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What's Going on Here, Anyway?

By John M. Bragg

In 1990, I started a personal project which was unsuggested, unpaid and unbidden. It was to find out all I could about old age mortality, particularly at 90 and older. The project was a bit like climbing Everest—I did it because it was there.

Well, its 25 years later, and the results are at hand. They contain a couple of surprises: (1) at *higher* ages, mortality is higher for females than for males, and (2) mortality after 97 doesn't increase; it *decreases*. What's going on here, anyway?

There are recent theoretical papers about longevity, but I looked in vain for explanations of these results, which are the facts on the ground. So, let me explore the issue.

THE RESULTS

For the field of study, here are the ratios of female-to-male mortality:

Central Age	Ratio
67	0.834
72	0.569
77	1.073
82	1.292
87	1.030
92	1.345
97	1.159
100+	0.703

The field of study is the important nonsmoker middle- to upper-class market. (Currently, this can be thought of as policies for \$100,000 or higher.) The results are reinforced by an analysis of the data in the Society of Actuaries' (SOA's) Industry Life Experience, 2005-2007.

THE SPIKE AT SEVENTY-SEVEN

For the first time, the ratio spikes dramatically at age 77. My explanation for this is "stress." The average female is still looking after grown kids and is worried about finances, health, and health insurance issues.

I also consulted the New Health Contingencies. They showed that, for the age 77 bracket, the prevalence of mental illness was higher for females than for males (14.62 percent and 13.31 per-



cent, respectively, of the total population) for the first time. This discovery seemed to corroborate the stress explanation.

But there is reason for optimism. At age 77, a female with mental illness requiring home health care only has a recovery rate of 13.32 percent per annum, compared with a disabled mortality rate of only 2.28 percent. Furthermore, it is vital to point out that the stress explanation is a two-way street. It can also explain why male mortality is higher than female mortality at younger ages.

THE SPIKE AT NINETY-TWO

Nowadays, I am 94 and barely hanging on to my good denominator position in that 90 to 94 bracket. I again consulted the New Health Contingencies (which are fascinating) and looked at prevalence in the "sick" category (other than mental illness). In this group, 63.9 percent of females were sick compared with 60.9 percent of males. Again, this seemed to corroborate the "spike" at 92.

Female to Male mortality ratio spikes dramatically at age 77. Explanation is "stress."

THE DECREASE AFTER NINETY-SEVEN

From age 97 to age 102, mortality decreases (by 17 percent for males and an astonishing 50 percent for females). Thereafter, it seems to reach a plateau. I consider this decrease after 97 to be the result of survivorship of the very fittest of the very fittest.

SPECIAL NOTE

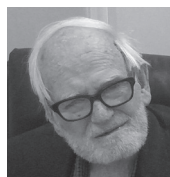
I recently congratulated Anna Rappaport on her excellent article "*Ripe for Retirement*" in *The Actuary*. I especially agreed with her comment that "we need to consider disability benefits in the design of programs going forward." It seems to me that long-term care would be handled very efficiently through the pension plan mechanism.

I recommend the New Health Contingencies, which include the fascinating new subject of recovery. Discoveries about recovery have led me to advocate the use of recovery rates as a second decrement in reserving and pricing.

These days, the elderly are buffeted by health problems and a myriad of questions: Should I take out a reverse mortgage? Should I sell my life insurance policy? What about the kids? Will my defined contribution pension accumulation be enough? To help them cope, I believe that near-retirees need a "personal actuarial report" that could be supplied through plan administrators. There could be a competition for coming up with the best personal actuarial report for that particular plan.

We all continue to be proud of our actuarial profession. I've never had a dull day since I was recruited to the profession at age 19!

I would appreciate any comments from Pension Section members at nbk@mindspring.com. ■



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