



Long Term Drivers of Future Mortality – A Podcast Series - Chapter 4 - Inequality

Podcast Transcript

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SUMMARY KEYWORDS

Inequality, future mortality, income disparity, healthcare access, education level, socioeconomic status, life expectancy, mortality trends, economic mobility, global health crises, actuarial modeling, demographic shifts, health outcomes, rural communities, intergenerational effect.

SPEAKERS

Al Klein, Erik Pickett, Ronora Stryker, Kara Clark

TRANSCRIPT

RONORA STRYKER 00:05

Welcome listeners to the Research Insights Podcast. I'm Ronora Stryker, Senior Practice Research Actuary at the Society of Actuaries Research Institute.

Welcome back to our special podcast series focusing on our chapter by chapter, journey through the paper *Long-term Drivers of Future Mortality*. The paper is authored by Yair Babad, Professor Emeritus at the University of Illinois, Chicago, and Al Klein, principal and consulting actuary at Milliman. And it was written for Mortality and Longevity Strategic Research Program 2023 living to 100 Symposium.

Today we are exploring Chapter Four, Inequality. As usual, I'm joined by two members of our Mortality & Longevity Strategic Research Program Steering Committee, Al Klein, one of the paper's authors, is here today.

Caveat and Disclaimer

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AL KLEIN 01:02

Thanks Ronora, and welcome everyone from near and far.

RONORA STRYKER 01:05

And we also have Erik Pickett. Erik is an Actuary and Chief Content Officer at Club Vita.

Welcome, Erik!

ERIK PICKETT 01:12

Hello Hello! It's great to be here!

RONORA STRYKER 01:15

As a quick reminder, listeners, if you want to download the paper, just go to soa.org and click the "Research Institute" tab and under "Research By Topic", click on "Mortality & Longevity." This will take you straight to the M&L landing page, where you will find a link to the paper and the podcast series.

And with that, I'll pass you over to Al and Erik for today's discussion on inequality.

AL KLEIN 01:45

Thanks, Ronora. As you mentioned, today we're diving into Chapter Four, which examines inequality as a driver of future mortality. Inequality, whether it be an income, education, availability of jobs, access to healthcare, or living conditions, can create significant differences in mortality rates across different populations.

ERIK PICKETT 02:08

Exactly. And not only does inequality result in different mortality rates between different groups, inequality also determines how susceptible different groups are to other drivers of changes in future mortality rates.

This is actually an area I work on closely in my day job: both capturing differences in current mortality rates by various different factors such as zip codes or postal codes, occupation type and benefit amounts: and also analysing differences in recent mortality trends. Did you know, in recent years we've seen higher mortality improvements in the Defined Benefit pensioner populations compared to the general population?

Actuaries really need to pay close attention to the demographics of the populations they are modeling and how these might change in the future when projecting future mortality rates.

AL KLEIN 02:57

That's right. And I've been involved in SOA work on the differences in mortality and mortality improvement by socioeconomic groups in the US over time. One big trend I have observed, which is consistent with what you are seeing, Erik, is a widening gap in mortality between the higher and lower socioeconomic groups.

That said, as I mentioned in the previous podcast, this is only the "looking back" part. As an actuary, you also need to determine whether this trend will continue or reverse, and at what level that is the looking forward piece of the actuarial mortality projections.

Also, as is emphasized in these podcasts, and as you mentioned, actuaries need to determine how different drivers will affect different groups in the future. For example, for a group that has recently had higher mortality

improvement, will the improvement continue to improve in the future and if so, at what rate? Is the mortality improvement sustainable or could it even reverse? You'll need to think about the drivers of these improvements to answer this question!

ERIK PICKETT 4:02

Thanks Al, and that's exactly why we're here.....to think about the drivers of future mortality!

Now let's dive into the material in this chapter and discuss some of the key determinants of inequality leading to differences in mortality rates. We're going to start with one of the most significant areas of inequality, income and socio-economic status.

AL KLEIN 04:23

There is a well-established link between income levels and life expectancy. Higher-income individuals tend to have better education, better access to healthcare, engage in healthier behaviors, and live longer. Meanwhile, lower-income individuals face more financial barriers and less access to care, have higher levels of stress and increased exposure to environmental hazards because of the neighborhoods they live in, and don't live as long.

ERIK PICKETT 04:51

As you mentioned before, this gap is widening in the U.S., but it's also widening in many countries around the world. Studies show that over the past few decades, improvements in mortality have been much stronger for high-income groups than for low-income groups. If this trend continues, it could lead to even greater disparities in mortality in the future.

AL KLEIN 05:13

Another important consideration is the impact of economic mobility. If lower-income individuals are unable to move up the economic ladder with better education and work alternatives, access to better healthcare and healthier lifestyle choices, like safe places to walk and better food choices, their economic mobility will remain limited. This creates a compounding effect where inequalities can persist across generations.

ERIK PICKETT 05:39

For actuaries, this means taking a nuanced approach to mortality modeling. Standard mortality assumptions, for both general and insured populations, may not apply equally across those different income and socio-economic groups, making it critical to incorporate socioeconomic-based mortality differentials into both current mortality modeling and long-term projections.

AL KLEIN 06:02

Another major area of inequality is access to healthcare. In many countries, lower-income populations have less access to preventive care, early diagnosis and high-quality treatment, all of which impact mortality rates.

ERIK PICKETT 06:18

And it's not just about having health insurance - It's also about health care utilization. Some populations, even if they have insurance, may not access care as frequently due to cost concerns, cultural barriers or lack of healthcare facilities in their area.

AL KLEIN 06:34

Rural communities, for example, often experience worse health outcomes due to limited access to hospitals and medical specialists. Telemedicine has the potential to bridge some of these gaps, but adoption rates and effectiveness vary widely. With the increasing doctor and nurse shortage, limited funding and the closing of health care facilities in the U.S., this typically impacts the rural communities and lower socioeconomic groups more, as it is not necessarily easy to commute into the big city for treatment. Also, with less access, lower socioeconomic groups may wait longer to seek treatment, leading to more difficult to treat conditions and potentially higher mortality.

ERIK PICKETT 07:17

So, actuaries need to assess whether healthcare disparities will widen or shrink in the coming years. Factors such as government policy, medical advancements and demographic shifts all play a role in shaping future health care, access and outcomes.

Moving on to the next area then, education level. This is another strong predictor of life expectancy. More educated individuals are more likely to make informed health decisions, adopt healthier lifestyles, and have better access to stable employment with healthcare benefits.

AL KLEIN 07:49

The challenge for actuaries is in measuring how changes in education levels will influence future mortality trends. Will greater access to education lead to better outcomes? Or will other factors, like economic downturns, offset those gains?

ERIK PICKETT 08:04

There's also an intergenerational effect going on here, with parents' education levels often influencing their children's education and health outcomes. So, improvements in education today could have long-term benefits for future mortality rates decades down the line. And likewise, the lack of improvements in education will likely continue or even worsen future mortality rates.

AL KLEIN 8:29

There is also a large amount of inequality at the international level. Life expectancy varies significantly between high-income and low-income countries. Differences in living conditions, healthcare, infrastructure, nutrition, and disease prevention all contribute to these disparities. Another factor that most people don't realize is that the greater the inequality within a country or region, the worse the overall mortality is. I mentioned earlier that the U.S. has had an increase in inequality over the last number of years. This is showing up as a lag in overall mortality for the U.S. relative to other high-income countries.

ERIK PICKETT 9:09

Moving back to an international perspective, actuaries working on international models need to account for the variations I mentioned so healthcare infrastructure, nutrition and disease prevention. Emerging economies may experience faster mortality improvements as health care access improves, whereas developed countries may see slowing improvements due to aging populations and lifestyle-related diseases.

AL KLEIN 9:35

Another factor is the impact of global health crises, such as pandemics, which disproportionately affect lower-income nations due to a greater proportion of less healthy individuals and weaker healthcare systems. Understanding these vulnerabilities is critical for actuarial modeling and forecasting.

ERIK PICKETT 9:53

So, listeners, we've now touched on the key areas of this chapter, and we hope this gives you a good overview of inequality considerations for future mortality. To finish the session off as usual, Al, would you like to run through a summary of how you and Yair saw the likely impact of inequality for the general population?

AL KLEIN 10:11

Yes of course. And as a reminder, at the end of each chapter, Yair and I included a table where we highlight the outlook for the impact of future, mortality, expectations of the different areas covered in the chapter. The key differentiators included in the table for this chapter were:

- Poverty: driven by income and socio-economic status
- Geographical locality
- Health care
- Diet
- Physical activity
- Education.

All of these areas are contributing to our overall projection of increased inequality and increased overall mortality outcomes in the future, both short and long term. However, we expect to see decreasing mortality for the more privileged groups with more resources, knowledge and opportunities, and increasing mortality for the less privileged groups.

As mentioned in each of the podcasts, you need to make assumptions for your specific population, which may differ from our overall assessment.

ERIK PICKETT 11:12

Thanks, Al. So, to summarize today's discussion:

- Inequality from many different factors, such as income, socioeconomic status, healthcare access and education, creates significantly different mortality outcomes between different groups.
- And not only does inequality result in different mortality rates between different groups, it determines how susceptible different groups are to drivers of changes in future mortality rates, and it also shapes overall mortality for the whole population.
- When projecting future mortality rates, actuaries need to think carefully about the make-up of the populations they are modeling and how differently drivers of changes in future mortality will affect these specific groups.

- With so much heterogeneity and mortality outcomes in populations relevant to actuaries, we must be very careful of a one size fits all approach to mortality projections.

AL KLEIN 12:05

That's a great summary, Erik. For actuaries, understanding inequality isn't just about tracking the past-it's about anticipating how disparities might shift in the future and the impact that this shift will have on your modeling of future life expectancy.

Ronora, back to you to wrap up this podcast.

RONORA STRYKER 12:24

Thanks, Al and Erik. Okay listeners, that's all we have time for today. Join us at the end of next month for our next episode, focusing on another key driver of future mortality: diseases.

Listeners, after 22 years here at the SOA I've decided to move on to the next chapter in my life, retirement!

I will be handing over the Mortality & Longevity Strategic Research Program reins to the very capable Kara Clark, a Senior Research Actuary who is a recent addition to our team here at the SOA Research Institute. She'll be hosting the remaining chapters in this podcast series. Welcome, Kara.

KARA CLARK 13:05

Thank you, Ronora. And we wish you the best of luck in your future endeavors.

And listeners, thank you all for joining us on our chapter-by-chapter journey through the *Long-term Drivers of Future Mortality* Podcast Series.

For the Mortality & Longevity Steering Committee and the Research Insights Podcast, I'm Kara Clark for the Society of Actuaries Research Institute.

ROSE NORTHON 15:20

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Society of Actuaries Research Institute
8770 W Bryn Mawr Ave, Suite 1000
Chicago, IL 60631
www.SOA.org