we enjoy on an overall basis to more granular analyses, such as by impairment.

An important factor in A-to-E calculations is the IBNR assumptions used. The IBNR percentage – of “incurred but not reported” deaths – is intended to correct for the time lag in reporting deaths and for inaccuracies in the Social Security database. We assumed IBNR was 11% in year one, 9% in year two and 7% thereafter.

Portfolio maturity and its effect on statistical analysis

21st Services believes that no single A-to-E statistic can properly capture the performance of LE providers. At 21st Services, our goal is to deliver excellent A-to-E results along many dimensions: impairment, age, gender, smoker status and duration. We show performance along two dimensions in this review. The first set of charts shows A-to-E by the stage of the cases on their respective mortality curves.

The mortality curve in the charts corresponds to the curve that is provided to clients with each Senior Model Life Expectancy estimate. For the purposes of the charts, the 5th percentile is the point by which 50 out of 1,000 like insureds were expected to have died. Similarly, the 30th percentile is the point by which 300 of 1,000 like insureds were expected to have died.

Classically, the 50th percentile represents the median in a mortality curve. As of March 31, 2009, only 685 of 21st Services' cases had reached that point – too small a sample to have any statistical credibility.

The results of the March 2009 A-to-E study are shown in the first chart, and, in contrast, the results of the March 2008 study are shown in the second chart. It was this second chart that reflected the changes made to mortality tables and other underwriting adjustments that we made in September 2008. In both charts, the middle rows show the number of cases and the number of deaths predicted in each percentile of the mortality curve. At the bottom is the actual-to-expected ratio for each percentile.

21st Services' A-to-E Study Performed March 31, 2009

| Percentile | 5 th | 10 th | 15 th | 20 th | 25 th | 30 th | 35 th | 40 th | 45 th |
|--------------------------------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| # cases that have reached this stage | 18,820 | 9,470 | 5,911 | 3,959 | 2,821 | 2,107 | 1,546 | 1,180 | 895 |
| # deaths predicted by this stage | 941.0 | 947.0 | 886.7 | 791.8 | 705.3 | 632.1 | 541.1 | 472.0 | 402.8 |
| Actual / Expected | 105.8% | 103.3% | 104.8% | 104.6% | 105.3% | 105.3% | 106.2% | 107.9% | 105.8% |

21st Services' A-to-E Study Performed March 31, 2008

| Percentile | 5 th | 10 th | 15 th | 20 th | 25 th | 30 th |
|--------------------------------------|-----------------|------------------|------------------|------------------|------------------|------------------|
| # cases that have reached this stage | 9,814 | 4,769 | 2,786 | 1,841 | 1,281 | 906 |
| # deaths predicted by this stage | 490.7 | 476.9 | 417.9 | 368.2 | 320.3 | 271.8 |
| Actual / Expected | 104.7% | 108.9% | 117.4% | 113.3% | 114.1% | 113.6% |

In the 2009 chart, we show experience only through the 45th percentile of the curve. The second chart shows experience through the 30th percentile. In percentiles 50-100 (35-100 in the 2008 study), the sample size shrinks to the point where results are not statistically significant.

The small sample sizes at higher percentiles reflect the fact that 21st Services' portfolio of cases has grown very quickly in the past six years. Year by year, as our underwriting portfolio matures, the percentile cells will expand, and sample size will cease to be a problem. But for now, many cases are still in the 1st through 10th percentiles – more than in all the other percentiles combined.

In response to the need to better define life settlement mortality in the later durations, beyond the point at which we have statistically credible experience, 21st Services is pursuing landmark research that compares life settlement, life insurance and general population mortality rates.

In February 2008 the Society of Actuaries released the 2008 Valuation Basic Tables (VBT). These tables update the 2001 VBT, on which our proprietary mortality table was based. Compared to the 2001 VBT, the 2008 VBT shows lower mortality rates. This parallels 21st Services' mortality experience as seen in the charts above.

After a thorough review of the newly released VBT and of our own data, we made the appropriate and responsible adjustments to our proprietary mortality table. We are pleased to see that the addition of 12 months more life settlement experience reinforces the validity of those changes. [Read our Chief Actuary's discussion of the 2008 VBT and see our modifications to our table.](#)

Another look

The previous charts show the emergence of experience based on the stage of the mortality curve. Another way to look at A-to-E is by duration – i.e., time elapsed since the cases were underwritten. For example, in the charts below, Duration 1 includes the performance of all cases in the study within the first year after being underwritten. Duration 2 includes the performance of all cases in the study in their second year after being underwritten, and so on. As expected in a growing company, the number of cases (and both actual and expected deaths) declines as duration increases. Ideally, the actual-to-expected percentages are close to 100 at all durations.

In the charts below, one can see that, with the exception of later durations where there is little data, actual-to-expected percentages are indeed close to 100. In fact, actual-to-expected percentages for the first five durations show more stability and less variability in the 2009 study than the 2008 study.

March 31, 2009

| Duration 1 | | Duration 2 | | Duration 3 | | Duration 4 | | Duration 5 | | Duration 6 | |
|------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|
| Actual | Expected | Actual | Expected | Actual | Expected | Actual | Expected | Actual | Expected | Actual | Expected |
| 816 | 847.2 | 758 | 769.6 | 589 | 569.4 | 351 | 344.7 | 157 | 163.2 | 68 | 57.1 |
| 96% | | 98% | | 103% | | 102% | | 96% | | 114% | |

March 31, 2008

| Duration 1 | | Duration 2 | | Duration 3 | | Duration 4 | | Duration 5 | | Duration 6 | |
|------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|
| Actual | Expected | Actual | Expected | Actual | Expected | Actual | Expected | Actual | Expected | Actual | Expected |
| 547 | 523.5 | 432 | 418.1 | 265 | 257.1 | 130 | 140.1 | 71 | 65.7 | 21 | 21.6 |
| 104% | | 103% | | 103% | | 93% | | 108% | | 97% | |

New news is good news

In publishing our A-to-E numbers and background information on how they are derived, we hope to demonstrate our commitment to transparency. It is important to us to be able to render a picture of our actual-to-expected performance that is as consistent as possible, but our chief aim is to provide life expectancy estimates that are as reliable as possible.

To continually enhance the reliability of the statistical platform on which our LEs are based, we are doing ever-more rigorous analysis of our 80,000-life database, supplemented by mortality data from the life insurance industry. This is in addition to utilizing, where appropriate, the findings from the mortality study we are sponsoring of 15 million Medicare lives.

The detailed data and analysis from these studies will be used not only to refine our tables and underwriting system, but they will be made available to our clients through our Data Subscription Service. The Data Subscription Service will also include exhaustive detail on our A-to-E studies. [Click here for more information about our Data Subscription Service.](#)

Related link:

- [Our multi-year mortality study of 15 million senior lives](#)