



Article from

The Financial Reporter

June 2017

Issue 109

Preparing for the Future: Understanding the Issues from the 2017 Living to 100 Symposium

By Faye Albert

While there is a long-term trend indicating mortality improvement, the underlying causes of improvement change over time and differ by age. Medical and scientific developments contribute to the changes. The Society of Actuaries has sponsored a research program “Living to 100 and Beyond” for the last 15 years. The symposia, held every three years, and most recently held this January, focus on the big picture relating to changes in high-age mortality, and bring together a diverse group of experts with different perspectives on the need to understand changing life spans and adapt to longer life spans. These programs are a place for new ideas, exchange of information, controversies, learning how other disciplines view related issues and identifying points of agreement and disagreement.

I enjoy participating every three years because each symposium gives me a chance to learn about new scientific research and to network with people from different disciplines. I hope that many of you will read the papers and the overview paper, and that you will participate in the next rounds of Living to 100. Thank you to the Society of Actuaries for this effort.

Also, thank you to Anna Rappaport for her summary of the meeting highlights prepared for the pension section newsletter. Some of her findings are liberally included in this article.

MORTALITY IMPROVEMENT: A MAJOR CONCERN

Actuaries establish prices and calculate reserves for financial products. Rates of mortality improvement are important in these calculations; different mortality tables are used for different products based on the populations covered.

Living to 100 was started around the year 2000 because of the difficulty in finding reliable data at very high ages and the added difficulty of projecting change. In 2017, public pension actuaries from the U.S., U.K. and Canada again compared mortality

ACCESSING INFORMATION ABOUT LIVING TO 100

For each of the six symposia there is a monograph on the Living to 100 website at <https://livingto100.soa.org/monographs.aspx>. The 2017 monograph including the new papers should be ready late in 2017.

All of the papers from 2002 to 2014 and the findings are summarized in a report prepared by Ernst and Young. This report is split between technical issues and implications, and can be found at <https://www.soa.org/Research/Research-Projects/Life-Insurance/soa-living-100.aspx>.

The report also highlights areas of agreement and differences and it includes abstracts for all of the published papers in an appendix.

and projection methodology. All agreed that mortality improvements at the high ages are slowing compared to the last 25 years. Canadian mortality continues to be significantly lower than U.S. mortality. The U.S. has a shorter life expectancy than many countries.

In addition to the methods described by the public pension actuaries who consider cause of death analysis in setting improvements, Larry Pinzur presented a session on mortality improvement approaches. One approach taken is to blend near-term mortality improvement, based on recent experience, with longer-term mortality improvement, based on expert opinion.

It was interesting that at the 2017 symposia there did not seem to be any major disagreements about future mortality improvement levels, especially as to the upper limit to human life. This was in sharp contrast to some of the earlier conferences. Perhaps this reflects a different attendee mix at this conference.

IMPORTANT SCIENTIFIC ISSUES: BIOLOGY—NEW APPROACHES TO ANALYZE AGING

Focus on biology has been a regular part of Living to 100. In 2017, there were two major presentations highlighting developments in biological and medical research. Overlapping content in those presentations pointed to evidence that there is a biological aging process related to the development of many different diseases. If that aging process can be stopped or slowed down, medical science would be able to extend the period that people are able to live healthy lives. Such intervention does not seem to impact total life span, but it does seem to reduce the portion of life that is infirm. Such a result would drastically reduce the number and growth in numbers of disabled elderly!

Nir Barzilai is Professor of Medicine and Genetics at the Albert Einstein College of Medicine at Yeshiva University and Director of the Institute for Aging Research. His presentation was titled, “How to Die Young at a Very Old Age.” He is conducting research on centenarians, and searching for a drug that can intervene in the aging process. He is actively involved in promoting a large research project “TAME: Targeting Aging with Metformin,” hoping the study will demonstrate Metformin can target multiple morbidities of aging, and that it will then be approved for use on a widespread basis. This is a different paradigm for studying next generation drugs. It targets multiple morbidities of aging instead of developing treatment for a particular morbidity. If Dr. Barzilai’s team achieves the hoped-for results, this work could help in extending healthy life expectancy and lead to major reductions in medical costs. It could also change the way medicine is practiced to focus less on specific diseases and much more on the total person and on cross disease prevention. (You can learn more about his research at <https://www.einstein.yu.edu/centers/aging/longevity-genes-project/>.)

Judith Campisi is an internationally recognized biochemist at the Buck Institute for Research on Aging. She has made contributions to understanding why age is the largest single risk factor for developing a variety of diseases including cancer. She explained cellular processes and senescent cells—older cells that have stopped dividing—and how they contribute to disease and the aging process. Senescence occurs when cells experience certain types of stress, especially stress that can damage the genome. The senescent cells help prevent cancer by blocking damaged cells from multiplying. But, there is a trade-off: the lingering senescent cells may also cause harm to the body. Her research group found evidence that senescent cells can disrupt normal tissue functions and, ironically, drive the progression of cancer over time. Senescent cells also promote inflammation, which is a common feature of all major age-related diseases. Her research is shedding light on anti-cancer genes, DNA repair mechanisms that promote longevity, molecular pathways that protect cells against stress, and stem cells and their role in aging and age-related disease. Her research integrates the genetic, environmental and evolutionary forces that result in aging and age-related diseases, and identifies pathways that can be modified to mitigate basic aging processes. She is collaborating with many other research groups on similar issues. Her research and related work has the potential to make major changes in the way aging and disease are viewed. (For more information about her work, see <http://www.buckinstitute.org/campisiLab>.)

Together, these two presentations suggested that major changes in the way we view aging and deal with the diseases of aging can lead to a big reduction in the number of sick years at the end of life.

In the final panel Jay Olshansky suggested that if we continue to consider major causes of death individually, without addressing together the combined diseases observed during aging, we can expect longer and longer periods of frailty, which in turn would lead to greater demands for long-term care. We all have a major stake in successfully addressing the aging issues so that we can have healthier lives.

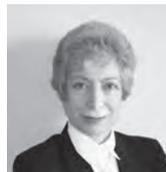
REPEATED THEMES—COPING WITH AGING

The individual has to take responsibility for planning to deal with aging. Research by the Society of Actuaries’ Committee on Post-Retirement Needs and Risk has documented gaps in knowledge when surveying how people plan and manage assets. Shocks are important and often dealt with as they happen. Living to 100 touched on these topics several times.

Retiring later and working in retirement were mentioned during the discussions, but there was much less emphasis on these topics than in 2014. Financial products (annuities, both deferred and immediate) seem to be offered as a solution for individuals in every recent Living to 100 symposium. However, research by the Committee on Post-Retirement Needs and Risk indicates that financial products other than health insurance are not very popular with individuals; people tend to rely more on employee benefits. As retiree employee benefit programs have been reduced, individuals have not made up the difference.

There was emphasis on illness and the need for long-term services and support throughout the conference. The scientific presentations pointed to developments that may reduce the need for such services in the future. However, the public policy panel on the Impact of Aging pointed out that there are gaps in the system for providing and financing support in all of the countries discussed.

Changes in longevity impact actuarial calculations for both new product pricing and valuation. We need to consider these changes and estimate their impact in our work. ■



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