2008 Living to 100 Symposium: A Wrap-up Discussion

Sam Gutterman, FSA, MAAA, FCAS, FCA, HONFIA

This has been an excellent symposium. A wide range of topics have been discussed, based on a goodly number of quality papers and presentations; so many that I do not intend to cover all of the topics raised. Nevertheless, I would like to highlight some of my key takeaways.

The first is the importance of the topic. It is huge and has a widespread impact on society as a whole, its institutions and the individuals within it, as it will affect both their lives and their future financial resources. The need to understand and manage the risks involved is applicable at all levels.

- For the individual, it means coping with a longer lifetime. Resources available at older ages will become even more critical than in the past. Preparation for retirement and indeed the essence of what retirement and working means in the first place may gradually take on entirely different implications. Several presenters mentioned the likelihood that more people will work longer, in contrast to the trend of the prior decades of ever-earlier retirement. And the fact that the length of our healthy future is not growing as fast as our life expectancy has vast implications.

- As was pointed out in the implications panels, the institutions at risk and for which opportunities might develop include the financial services industry, the health care industry and sponsors of employee benefit plans, as well as government-sponsored programs. Given the longer period at risk, the responsibility for funding future needs will have to be shared, with work at older ages increasing in importance. Innovation in product design and financial innovation is not only possible, but will likely be rewarding.

- Economic growth is crucial to the wellbeing of society, particularly to future generations, for which the allocation of resources is important, not only in terms of fairness among your own cohort, but intergenerational

equity as well. Different types of assistance to those who have not properly planned for the personal risks involved will be needed to avoid moral hazard. Public institutions will be increasingly looked to for provision for an effective safety net to ensure security and a high overall quality of life.

This topic will affect all actuarial practice areas over the long term, whether the actuary is involved in retirement programs, insurance, finance or government. Almost everyone involved in any aspect of private and public financial services and the health care industry will need at some point to focus on these or related issues.

It is also clear that, even though mankind has spent a huge amount of resources to better understand the disease and aging mechanisms, it is remarkable about how much we still don't know. The sciences of genetics and aging are still in their infancy—a lot of potential, but great uncertainty as well.

Mortality is subject to both predictable forces and black swan (or unpredictable) events. These unpredictable forces might be of a sudden nature, possibly including a peril such as a pandemic disease or a large-scale terrorist attack or war; or, in contrast, a complete cure for many cancers or an effective “anti-fat pill.” Conversely, they might involve gradual change, such as the huge upswing in obesity that few if any predicted 30 years ago, and even after it was underway it took several years simply to figure out that something was happening; 30 years later scientists are still arguing about why it happened. As much as we try, there is only so much of the future that is predictable. When involved in projecting mortality, you have to remain at least somewhat humble, by either continuing to challenge your underlying assumptions or to apply risk management techniques, as applicable, just in the off chance that it turns out that you are wrong.

To develop mortality projections one usually first thinks of looking to the future. But to me the first step is to ensure that we truly understand the present and the drivers of how and why we got here. You have to deal with a firm base of knowledge of the current conditions—thus, the importance of the underlying data—and the effort needed to overcome data concerns can be considerable. As was pointed out in several sessions, this is as fundamental as knowing the cause(s) of death. In working with

data, and in developing an approach and the underlying assumptions regarding the future, there is always at least a sprinkling of judgment involved, no matter how mechanistic the approach taken.

Mortality modeling itself involves complex factors, as complicated as the combination of variables involved. The two primary schools of thought consist of those who advocate statistical and biological approaches. As we have seen at this meeting, there are strong advocates of both. And of course, each of these major schools has major streams of thought within it. The statistical side ranges from the Lee-Carter to the p-spline groups. Isn't there a limit to mortality improvement and an ultimate squaring of the mortality (and morbidity) curve? On the biological side, there are those investigating individual drivers, including limited caloric input, behaviors or diseases, and those who believe that unlocking our genetics and the aging process will turn out to be the nirvana of the future. We have been reminded by several presenters that the field of aging will continue to grow in importance.

It is easy to only consider favorable factors. However, several papers and presenters have reminded us that there are always potential adverse factors that may emerge as well, be they obesity, sedentary lifestyles, terrible nutritional habits or the possibility that our wonderful string of luck leading to the huge improvements in the cardiovascular and smoking areas just may run out of steam or even reverse themselves in the years ahead.

We were reminded that, even though we have focused on mortality, the twin issues of morbidity and disability are factors that cannot be ignored. The inter-relations between mortality and health are strong, but they don't have to move in the same direction. And even when we broaden our thinking to include our health status, we rarely think about the quality of life

No matter what, the remaining challenges will be significant. I don't believe that this topic will go stale on us. This will remain a fertile field for future study, both in theory and in practice.

It is clear to me that practitioners will need to remain on top of new developments on a regular basis, both in their own and in other fields. Collaborative work may benefit everyone involved. The sessions reminded me that this field is too big and complex to be able to follow everything that is going on. The future will remain uncertain for some time to come, no matter how far we move into it. Although there remain more questions than answers, there is a lot of room for opinions and avenues available for future investigation.