Perspectives from Anna
Comments on 2020 Living to 100 Symposium

By Anna Rappaport

The Society of Actuaries has sponsored seven Living to 100 symposia. I have participated in all of these in a variety of roles. I always look forward to hearing interesting, thought-provoking and controversial new ideas. The 2020 symposium was no exception. This article details some of the ideas that were particularly compelling to me. They represent a sample of many interesting ideas presented and reflect the mix of attendees from North America, Europe, Australia, and Asia. Some were academics and some were in different industries affected by our longer life. While many are actuaries, other disciplines were also represented.

The general sessions offered a very good variety of content. One of the highlights of Living to 100 is the keynote speakers who bring in new and interesting ideas. This year's keynoters included discussions of the biology of aging, non-financial aspects of retirement, and implications for the insurance industry.

At the opening keynote session of the 2020 Living to 100 Symposium, Dr. Steve Horvath focused on the epigenetic clock and research using DNA (captured from blood or by other means) and genomic biomarkers as a base on which to conduct longevity research. This research has been quite fruitful and is used to predict future developments and areas of future research needs, to measure the efficacy of a variety of possible anti-aging strategies and to think about the reasons why different animal species who seem similar may have vastly different life spans.

The ideas presented in the opening keynote can be paired with the closing panel which featured outside speakers focusing on upcoming biological issues.

The second keynote, by Dr. Jacquelyn James, focused on how we retire and think about retirement. That session is discussed below. The third keynoter, Ronnie Klein, focused on issues for the insurance industry.

A monograph to be published with the content from the 2020 Living to 100 Symposium will include research papers on a variety of topics related to living to older ages and its implications that form the foundation for many of the sessions at Living to 100. It will also include discussions of the papers presented at the event. In addition, the papers from the prior Living to 100 symposia have been analyzed in a consolidated literature review, "Living to 100 Insights on the Challenges and Opportunities of Longevity Literature Review 2002–2017." I found this statement in the executive summary, "*Our understanding of older age mortality is also limited, in part because the data at older ages are sparse and of varying quality. There are open questions related to the rate of improvement and the ultimate age at which it is appropriate to assume a mortality table should end.*" The 2020 symposium showed some further evidence in support of this statement.

MORTALITY TRENDS AND SITUATION

The overall rate of mortality improvement in the U.S. and Canada has slowed down in the last few years in comparison with that in earlier periods. At some earlier Living to 100 symposia, there was considerable debate about how much improvement in life expectancy is possible and whether there exists a maximum achievable lifespan. I heard much less disagreement this time: No advocacy for an increase in the maximum age at death and very little advocacy for further dramatic increases in life expectancy. Since the initial Living to 100, there has been no change in the maximum documented age at death. It remains at 122 years.

In 2020 and the last few Living to 100 symposia, there were excellent panels of social insurance actuaries from the U.S., Canada and the U.K. There seemed to be some convergence in the rates of mortality improvement used by these social insurance actuaries in North America and the United Kingdom. No one seems to be arguing for very large longevity increases. The last decade has seen lower mortality improvement in the U.S., Canada and the U.K.

Although the consensus maximum age at death has not changed over the period of the seven symposia—spanning 18 years since the first one in 2002—the average age of the 30 oldest deaths has increased although the maximum age of death (omega) has remained steady at age 122. There remains one documented case of death at this age. However, the average age of the 30 oldest people to die has increased by about ten years since World War II. I did not hear any updated rationale for future increases in omega.

U.S. society has already realized more than 30 years of improvement in life expectancy since 1900. The major sources of past improvement have been identified and causes of death have shifted accordingly. Early in the period there was major improvement in childhood mortality and then the introduction of antibiotics led to substantial reductions in death from infectious diseases. Since then, lung cancer, heart disease and stroke have shown long-term improvements while other cancers have shown increases. Alzheimer's and dementia are increasing, reflecting the overall aging of populations. Obesity is also having a negative effect, as are opioids. (I did not hear any talk of gun violence this year.) I also heard that there is no potential to entirely eliminate Alzheimer's or cancer, although improvements are likely in their detection and treatment, which would lead to longer, higher-quality lives for those afflicted with these conditions

It was pointed out that rates of mortality at the youngest ages are very low, and there has already been a major reduction in cardiovascular mortality at middle and older ages. However, if there is a biological breakthrough leading to an effective anti-aging therapy or cures for different types of cancer, then further significant increases in average life expectancy are still likely. In addition, the increasing average age of the population and the shifting age mix are heavily influenced by differences in the number of annual births.

Unlike in some earlier Living to 100 symposia, I did not hear from those who believe in big, imminent annual increases in mortality improvement or life expectancy. It was pointed out that there are two divergent views of life expectancies—one based on biological forces focusing on about age 85 as average and the other based on mathematical extrapolation resulting in continued growth based on past rates of improvement. The second view was mostly discarded, along with the idea of life expectancies moving significantly closer to age 100. Several people talked about why life expectancies of 100 in the future seemed completely unrealistic. It seemed that most of the discussants expected very moderate increases, possibly accompanied with longer periods of healthy life expectancy. A life expectancy of 85 could come about with major breakthroughs in prevention and the development of new drug interventions.

Challenges with data accuracy at very high ages still persist There was an interesting discussion at the symposium concerning some of the challenges and implications of identifying and dealing with ambiguous or inaccurate data.

RELATED ISSUES

Genetics matters, but by how much remains unclear. Studies of centenarians help confirm this. Paradoxically, centenarians have lower incidence of age-related diseases. The environment and medical developments take a greater role at extremely advanced ages. Environmental issues today have mostly adverse effects.

Multi-morbidities (co-occurring chronic diseases) are really important but they are hard to measure and study. These conditions seem to be a fact of life. I do not know much about them. We were reminded about the challenges for people taking many different medications. Sam Gutterman presented a paper on this topic and I hope that there is further research as interest in the area rises.

There is a lot of interest in being able to extend the period when people remain healthy. Studies on anti-aging strategies continue. The strategies and drugs under study now are the same as those that have been discussed in the last two or three Living to 100s. There remains the likelihood of new drugs or other interventions to increase healthy lifespan. The TAME (Targeting Aging with Metformin) trials, which involve a widely used treatment for type 2 diabetes and which were discussed at the prior Living to 100, are proceeding well. Questions remain about whether interventions will work and if so, which will work best. Whether a treatment will be found that can substantially slow or reverse aging remains controversial. The epigenetic clock can be used to study the efficacy of reversal of aging treatments. It was reported that the use of human growth hormone

had advocates and detractors. It remains a very controversial method of extending healthy aging.

BIG SOCIETAL ISSUES

I am personally very interested in linking what we do as actuaries to bigger societal issues and trying to link what I heard at Living to 100 to such issues. The 2020 symposium provided me with a lot to think about.

While longer life spans on average are a fact of life, certain population segments have very different results. Those with lower incomes, education and economic status tend to have shorter life spans. Inequality came up repeatedly, which raises major policy questions and challenges. Some of these challenges involve social justice and equity. For example, if people at all income levels pay Social Security taxes at the same rate and if the benefits begin at the same age and the benefit formula is not adjusted or truncated for income level, those with higher incomes will receive more benefits. Various types of adjustment are possible. For example, in the United States, Social Security benefits are tied to average, capped career income levels. Monthly benefits are a higher percentage of income level for those with lower incomes, but on average this group receives benefits for a shorter time due to their shorter life expectancies. It is unclear whether lower income groups get the same, better or worse return on Social Security contributions as do higher income groups.

An example of the current challenges and the link to inequality is thinking about retirement ages. Retirement periods have grown a great deal in the last 85 years since the introduction of the U.S.'s Social Security old-age pension system as longer life spans mean longer periods of retirement unless retirement ages are increased. I and many others have called for adjustments to the age at which full benefits are available. But inequality creates major challenges in trying to adjust retirement ages. One of the essays presented at the 2020 symposium focused on the challenges created by inequality when thinking about long-term care financing reform.

Retirement ages were a focus of the 2020 symposium. One paper ("When Danes Have only 15 Years to Live: Implications of Linking Retirement Age with Life Expectancy" by Jesus-Adrian Alvarez) discussed linking retirement ages to life expectancy, and what is happening in four countries (Denmark, Netherlands, Estonia, and Finland). Denmark has made changes so that by 2022, retirement ages will be life expectancy minus 15 years. However, all issues related to retirement ages easily get very political. This type of linkage can be detrimental to those in lower socio-economic groups. One of the keynote speakers, Dr. Jacquelyn James, talked about retirement moving beyond money. She focused on the desirability of and interest of many people in remaining productive longer. Retirement and work issues need to be addressed. There are different views of the life cycle today. Dr. James indicated that a fresh map of life would have four stages:

1. Growing up
2. Work
3. Scaled back work, but still productive
4. Retirement with limitations

It is important for the U.S. (and other countries) to focus on better opportunities for older workers.

Another area of focus in thinking about retirement is alternative designs for retirement benefits. Collective DC is an interesting design. Rob Brown raised this in his discussion in the Pensions and Longevity Risk session.

There is talk about both retiring later and working longer, and there are many options about how to work. In the session *Retirement Security: It's Not Just About Money*, Dr. Jacquelyn James talked about some of the challenges involved and the need for people to be able to define and play productive roles later in life. There are also many issues related to ageism, as it can be difficult for workers to find suitable work at older ages. See the 2019 Annual Meeting & Exhibit session *Reboot, Rewire or Retire* for insights into some of these issues.

The Horvath presentation reminded us about the importance of genetics. He is using genetic information in his research to understand changes in longevity. A paper was presented by N. V. Subramanyan on the use of genetic information in retirement planning. Individuals can also use genetic testing in managing their own health. This leads us to a focus on the uses, value and individual equity of genetic testing. There are a number of possibilities for the individual. There are also possibilities for insurance companies. One of the challenges is that if an individual has had genetic testing and the information is not known by a life or health insurer, there is a potential for anti-selection in the purchase of insurance.

Longer life raises issues about care late in life and about how to die. An issue raised a couple of times was medically assisted death, for which opportunity is limited in Canada, while there is more availability in some European countries. This is an issue that will need more discussion in the future and is very controversial in the U.S. Related is the issue of making choices about dying. In the session on *Beyond Age 85: Understanding Retirement Needs, Risks and Experiences*, a case study was presented to illustrate some of the late-in-life challenges. That case study made reference to several choices made about dying, including wanting to die at home, in a hospice setting with palliative care and minimum burden on the family, and discontinuing care to someone who had expressed the wish for that to be done. That case study provided illustrations about some of the challenges for and burdens on the family, resulting in choices made about care and death. Sally Hass, who presented the case study, discussed the issue of leaving a legacy of love.

As people live longer, they may or may not stay healthy longer. This is a huge issue, and there are a variety of interventions being studied that may help with a longer healthy life. Quite a bit of progress has been made, but there is more to discover going forward.

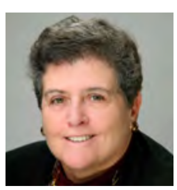
QUALITY OF LIFE RELATED ISSUES

While mortality research has been the biggest focus of the Living to 100 series, there have also been sessions at many of the symposia on implications and applications of the research. For example, in 2017, there was a focus on Age Friendly Communities. As in prior years, in 2020 there was increased attention given to the quality of life, versus merely the length of life. One session focused on the positive effects of alternative models of continuing care retirement communities, including improvements in life span. Working longer, staying healthy longer, and medically assisted death also link to quality of life. In 2020, the session that focused on Continuing Care Retirement Communities also addressed other housing and quality of care issues. The paper "Does Living in a Retirement Village Extend Life Expectancy? The Case of Whiteley Village in the U.K." makes the case that the combination of housing, care, food and the environment affect high age mortality for women. This is a lower income community with subsidized housing. A second paper "Health and Social Care Analysis Regarding the State of Canadian Women Living in the Alone Stage of Retirement" focused on a variety of issues including communities that combine housing and care, technology and social prescribing (referral of patients to existing support in the community.) It offered examples from a number of different settings and pointed out that current market solutions are generally too expensive for much of the population.

Doug Andrews pointed out that integrated services can help people age more successfully. But often services, including health care delivery, are not well integrated. Social prescribing is a way to integrate by helping the individual to link services—but this model may be impractical and out of reach in the short term. Effective use of technology, including robots, nanotechnology, etc. offers some promise.

CONCLUDING COMMENTS

Actuaries are involved in many different roles in different areas of practice. Other professionals are involved in working with the same issues we do, often adding different perspectives. Longer life and changing demographics touch the work that many of us do. The Living to 100 symposia offer an excellent opportunity to focus on many aspects of the big picture. The symposia offer a chance for us to broaden our viewpoint. I believe that broadening our perspectives helps us do a better job. We may not see how it changes us from day to day, but overall it enables us to think about the issues we are working on with a more complete focus. I highly recommend the Living to 100 symposia and the monographs and summary papers that document them. ■



Anna M. Rappaport, FSA, serves as chairperson of the Committee on Post-Retirement Needs and Risks and the Steering Committee for the Aging and Retirement Strategic Research Program. She can be reached at *anna.rappaport@gmail.com.*

DB Pension Plans: 10 Considerations in Light of the Coronavirus Crisis of 2020

By Zorast Wadia

The Covid-19 pandemic has caused economies world-wide to shut down voluntarily. At present, the severity and duration of the disease are unknown. In the U.S., several stimulus bills have already been provided to help people through difficult times. Much is also being done to lessen the impact on our economy. Pension plans have not been spared either and specific relief for plan sponsors has already been enacted. The CARES Act which was signed into law on March 27th, provided a record-shattering $2 trillion in stimulus and included some immediate relief for plan sponsors of single employer defined benefit pension plans. This article summarizes 10 considerations for these pension plans in light of the coronavirus crisis.

ERISA FUNDED STATUS AND BENEFIT RESTRICTIONS

Under the CARES Act, plan sponsors can rely on their funded status certifications for the 2019 plan year to determine if benefit restrictions for 2020 plan year are applicable. Therefore, if a plan offers an accelerated form of payment (e.g., lump sums) and was able to avoid benefit restrictions in 2019, then this exemption can carryover to 2020 regardless of a plan's actual 2020 funded percentage. While this is not likely to be impactful for calendar year plans that enjoyed excess asset returns during 2019, this could be helpful to sponsors with off-calendar plan years, especially those with plan years ending in February, March, or April of 2020 which saw depressed plan asset levels. Plan sponsors who use this lookback year relief can avoid the administrative burden of sending out additional participant notices and participants can keep the opportunity to elect accelerated distributions from their plans as they would have normally done in 2019.

CASH CONTRIBUTIONS AND TAX DEDUCTIBILITY

The CARES Act allows plan sponsors to defer all normally required contributions in 2020 (since its enactment on March 27th) to Jan. 1, 2021. This provision provides immediate cash relief for plan sponsors in 2020. This also gives plan sponsors the ability to make voluntarily cash contributions during 2020 should they have free cash flow on hand, or to make voluntarily cash contributions later during 2020 should their businesses recover. However, the CARES Act does not extend any deadlines for tax deductibility of contributions. For calendar year plans, contributions can be tax deductible (assuming the contribution levels are within the maximum tax deductible limits) for 2019 as long as they are made before Sept. 15, 2020. Plan sponsors that expect to make voluntary contributions in 2020 should consider contribution timing for purposes of tax deductibility. Furthermore, with interest rate relief provisions scheduled to phase-out over the next four years under present law, many plan sponsors will be dealing with increased cash contribution requirements in the near future. Funding up plans with any available cash earlier rather than later could help soften the blow of contribution spikes in the future, absent funding relief.

PBGC PREMIUMS

PBGC insurance premiums consist of a flat dollar and variable rate (subject to a cap) premium. The variable rate premium is

> Despite the current uncertainty caused by the coronavirus pandemic, there is prospect for hope for defined benefit pension plan sponsors. The CARES Act, though very basic in its relief, does provide plan sponsors with more time to plan for the future.

based on a plan's funded status. Plan sponsors taking the contribution deferral opportunities under the CARES Act could end up paying higher PBGC insurance premiums in 2020. For calendar year plan years, any contributions that are made by Sept. 15, 2020 can be considered as receivable contributions for the 2019 plan year. Making these receivable contributions would result in a higher funded status for the 2020 plan year which could serve to reduce PBGC premiums. This is a consideration for plan sponsors that have to pay PBGC variable rate premiums that are not impacted by (i.e., under) the variable rate premium cap.

PENSION ACCOUNTING EXPENSE

While investment returns soared in 2019, discount rates fell sharply. That resulted in a mixed bag for plan sponsors for purposes of determining pension expense in 2020. For plans with longer durations and more interest rate sensitive cash flows, the drop in the pension discount rates will likely result in a pension expense increase in 2020 relative to 2019. On the other hand, plans with shorter durations may find their liability losses offset by their asset gains in 2019 and thus may experience a reduction in 2020 pension expense compared to 2019. Either way, the one variable component of 2020 pension expense that plan sponsors can still influence is the expected return on assets. Sponsors may want to consider making voluntary contributions in 2020 in order to increase the expected return on assets component of pension expense, thereby lowering the pension expense impact in 2020. Higher pension contributions in 2020 will also help to boost pension funded status as measured at the end of the 2020 fiscal year, which is a determinant for the 2021 fiscal year pension expense.

COMMENCING BENEFITS AFTER NORMAL RETIREMENT AGE

The investment losses suffered in the first quarter of 2020 and the related deterioration of the global economy could have an adverse impact on the retirement prospects of many older employees nearing normal retirement age (often defined as age 65 in many pension plans). Plan sponsors may see more of an aging work force given the tendency for participants to defer retirement and not enter the retirement cohort. While this may lessen liquidity needs for plans, this could translate into higher benefit accruals in plans that aren't frozen. Even in plans where benefit accruals have been frozen, it is possible for benefits to be actuarially increased on account of retirement past a plan's normal retirement age. This may especially be the case for plans where terminated vested participants are able to elect a delayed commencement of benefits. One new possibility brought on by the SECURE ACT, effective Jan. 1, 2020 and just prior to the emergence of the Covid-19 pandemic, is the possibility for plan sponsors to amend their plans to increase the age for required minimum distributions from age 70.5 to 72. Plan sponsors should consider this carefully now given how retirement behavior has been impacted in this new environment.

BRINGING BACK FORMER PARTICIPANTS

Some business sectors such as health care and technology have seen a tremendous increase in the need for the services and products that they offer. Hospitals around the world have been inundated with patients fighting the coronavirus and there seems to be a growing need for more health care professionals, be it on the front lines helping patients or in laboratories working on testing and potential solutions. And what would happen to the global economy if it no longer had the internet at its disposal? It's industries like these that are actually hiring professionals at all levels, including senior talent in the form of retirees. For defined benefit plan sponsors in these industries, an examination of plan provisions dealing with suspension of benefits provisions could be in order. Plan sponsors may want to relax hours limitations on former retirees who resume employment so that they can continue to receive pensions as this may be a deciding factor on whether one may come back to work.

ACTUARIAL ASSUMPTIONS

Many actuarial assumptions for valuation purposes are long term in nature such as mortality rates. Other assumptions such as discount rates and salary increase expectations are more short term in nature. Depending on how long the Covid-19 crisis actually lasts and the actual effect on a plan sponsor's business, this may be a time to reconsider certain actuarial assumptions, especially if a plan sponsor is projecting contribution and pension expense figures over the near term. It may be informative to apply select and ultimate rates for withdrawal, retirement, and salary scale assumptions for ongoing valuations in addition to doing deterministic or stochastic projection valuations. And where we end the year in 2020 in terms of plans' asset returns is anyone's guess at this point given all the market volatility we've seen thus far; therefore, return sensitivity scenarios for 2020 should also be considered.

ASSET ALLOCATION AND (DARE I SAY?) RE-RISKING

The CARES Act included a record $2 trillion in stimulus. Additional stimulus totaling nearly $0.5 trillion was passed on April

21st as a follow up measure. The Fed has taken several measures to boost the U.S. economy and continues to give indications of additional stimulus as it has $4 trillion in available liquidity. But will asset prices regain the peak levels experienced in January 2020? Many investment advisors felt U.S. equities were overvalued at the end of 2019 and some were lowering their return expectations heading into 2020. Then came the coronavirus pandemic and things were essentially turned upside-down. For defined benefit plan sponsors that are following glide path strategies, is now a time to re-risk? Those plan sponsors that recently reallocated funds towards equities which had significantly come down in value after the first quarter of 2020 were certainly happy at the end of April. But what is the expectation going forward? The answer may depend on whether plan sponsors expect the U.S. economy will make it through this crisis or if they feel the economy will fall into a deeper recession. And then there is the consideration of how long a recovery, whether now or well into the future, will take.

DE-RISKING EXPECTATIONS

For defined benefit pension plan sponsors, "pension risk management" and "de-risking" have certainly been buzz words for the past decade. In the post Covid-19 world, the new buzz word seems to be "unprecedented." With discount rates at historic lows, investment losses suffered year-to-date and continued market volatility, it's hard to imagine plan sponsors making additional moves right now to transfer liabilities to third parties in an effort to de-risk. Depending on the immediate business outlook of a plan sponsor, now may not be the best time to engage in measures that would increase short-term costs. However, it's the prospect of future uncertainty and market volatility that may make liability offloading options such as lump sums and annuity purchases more appreciable in the future. The decisions on whether to proceed with further pension de-risking and upon what level of risk is appropriate depend on, among other things, a plan sponsor's risk tolerance and their expectation for the future. How fast we recover from this viral maelstrom will certainly be of influence.

FUTURE FUNDING RELIEF

As noted earlier in the considerations provided for cash contributions, the interest rate relief provisions under current law are set to gradually wear-away starting in plan year 2021 and continue through plan year 2024. The result will be a lowering of funding interest rates and a consequent increase in plan liabilities and, in most cases, minimum contribution requirements. The likely effect of funded status losses stemming from the coronavirus economic meltdown will be increased cash contribution requirements for plan sponsors starting in 2022, right in the middle of the interest rate relief erosion. This double whammy could be a serious issue for plan sponsors. Fortunately, industry associations are already discussing with Congress the need for further pension reform beyond the CARES Act provisions related to defined benefit pension plans. Proposals under discussion include extending the current interest rate relief provisions, spreading investment losses over longer future periods, and limiting PBGC premiums increases. Should any combination of the aforementioned funding relief occur, this could have a dramatic effect on plan sponsor contributions for the near term and could greatly affect many of the other considerations discussed throughout this article.

In conclusion, despite the current uncertainty caused by the coronavirus pandemic, there is prospect for hope for defined benefit pension plan sponsors. The CARES Act, though very basic in its relief, does provide plan sponsors with more time to plan for the future. There are numerous considerations and pathways for plan sponsors to follow going forward. This article offers several considerations that can be individually or jointly explored in order to mitigate pension plan risks in these unprecedented times. ■

Zorast Wadia, CFA, FSA, EA, MAAA, is a principal and consulting actuary in the employee benefits practice of Milliman. He is the co-author of the Milliman Pension Funding Study and Milliman 100 Pension Funding Index. He can be reached at *Zorast.wadia@milliman.com.*

Retirement Section Tidbits

Connection is important—the Retirement Section is here for you.

RESEARCH & REPORTS

As part of its ongoing effort to provide its stakeholders with useful information on COVID-19, the Society of Actuaries (SOA) recently launched a series of reports exploring the impact of COVID-19 on retirement risks. Read the "Impact of COVID-19 on Senior Housing and Support Choices" report to learn about the possible impact of COVID-19 on senior housing and related decisions that retirees and their families may need to make.

SECTION COMMUNITY

The Retirement Section Council has an initiative to pursue opportunities for retirement actuaries to consider focusing on defined contribution plans for a broader, more holistic view of retirement. In support of this mission, we have created the new Defined Contribution Resources page to share resources with actuaries interested in learning how actuaries can add value to defined contribution plans.

Get access to more info at ***SOA.org/sections/retirement***