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# How Many Life Insurers Can the UK Pension Risk Transfer Market Sustain?

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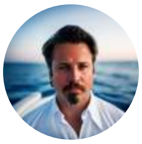
# Editor's Letter, Volume 4, Issue 03, March 2025



**Chris Wells**
Managing Editor
**Life Risk News**

There are now 11 participating life insurers in the UK pension risk transfer market, with three of those entering in the last seven months. That doesn't mean that the floodgates are open for many more, however. *Greg Winterton* spoke to **Chris Rice**, Head of Trustee Services at **Broadstone**, to get his views on the outlook for insurer activity in *How Many Life Insurers Can the UK Pension Risk Transfer Market Sustain?*

UK Chancellor of the Exchequer Rachel Reeves wants to unshackle billions of pounds locked in defined benefit pension fund surpluses to help stimulate the domestic economy. *Mark McCord* spoke to **Lara Desay**, Head of Risk Transfer at **Hymans Robertson**, and **Frankie Borrell**, Head of BPA Origination at **Royal London**, to get their insights into how such a move might impact the country's bulk purchase annuity market in *Questions Over UK Pension Risk Transfer Market as Government Mulls Defined Benefit Pension Surplus Changes*.

There have been some encouraging developments in the treatment of kidney disease in recent months, after decades of inactivity. *Greg Winterton* spoke to **Fergus Bescoby**, Head of Underwriting at **CG Analysts**, to get his views on how this might affect life expectancy underwriting in *Recent Developments in Kidney Disease Treatment to Have Little Short-Term Impact on Life Expectancy*.

QIAIFs, including life settlement funds, domiciled in Ireland received positive news in early March, as a consequence of the Central Bank of Ireland publishing the 50th edition of its AIFMD Q&A. *Greg Winterton* spoke to **David Naughton**, Partner and Head of Investment Funds and Financial Services Regulation at law firm **Byrne Wallace Shields**, to understand more about any potential impact on the life settlement market in *Central Bank of Ireland AIFMD Q&A Update Provides Boost to Alternative Investment Funds*.

Falls in the elderly population are a common reason for emergency room visits and hospital admissions. **Scott McClure**, Medical Director at **Fasano Underwriting**, looks at how life expectancy underwriters consider this risk in *Falls: Significance in Life Expectancy Underwriting*, a guest article.

Longevity risk is one of the largest risks that life (re)insurers are exposed to and many firms maintain a longevity risk capital model, making sure the methodology remains relevant and proportionate to the risk. **Megan Hart**, Senior Consultant, and **Ross Murray**, Partner and Head of Longevity at **Hymans Robertson**, take a look at these models, considering how they may evolve with post pandemic data and Solvency II reforms in *Spotlight on Longevity Capital Models*, our second guest article this month.

The Bank of England's Prudential Regulation Authority's Life Insurance Stress Tests (LIST) have now begun for some of the larger insurers in the country. *Greg Winterton* caught up with **Roger Lawrence**, Managing Director at **W L Consulting**, to get his views on the LIST and its potential impact on the market for this month's *Q&A*.

A new paper from Klarity and Munich Life Re US has examined physical activity data from wearable technology and tied this data to mortality risk. *Greg Winterton* spoke to **Will Cooper**, Founder and CEO of **Klarity** to get his thoughts on what this means for the life risk space in *New Insights from Wearable Technology Data Could Have Significant Impact on Longevity and Mortality Markets*.

I hope you enjoy the latest issue of Life Risk News.

# How Many Life Insurers Can the UK Pension Risk Transfer Market Sustain?

Author:
**Greg Winterton**
Contributing Editor
**Life Risk News**

Earlier this month, Brookfield, under its Brookfield Wealth division, announced that it was entering the UK's pension risk transfer (PRT) market, having gone through the approval process carried out by the Prudential Regulation Authority and the Financial Conduct Authority.

The news brings the number of participating life insurers in the market to 11, three of which – including Brookfield – have entered in the past seven months: Royal London announced its official entry in September last year, and Utmost did so in early January this year.

That there is clearly an opportunity in the market for new entrants should not be a surprise. The Pensions Regulator's Purple Book 2024, published in December last year, and something akin to a bible in the UK defined benefit (DB) pension industry, says that there were 4,974 DB pension schemes in the eligible universe in March last year. With the number of transactions in the market each year numbering around 150-200, at the current pace, there are more than two decades of de-risking activity remaining – a long time in financial markets.

While the likelihood of there being a glut of new entrants is low, for those that can and do, the coming years will provide plenty in terms of the supply of schemes hitting the market.

**"There are high barriers to entry given the requirement to obtain regulatory authorisation and set up the necessary infrastructure required to price, contract and administer bulk annuity policies"**
**- Chris Rice, Broadstone**

"There are high barriers to entry given the requirement to obtain regulatory authorisation and set up the necessary infrastructure required to price, contract and administer bulk annuity policies," said Chris Rice, Head of Trustee Services at consultants Broadstone.

"If this hurdle can be overcome, the market is attractive to any new entrant considering joining. As well as the schemes already advanced with their considerations of, and preparations for, insurance, the regulatory regime around defined benefit schemes is pushing those that are not yet there towards insurance over the next 5-10 years. While some schemes may continue indefinitely, for the vast majority it is when, not if, a bulk annuity policy will be purchased."

There is another potential headwind facing any other insurers looking to get a slice of the UK PRT pie.

A consistent barrier to growth parroted by market participants relates to the lack of human capital bandwidth that firms active in the space have. Much of the coverage of this issue tends to focus on the insurers themselves – after all, they are the ones that have to analyse the data provided by the pension schemes before they can come up with a price.

New entrants will need to hire people to do the work. They can do that by poaching from rival firms, of course, but this is something of a zero sum game for the market overall as actuarial talent is not entering the market at a rate consistent enough to keep wages consistent.

But they can't control other firms in the market, who are also feeling the squeeze. While training is helping, a drastic increase in the number of transactions completed each year is unlikely.

"It is not just at insurers where there are potential constraints on human capital. It is also the pension consultants, lawyers and administrators looking after and transferring the schemes. The work involved is actuarial, legal and investment advice along with data cleansing and member service, not all of which can be solved by increased technology. Insurers, lawyers, consultants and administrators are responding by scaling up recruitment and training to meet the demand and this has supported growth in the market over the last few years.  Following a similar approach can support steady growth at existing and new insurers but it would not be possible to suddenly and significantly increase deal volumes, however," said Rice.

There have been developments in the market, particularly at the smaller end, where 'off the shelf' solutions have gained traction, and this is also helping to absorb demand, but the gains in this area are set to happen after the ink dries on the initial contract.

"Up to now, a lot of the focus on efficiency has been based on pricing and we expect that to move to the post sale process, i.e., data cleansing and transfer of administration to the insurer. There is room for innovation and technology to play a greater role here," said Rice.

Whether the remainder of 2025 sees more insurers enter the UK market remains to be seen. But even if any do, the Brits have a way to go before they can compete with the US, which has approximately 20 insurers all vying for business.

One notable difference between the two, however, is the segmentation of the insurance market stateside. That market has evolved to a point where certain insurers play mostly – exclusively, in some cases – in the larger end of the market. The same goes for the smaller end, and the middle.

Whether the UK market follows a similar path remains to be seen. But Rice does say that, in the short-term, the smaller scheme cohort will be where the activity is.

> **"It remains to be seen just yet the extent to which the new entrants will quote at volume, if all current participants ramp up quotations and transactions it may become less likely a new entrant will find it as easy to build market share"**
> **- Chris Rice, Broadstone**

"A segmentation based on size of scheme is natural given the different characteristics of larger deals compared to smaller ones," he said.

"Nevertheless, it is the larger schemes that have more flexibility to consider continuing as they are for longer, and the smaller schemes that are being pushed to insurance by the regulatory regime and where the largest number of schemes are. We therefore expect the smaller end of the market to become more competitive over time. While new entrants need to complete a handful of decent sized deals to gain assets under management and efficiencies in process, we are starting to see insurers look at deals below their previous minima."

So, with off the shelf solutions gaining traction, certain insurers doing smaller deals than before, and the need for new insurers to build a book of business, it does indeed appear that the smaller end of the market seems to be where it is all happening which, in turn, means that any other insurers looking to enter the market face a tough competitive field.

"While all schemes are receiving quotes if they are patient, there is a building pipeline of schemes looking to approach the market that can support growth in capacity," said Rice.

"It remains to be seen just yet the extent to which the new entrants will quote at volume, if all current participants ramp up quotations and transactions it may become less likely a new entrant will find it as easy to build market share."

# Questions Over UK Pension Risk Transfer Market as Government Mulls Defined Benefit Pension Surplus Changes

Author:
**Mark McCord**
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**Life Risk News**

UK Chancellor of the Exchequer Rachel Reeves' announcement at the end of January that she wants to unshackle billions of pounds locked in defined benefit (DB) pension fund surpluses has raised questions about how such a move might impact the country's bulk purchase annuity market.

Reeves told a meeting of City chiefs that by releasing the money "trapped" in DB pensions, employers could allocate it to potentially more lucrative strategies outside of their scheme investment remits.

Surpluses are tied into schemes by rules agreed between sponsors and trustees. If the Chancellor loosens those rules, employers may be encouraged to run their schemes on, slowing growth in the bulk annuity market from which insurers are benefiting.

> **"These [new] rules might make it easier for a sponsor to access surpluses while the scheme is still running on or use it in a different way"**
> **- Lara Desay, Hymans Robertson**

"These [new] rules might make it easier for a sponsor to access surpluses whilst the scheme is still running on or use it in a different way, such as for DC contributions," said Lara Desay, Hymans Roberston's recently appointed Head of Risk Transfer.

Reeves' proposal has the backing of The Pensions Regulator whose Chief Executive, Nausicaa Delfas, said it "supports efforts to help trustees and employers consider how to safely release surplus if it can improve member benefits or unlock investment in the wider economy".

The motivation for changing the rules around surpluses is clear. About 75% of DB schemes are fully funded with around $226bn of surpluses at the end of January, according to the PPF 7800 Index. That money could provide plenty of ammunition for the Chancellor's hopes of stimulating the UK's economy.

The implications can be positive for sponsors and trustees alike. Employers will have new funds to support growth and investment initiatives, while scheme members could see some of the released capital ploughed back into the scheme benefit schedules or put into defined contribution (DC) schemes.

Just how beneficial any move might be would depend on the detailed wording of any proposal. A draft is expected after a consultation that's slated for the spring. For many schemes, however, this isn't even an option: only those that struck agreements before 2016 are entitled to begin the process of early access to surpluses.

Already, at least two major companies have announced run-ons since the Chancellor's announcement. In March, global investor Aberdeen agreed a plan with trustees to access £800m of DB scheme surpluses. That followed a decision by Schroders to run-on its scheme in January.

A change that could benefit the risk-offset industry is a redrawing of the tax code associated with wound-down schemes. Full buy-outs carry a tax implication that can outweigh the cost benefits of winding down. Although previous chancellor Jeremy Hunt lowered the tax rate to 25% from 35%, it's still regarded as penal, especially for smaller schemes. If Reeves introduces a lower tax rate, the cost of wind down relative to that of running-on a scheme would be reduced and potentially drive more business to bulk annuity providers.

The likelihood of a shift either way, however, hinges on a variety of factors as well as the peculiarities of each scheme. While sponsors may be encouraged to run-on if the Chancellor creates a climate more favourable to doing so, they will still need the support of trustees. That could be forthcoming with incentives such as pledging to use substantial proportions of those funds to top-up DB contributions, enhance benefits or fund DC schemes. Both the Aberdeen and Schroders deals, for example, were focussed on releasing surpluses, in part, to fund DC contributions.

Covenants written into schemes differ, too, and where they place less emphasis on sharing returned surpluses to members, trustee appetite for a run-on is likely to be minimal. As well, a run-on under better terms may still be more expensive to administer for smaller schemes, which don't have the economies of scale to maximise returns from, or balance the risks to, their members' contributions.

"For the most part, unless there is a particularly strong sponsor covenant in place, trustees are generally targeting the insurance market – it's the sponsor that is driving the run-on discussion," Desay said.

"If you can afford to buy-in/buy-out that is likely to remain the option of choice at the smaller end of the market."

Desay also doubts whether other pension developments introduced recently, including the CDC scheme, is likely alter the trend towards buy-outs and wind-downs.

The promise of reinvesting in the company is likely to be a greater incentive to sponsors than the opportunity to invest elsewhere. With restrictions on schemes' investment strategies already limited, industry figures have questioned how much more capital sponsors would allocate to other assets.

"It's been somewhat lost in the debate so far that bulk annuity providers already invest tens of billions in productive assets in the UK," said Frankie Borrell, Head of BPA Origination at Royal London.

> **"The government would better meet their objectives through supporting the thriving bulk annuity market whilst providing the right investment opportunities to insurers, that they can naturally invest in at scale and more efficiently than most pension schemes"**
> **- Frankie Borrell, Royal London**

Offset deals represent a small part of insurers' business but it is a market that has been growing for a decade. Willis Towers Watson forecasts that £50bn of bulk annuity transactions will be completed in 2025, which will be supplemented by £20bn of longevity risk deals, a market that it said is likely to benefit from any loosening of surplus return rules.

Insurers hope any measures Reeves introduces will do little to halt growth in a market that Royal London's Borrell said had seen thousands of buy-ins by bulk annuity providers give millions of members of DB pension schemes financial security.

"Whilst it is often the multi-billion-pound transactions that attract the headlines, beneath the surface there is a highly functioning and competitive marketplace with all segments being well serviced by the ten active bulk annuity providers," Borrell said.

"Buy-out and wind-up of a DB pension scheme also crucially removes funding risk and delivers improved operational freedom for the companies that sponsor them."

He stressed the need for to ensure protections to scheme funding levels under any new rules, a sentiment that pension and insurance industry advocates alike support. The Aberdeen deal struck in March came with stringent guardrails to ensure that the security and funding position of the DB scheme was not affected, for example.

Borrell warned, however, that unless carefully implemented, change could come unintended consequences.

"Many trustees and corporate sponsors of pension schemes remember all too well the surpluses and contribution holidays that were enjoyed in the 1990s, only for the situation to reverse into a 'deficit migraine' for over 20 years," he said.

"The government would better meet their objectives through supporting the thriving bulk annuity market whilst providing the right investment opportunities to insurers, that they can naturally invest in at scale and more efficiently than most pension schemes."

# Recent Developments in Kidney Disease Treatment to Have Little Short Term Impact on Life Expectancy

Author:
**Greg Winterton**
Contributing Editor
**Life Risk News**

The extent to which someone has chronic kidney disease (CKD) and the actual stage of the CKD is indicated by the estimated glomerular filtration rate (eGFR), a measure of how well the kidneys filter blood.

Someone with Stage 1 kidney disease has a GFR of over 90 mL/min and those with Stage 2 kidney disease have a GFR between 60-89 mL/min; there is little cause for concern here, however, and certainly, from a mortality modelling perspective, has little to no impact on life expectancy. Even someone with Stage 3a kidney disease – a GFR of between 45 and 59 mL/min – can lead a normal life, provided that they take medication and make the necessary lifestyle changes.

> **"It is not uncommon for the elderly with stage 5 CKD (eGFR <15) to refuse dialysis and opt for conservative treatment only. Dialysis can be a burdensome treatment and may reduce quality of life, particularly in patients with other conditions. Dialysis treatment doesn't always prolong life in patients with other medical conditions and even if it does, much of it may be spent in hospital"**
> **- Fergus Bescoby, CG Analysts**

"The progression from Stage 1 to Stage 2 can take many years. The difficulty, however, is actually diagnosing the condition at such an early stage as there will likely be no tell-tale symptoms at that point," said Fergus Bescoby, Head of Underwriting at CG Analysts.

"If someone is diagnosed as having Stage 1 or 2 CKD, making improvements to their lifestyle along with ensuring adequate control of any secondary conditions (hypertension, diabetes etc) can have a big impact and significantly slow the process of moving through the stages. Our research shows that Stages 1,2 and 3a have no real impact on life expectancy".

It is when someone hits Stage 4 that the alarm bells begin to ring, as a eGFR of 15–29 mL/min means that they have a severe loss of kidney function, with toxins accumulating in the blood.

Fatigue, nausea, swelling, loss of appetite, itching, and bone disease are common here, and the individual concerned will be considering their options, which could include dialysis or a kidney transplant – or not.

"It is not uncommon for the elderly with Stage 5 CKD (eGFR <15) to refuse dialysis and opt for conservative treatment only. Dialysis can be a burdensome treatment and may reduce quality of life, particularly in patients with other conditions. Dialysis treatment doesn't always prolong life in patients with other medical conditions and even if it does, much of it may be spent in hospital," said Bescoby.

Dialysis and kidney transplants have been the primary life-sustaining treatments for advanced CKD for over 60 years. Dialysis was first successfully used in the 1940s but became widely available as a standard treatment in the 1970s. The first successful kidney transplant was performed in 1954, with the procedure becoming more common in the 1970s with improvements in immunosuppressive drugs and the establishment of the United Network for Organ Sharing.

Since then, however, there has been little change in how advanced kidney disease has been treated, but recent months have delivered two significant developments.

The first is in the field of xenotransplantation. In March last year, Richard Slayman, a 62-year-old American man living with kidney failure became the first person to receive a successful transplant of a pig kidney. Slayman sadly died in May 2024, but since then, others have also received kidney transplants, the most recent of whom is Tim Andrews, a 66-year-old who lives in Concord, New Hampshire.

In early February, United Therapeutics Corporation announced that the US FDA has approved it to initiate a clinical study of the company's investigational UKidney, which is derived from a 10 gene-edited source pig. The study will enrol an initial cohort of six end-stage renal disease (ESRD) patients, expanding to up to 50 participants, and is intended to support a Biologics License Application (BLA) with the FDA. United Therapeutics expects the first xenotransplant in this trial to be performed around mid-year 2025.

The second is the approval of Ozempic to treat chronic kidney disease among people with type 2 diabetes.

These developments could be significant, and for mortality analysts, a rethink may be required.

"Treatment for kidney disease, and therefore our understanding of the impact of treatment on mortality has been similar for many years now. It's imperative that, whenever significant developments like Ozempic come along, underwriters are aware of any potential improvements in life expectancy and revisit their pricing models accordingly", said Bescoby.

The second Thursday in March marks World Kidney Day, which serves to raise awareness of kidney health globally; a wide range of organisations from all corners of the globe put on events designed to educate people about the impact of kidney disease and its associated health problems.

> **"In life settlements, in particular, we are looking more at the overall picture of the individual than that of the population, and, in the short term, there will likely be little will change to how we view kidney disease. But, if these new treatments show progress in the next few years, then certainly, that could have a noticeable impact on the LE of many individuals"**
> **- Fergus Bescoby, CG Analysts**

And it is exactly those associated problems that underwriters need to factor into their models. Kidney disease was the eighth biggest cause of death of Americans in 2023, but, unlike some of the other impairments on the list, such as cancer or heart disease, CKD is rarely the exclusive cause of death.

"CKD is usually caused by other conditions which put strain on the kidneys, for example heart disease, hypertension or diabetes. It is very common in the elderly and if you see an 80-year-old in the life settlement market, the chances of them not having some level of CKD are slim. The cause of death for someone with CKD will generally be one of the secondary conditions, the most common being some form of heart disease". said Bescoby.

There are 92,000 Americans waiting for a kidney transplant, and not nearly enough kidneys. When a kidney does become available, there might be matching issues between donor and potential recipient. When you add to that the understanding of the effectiveness of Ozempic on kidney disease at the population level is still low and the fact that the growth stage of the field of xenotransplantation is embryonic at best adds up to something of a status quo for mortality modellers – for now.

"These new developments are hugely encouraging in theory, but much more data is needed to understand more precisely what the impact will be on both population and individual mortality. In life settlements, in particular, we are looking more at the overall picture of the individual than that of the population, and, in the short term, there will likely be little will change to how we view kidney disease," said Bescoby.

"But, if these new treatments show progress in the next few years, then certainly, that could have a noticeable impact on the LE of many individuals."

# Central Bank of Ireland AIFMD Q&A Update Provides Boost to Alternative Investment Funds

Author:
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**Life Risk News**

Ireland's status as a popular European domicile for life settlement funds is rooted in the country's double tax treaty with the US which allows Irish investment vehicles, such as Section 110 companies and Qualifying Investor AIFs (QIAIFs), to receive US life settlement payouts free from US withholding tax (provided they meet the treaty's limitation on benefits provisions). Tax, after all, has a significant impact on the net returns of any investment fund, alternative or not.

And QIAIFs, including life settlement funds, already domiciled in the Emerald Isle received a small boost in early March, as a consequence of the Central Bank of Ireland (CBI) publishing the 50th edition of its AIFMD Questions and Answers (Q&A).

Among the notable updates this time include the allowing of QIAIFs to provide financial guarantees for third-party obligations. Historically, QIAIFs operating in Ireland were restricted from guaranteeing debts that were not directly tied to their own operations. The recent change removes this limitation, allowing QIAIFs to provide financial guarantees for third-party obligations (subject to certain requirements being met). This flexibility could potentially alter risk exposure, financing structures, and investment strategies across multiple asset classes.

> **"The ability to guarantee third-party debts may open up new financing structures for QIAIFs. For instance, funds may be able to facilitate structured lending arrangements that enhance liquidity and capital efficiency"**
> **- David Naughton, Byrne Wallace Shields**

"The ability to guarantee third-party debts may open up new financing structures for QIAIFs. For instance, funds may be able to facilitate structured lending arrangements that enhance liquidity and capital efficiency. This could make Ireland-domiciled funds even more competitive in the global market," said David Naughton, Partner and Head of Investment Funds and Financial Services Regulation at law firm Byrne Wallace Shields LLP.

While this regulatory change would appear to offer greater financial flexibility, it also introduces potential additional risks. QIAIFs providing guarantees on third-party obligations could face additional liabilities, potentially impacting investors if guarantees are called upon. If applicable to life settlement funds, which already manage longevity and premium payment risks, they will need to carefully assess how these guarantees align with their risk management strategies.

"The clarification on the rules around the guarantee of third-party debts is positive and demonstrates successful engagement between the CBI and the funds industry in providing clarity to QIAIFs and their managers. Naturally, this is not a development that will immediately and significantly impact or accelerate growth in the Ireland-domiciled life settlement funds market. If this new rule is now of relevance to the sponsor of a life settlement fund, they will have to consider carefully how they incorporate the benefits that this new rule offers in terms of their overall portfolio management offering," added Naughton.

It's not only internal risk management where life settlement fund managers will need to pay close attention.

"Given the nature of life settlement investments, where returns are realised over extended periods, investors are likely to scrutinise any increased exposure to third-party liabilities, which could impact capital raising." said Naughton.

Moreover, regulatory bodies in other jurisdictions, such as the US Securities and Exchange Commission (SEC) or Internal Revenue Service (IRS) may take an interest in how Irish-domiciled life settlement funds utilize these new capabilities.

This latest edition of the AIFMD Q&A is part of the broader reform of the AIFMD regime. AIFMD II is set to come into force in April 2026, and introduces stricter rules on delegation arrangements, liquidity management tools, the mandating of the use of liquidity management tools by AIFMs to better handle liquidity risks, the establishment of a new framework for loan origination by AIFs, including specific requirements and limitations, and enhanced requirements for depositaries, including stricter liability provisions and clearer rules on the delegation of depositary functions.

This updated Q&A follows on from the publishing in November last year of the final report of the Funds Sector 2030 document, which recommended that the Central Bank of Ireland should review its AIF Rulebook and associated requirements that impact on the establishment of private asset funds, such as life settlement funds, in Ireland.

> **“Given the nature of life settlement investments, where returns are realized over extended periods, investors are likely to scrutinize any increased exposure to third-party liabilities, which could impact capital raising”**
> **- David Naughton, Byrne Wallace Shields**

The swath of recent developments in Ireland give market participants cause for optimism.

“The CBI’s clear focus on this area and the upcoming AIF Rulebook revision which will come as a result of AIFMD II can add clarity of operation for private asset fund structures in a number of areas,” said Naughton.

“Following the publication of the Fund Sector 2030 report and its recommendation that the AIF Rulebook be reviewed to support growth in private assets, the CBI has been working closely with the funds industry to understand what areas need focus and possibly change. For life settlement structures, clearly a segment of the private asset funds sector we see in Ireland, these are positive signs of evolution, recognising wider global trends.”

# Life ILS Conference 2025

TUESDAY 20TH MAY 2025

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Life Risk News

# Falls: Significance in Life Expectancy Underwriting

Author:
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Medical Director
**Fasano Underwriting**

> "Fall related injuries are associated with significant morbidity, change in functional status and increased need for nursing home placement. Complications resulting from falls are the leading cause of death from injury in individuals over 65"

As our population ages, the significance and frequency of falls increases. This affects life expectancy as well as morbidity and mortality. It is important to remember this both when evaluating prospective clients in life underwriting and when considering life settlements. In order to begin to understand the significance of falls in the elderly, it is always helpful to start with a definition. What exactly constitutes a fall? The World Health Organization defines a fall as an 'event where a person comes to result inadvertently on the ground or other lower level'.

Falls in the elderly population are a common reason for emergency room visits and hospital admissions. According to the CDC, about 36 million falls are reported by older adults each year. The CDC also estimates that each year approximately 50 billion dollars is spent on medical costs related to older adult falls. In 2020, 27.6% of adults over age 65 reported a fall in the preceding year. It is reported that 60% of individuals with a fall in the preceding year will have a subsequent fall. Falls are underreported as some result in minor injury and no treatment is sought. This makes sense as someone who stumbles and gently goes to the ground without injury is more likely to brush it off and not report it to their physician. Previous studies of community-dwelling older individuals found 5-10% of falls resulted in fractures, head trauma, or major lacerations. Falls result in approximately 60% of all non-fatal injuries leading to emergency room visits in people over the age of 65. Fall related injuries are associated with significant morbidity, change in functional status and increased need for nursing home placement. Complications resulting from falls are the leading cause of death from injury in individuals over 65.

It is possible to evaluate medical records and medical history for risk factors that may lead to increased frequency of falls. UpToDate reports the following as significant risk factors for falls: prior history of fall, age, lower extremity weakness, female sex, cognitive impairment, balance problems, psychotropic drug use, arthritis, history of stroke, dizziness, orthostatic hypotension, and anemia. Other studies include sensorineural problems such as neuropathy and intermittent vertigo as well. Clinicians and geriatricians frequently do in office assessments for fall risk. Frequently, the tool used for this is Up and Go testing. This involves having an individual stand from a chair, walk 10 feet and return to the chair and sit. This test is timed. Less than ten seconds is considered normal. Elderly individuals who can complete this in under 20 seconds are considered to have good mobility and can likely walk alone without an aid. Greater than 30 seconds indicates a fall risk.

When evaluating falls for underwriting it is important to remember that not all falls are equal in significance. The environment of the fall and the conditions leading to the fall are important considerations. Indoor falls at home are associated with indicators of poor health, disability and inactive lifestyle.

Outdoor falls are associated with an active lifestyle and better than average health. As can be imagined, a trip and fall while jogging outside is a different situation from a functional standpoint than a fall while simply trying to get out of bed.

The ability to get up following a fall is an important consideration as well. Only one half of older individuals who fall are able to get up independently. This can result in "Long Lie" which can cause these individuals to suffer lasting declines in their activities of daily living. The injuries resulting from falls are one of the most important considerations for assessing mortality and morbidity risk. The highest associated mortality from a fall Is associated with those resulting in intracranial injuries and hip fractures.

Various studies have attempted to look at the short-term mortality risk following a fall. One study found the mortality risk after a fall to be 9.6% in the first 30 days and 33% after a period of one year. Another study found the one-year cumulative mortality following a fall with a severe fracture to be 25.2%. The cumulative mortality for individuals with a fall without a severe fracture was found to be 4%. One highly regarded reinsurance manual recommends life insurance declination for individuals with greater than or equal to three falls in one year, a fall resulting in long lie, or a history of recurrent falls with multiple fall risk factors.

> "An elderly person out walking accidentally knocked over by a dog is different than a person falling at home after tripping over their shoes. The previous person is likely active and statistically more likely healthy, and the chance of subsequent falls is likely less"

In conclusion, falls are associated with an increased risk of morbidity and mortality. It is important to remember that not all falls are created equal. Location and type of fall are important when assessing risk. An elderly person out walking accidentally knocked over by a dog is different than a person falling at home after tripping over their shoes. The previous person is likely active and statistically more likely healthy, and the chance of subsequent falls is likely less. Second, the injuries from the fall are important to consider as well. Previous hip fractures from a fall or intracranial injuries indicate likely significant morbidity and risk for future significant falls. Last, significant fall risk – even without a history of falls – warrants debits and a higher mortality risk assessment in life expectancy underwriting.

**Scott McClure** is Medical Director at **Fasano Underwriting**

*Any views expressed in this article are those of the author(s) and may not necessarily represent those of Life Risk News or its publisher, the European Life Settlement Association*

# Spotlight on Longevity Capital Models

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**Hymans Robertson**

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> "From our annual survey, we found that the vast majority (82%) had not made an additional risk allowance in their capital models for Covid-19, and most (71%) also didn't think there had been a significant divergence between their capital and BE approach since the pandemic. This might be because the approaches didn't align closely prior to the pandemic, and so any divergence since then is not particularly significant"

Longevity risk is one of the largest risks that life (re)insurers are exposed to. Many firms maintain a longevity risk capital model, making sure the methodology remains relevant and proportionate to the risk. We shine a spotlight on these models here, considering how they may evolve with post-pandemic data and Solvency II reforms.

Throughout, we share insights from our 2024 longevity capital survey covering 15 firms in the UK market.

**Consistency with best estimate (BE) assumptions**

The pandemic has changed how BE assumptions are derived. Firms that use the CMI model are no longer fully including all years of data when deriving their trend assumption. Some have changed their approach completely, making new judgement-based adjustments outside of the model. The methodology within longevity capital models should be closely aligned to the approach taken to set BE assumptions. This is so that the true uncertainty underlying these assumptions can be assessed. Given this, we might expect to see corresponding changes come through within longevity risk models.

From our annual survey, we found that the vast majority (82%) had not made an additional risk allowance in their capital models for Covid-19, and most (71%) also didn't think there had been a significant divergence between their capital and BE approach since the pandemic. This might be because the approaches didn't align closely prior to the pandemic, and so any divergence since then is not particularly significant. For example, since the CMI model is not stochastic, it is not common for firms to use it directly in their capital models. Given the continuing evolution of the CMI model, we may see more firms bringing the model into their risk calibration process.

Overall, most firms aren't making many changes to their models. This might change as the CMI model continues to evolve - we are expecting significant changes to be made in CMI_2024.

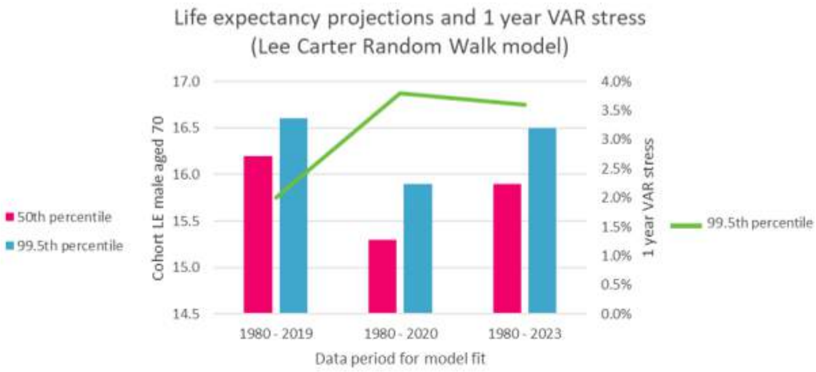
**Use of post-pandemic data**

Another puzzle within longevity risk models is how to make use of post-pandemic data. This is particularly important within the "new data risk" component of longevity trend risk, as discussed in a previous article.[1]

This risk captures the potential impact a new year of data can have on the future view of improvements. The size of the stress is driven by the volatility of the historical data. The chart shows how life expectancies and stresses change when different periods of data are used.

We can see that extending the pre-pandemic era data (1980-2019) to include 2020 has a big impact on the capital stress (increasing from c2% to c4%). It also materially reduces the overall life expectancy (at both the 50th and 99.5th percentile points on the distribution). Including data up to 2023 results in life expectancies which more closely align to the level seen prior to the pandemic, but the stress remains as high as when fitting to 1980-2020 data.

> "A big part of longevity risk models is "event risk" which considers the possibility that events, such as a medical breakthrough, could materially change expectations of mortality improvements. This component is normally calibrated by applying expert judgement to derive several scenarios...given the materiality of this component, the scenarios can be subject to significant scrutiny from independent validators and the regulator and often relies on input from medical experts"




This suggests that, even once mortality data returns to a more stable level (as seen for 2023), the increased capital stress caused by the pandemic will persist within calibrations. Including 2020 (and 2021) in the historical data could lead to an overestimation of the risk, since these data points are unlikely to have been used to inform best estimate projections.

So how should firms deal with this issue? A temporary option is to not recalibrate the model and only use data up to 2019. This will result in the calibration becoming increasingly out of date. Alternative practical solutions in the longer term include:

- Adjusting the data to strip out the volatility in 2020/21. This is a simple solution but is a little clumsy and requires some care and judgement on how much they are adjusted.
- Developing the CMI model to be stochastic so that the same parameter framework (including 0% weight on pandemic years) could be used as in the best estimate. This would have the benefit of aligning the capital and BE methodology (as discussed above).
- Applying statistical techniques to identify outliers within the historical data, as set out by Stephen Richards in the 2023 IFoA paper Robust Mortality Forecasting in the Presence of Outliers.2 This provides a framework, but judgement is still needed to decide on the level beyond which data points are designated as outliers.

From our survey, c50% and c80% had not considered how their trend stress calibrations would include 2022 and 2023 data respectively, so this is an area that will require more thought soon.

**Keeping "event risk" relevant**

A big part of longevity risk models is "event risk" which considers the possibility that events, such as a medical breakthrough, could materially change expectations of mortality improvements. This component is normally calibrated by applying expert judgement to derive several scenarios.

Given the materiality of this component, the scenarios can be subject to significant scrutiny from independent validators and the regulator and often relies on input from medical experts. It is important to keep the scenarios relevant and up to date.

Firms will want to consider recent developments such as the use of AI within the medical sector, the recent excitement around weight management drugs and the advancements in cancer diagnostic programs including Multi-Cancer Early Detection (MCED) tests.

**Solvency UK reforms**

Another area of interest in relation to longevity capital models (and internal models more generally) is the Solvency UK reforms. The PRA has said it wants to make the internal model approval process easier. This news will be welcomed by firms looking to make Major Model Changes in the short-term.

These simplifications do not reduce the high-quality modelling standards required of firms. Firms will still need to validate their models to demonstrate they accurately reflect the risks and continue to do so over time. Updates to this validation process have been set out in SS1/24[4] including the need for CROs to do a written attestation on the quality and independence of the validation. This may increase the need for external validations.

We're expecting to see lots of activity in the longevity capital space over the next few months. In particular for the insurers who have recently entered the BPA market, we might expect to see new models being built, or updates to existing models being needed to reflect any changes to their risk profile.

**Megan Hart** is a Senior Consultant and **Ross Murray** is Partner and Head of Longevity at **Hymans Robertson**

**Footnotes**

*1 www.hymans.co.uk/media/uploads/The_impact_of_COVID_on_new_data_risk.pdf*

*2 www.actuaries.org.uk/media/agklcl1d/robust2_-s_richards_26062023_sessional_27112023.pdf*

# Q&A

**Roger Lawrence**
Managing Director, W L Consulting

Author:
**Greg Winterton**
Contributing Editor
**Life Risk News**

In the summer of 2024, the Bank of England's Prudential Regulation Authority announced the latest planned iteration of their insurance stress tests - now branded Life Insurance Stress Tests (LIST) - which has now begun for some of the larger insurers in the country. Greg Winterton caught up with Roger Lawrence, Managing Director at W L Consulting, to get his views on the LIST and its potential impact on the market.

**GW: Roger, given the UK's evolving macroeconomic landscape, how does LIST account for emerging systemic risks such as prolonged stagflation or a sharp correction in the gilts market, and do you believe the stress parameters adequately reflect real-world tail risks?**

**RL:** It's important to remember that the gilt crisis was one of the reasons that LIST, as it now is, exists in the first place, as it exposed vulnerabilities that many had assumed were unlikely to materialise in such a short time frame. Earlier stress tests were conceived in the age of QE and often focussed on "low for longer" scenarios and how insurers might perform in a continuing era of low interest rates and inflation. They also included asset shock scenarios, but the gilt crisis has exposed vulnerabilities. With a mushrooming pension risk transfer (PRT) market, a range of new risks are developing, so these new tests are to broadly simulate one scenario, a severe global recession.

**GW: The UK's life insurance industry has a not insubstantial exposure to illiquid assets, particularly in with-profits and annuity portfolios. To what extent do you think LIST's liquidity scenarios challenge the industry's ability to meet policyholder obligations under extreme conditions?**

**RL:** I think the key question here is whether its liquidity scenarios genuinely push insurers to confront extreme but plausible redemption pressures, or whether the exercise remains a largely theoretical assessment of liquidity buffers. The events of the LDI crisis in 2022 demonstrated that even well-capitalised institutions can face unexpected liquidity crunches even in the deepest liquid markets when market conditions deteriorate rapidly. Illiquids are not explicitly captured in the LIST but varying degrees of credit downgrade together with default rates are applied based on quality. Portfolios of securitised illiquids, especially within the matching adjustment, are assumed to need restructuring.

**GW: From a prudential regulation standpoint, how does LIST compare with previous stress-testing frameworks, such as Solvency II's Own Risk and Solvency Assessment (ORSA), in terms of sophistication and predictive validity?**

**RL:** LIST represents an evolution of previous stress-testing approaches, but it sits within a broader framework that includes Solvency II's Own Risk and Solvency Assessment (ORSA). While ORSA is an internal exercise, tailored to the risk profile of each insurer, LIST provides a standardised, regulator-led benchmark that allows for industry-wide comparison. One of the key differences is that LIST, by design, is more prescriptive in its assumptions, which can be both a strength and a limitation. The challenge is that while standardised stress tests provide valuable insights at a sector level, they may not fully capture firm-specific nuances in risk management. That being said, LIST's methodology continues to evolve, and its ultimate effectiveness will depend on how well it complements existing risk assessment frameworks without becoming a box-ticking exercise. For the first time, the results of the primary test will be made public at company level rather than in aggregated form which will need sensitive handling by the regulator.

*Continued on next page...*

**GW: How do you expect LIST results to influence future regulatory capital requirements, particularly with the ongoing Solvency II reforms, and could this lead to a more UK-specific prudential regime diverging from the EU model?**

**RL:** This year's tests are a staged asset shock test, the so-called '1 in 200 years' event which, whilst being calibrated using new real-world parameters, will add to the regulator's understanding of company resilience. This is the primary test for the regulator to assess whether their capital requirements are sufficiently robust or not. However, it is joined by two, non-published additional tests which are designed to improve the regulator's understanding of emerging risk. The first, which concentrates further on the matching adjustment asset concentrations, especially equity release mortgages, is a matter of continuing regulatory concern since Solvency II was introduced in 2016. The second is a study of funded reinsurance which has been driven by the PRT market.

The results could have a material influence on future regulatory capital requirements, particularly in the context of the UK's ongoing Solvency II reform agenda. The government has signalled a willingness to diverge from the EU regime in certain areas, such as the treatment of matching adjustment portfolios and the recalibration of risk margins. If LIST were to reveal significant capital vulnerabilities in specific areas - whether related to longevity risk, credit risk, or liquidity concerns - regulators could respond by adjusting capital buffers or imposing additional stress-based capital add-ons that will further reform 'Solvency UK'. The challenge, as always, will be to strike the right balance: a stress-testing regime that is overly punitive could stifle innovation and investment, whereas one that is too lenient might fail to capture latent risks.

**GW: Lastly, Roger, beyond quantitative solvency metrics, does LIST incorporate qualitative assessments, such as the effectiveness of insurer risk governance frameworks and management responses under stress conditions? If not, do you think this is a missed opportunity?**

**RL:** There is an important discussion to be had about whether LIST sufficiently incorporates qualitative factors such as governance, risk management effectiveness, and strategic decision-making under stress. While capital adequacy is a critical pillar of financial resilience, the ability of insurers to respond dynamically to crises - whether through contingency planning, operational resilience, or risk governance - can often be just as important.  The banking sector has long recognised this, with regulatory stress tests placing increasing emphasis on management actions and the credibility of crisis response plans. If LIST does not currently embed these qualitative dimensions in a meaningful way, that would indeed be a missed opportunity. A well-designed stress test should not only evaluate a firm's balance sheet strength but also its institutional preparedness for navigating extreme scenarios in practice.

**Roger Lawrence** is Managing Director at **W L Consulting**

# New Insights from Wearable Technology Data Could Have Significant Impact on Longevity and Mortality Markets

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**Life Risk News**

Scientists generally agree that walking for regular activity can help reduce the risk of health problems such as heart disease, obesity, diabetes, high blood pressure and even depression. Whilst the often touted '10,000 steps per day' figure is not a scientifically proven threshold, it has become a general guideline, one that many people are now able track, thanks to their smartphone.

And now, a new paper, Physical activity data from wearables from Klarity and Munich Life Re US has examined physical activity data from wearable technology and tied this data to mortality risk.

The study leveraged UK Biobank data that included over 58,631 lives (and 837 deaths).

Among the findings include: Individuals walking at least 7,000 steps per day experience significantly lower mortality risk, regardless of BMI, age, or smoking status; smokers with a daily step count of at least 7,000 have better mortality than non-smokers with fewer than 5,000 daily steps; obese participants with at least 7,000 daily steps have 40% lower mortality than "normal" BMI participants with a daily step count below 5,000; and pre-diabetics with at least 7,000 daily steps have a 60% lower mortality risk than individuals with normal A1C who walk fewer than 5,000 daily steps.

The findings could be significant for underwriters in the life insurance market.

> **"Wearable data can be a window into the real-time health and lifestyle habits of applicants and may allow insurers to create more accurate and inclusive underwriting while simultaneously encouraging healthier behaviors among policyholders"**
> **- Dr. Gina Guzman, Munich Life Re US**

"This research demonstrates the potential of using data from wearables to segment risk and potentially expand insurability," said Dr. Gina Guzman, Chief Medical Officer at Munich Re Life US.

"Wearable data can be a window into the real-time health and lifestyle habits of applicants and may allow insurers to create more accurate and inclusive underwriting while simultaneously encouraging healthier behaviors among policyholders."

Underwriters would first need to incorporate the data from wearable technology into their process, something which is already technically feasible, and an endeavour that is not as difficult as it might appear on the surface.

"Integrating wearable data into life insurance processes has never been easier. Policyholders can sync their wearable devices with a single implementation, and over the past seven to eight years, standardisation efforts have significantly improved. Insurers can start leveraging step count data from smartphones immediately as a first step, with broader wearable integration achievable in the near term," said Will Cooper, Founder and CEO of Klarity.

Indeed, some insurers already have an existing program, like John Hancock's Vitality, a rewards program that "rewards members for their everyday healthy activities, like walking the dog, going to the doctor and buying healthy food."

And Vitality Insurance in the UK – owned by Discovery Holdings – also has a rewards program where customers can connect to their app and link up with a fitness tracker, so there is already activity in this space.

So, it would appear that the proof of concept and the technical wherewithal is already in place. Which just leaves the challenge of getting someone to actually engage with this new digital frontier.

In the life settlement market, one might be forgiven for thinking that this might be a tough ask. The cohort of insureds that participate in the space are healthier and wealthier than the average individual, and crucially, older, which many assume means that they are less likely to engage with the latest and greatest in technology developments. Not necessarily, according to Cooper.

"Even retirees - who may be less likely to use wearable technology - normally have smartphones, which already track step count passively," he said.

"This provides an easy entry point for life insurers looking to enhance risk stratification for this demographic. Encouraging policyholders to sync their devices or participate in step-tracking initiatives can help insurers gather valuable mortality-related insights without requiring widespread adoption of additional wearables."

**"Even retirees - who may be less likely to use wearable technology - normally have smartphones, which already track step count passively. This provides an easy entry point for life insurers looking to enhance risk stratification for this demographic. Encouraging policyholders to sync their devices or participate in step-tracking initiatives can help insurers gather valuable mortality-related insights without requiring widespread adoption of additional wearables"**
**- Will Cooper, Klarity**

It is not only life insurers who would be able to use this data and technology to better understand the mortality profile of the older cohort. Specialist life expectancy underwriters, who provide life expectancy reports to asset managers both during the original policy acquisition stage and afterwards (to keep the portfolio valuation up to date) could benefit here.

"These specialists can certainly leverage this data and insight provided that data privacy regulations are met and individual's opt-in to share their wearable data. Our role is to help insurers and underwriters stratify risk more effectively while maintaining compliance with privacy laws," said Cooper.

The pension risk transfer market is another area which could be impacted by the incorporation of wearable technology data into the underwriting process.

"Better mortality data can have a direct impact on pension risk transfer deals, which involve thousands of individuals," said Cooper.

"More accurate risk stratification means insurers can price these deals with greater precision, reducing uncertainty."

There are accuracy and manipulation risks, and not everyone carries their phone all the time, which could lead to gaps in data. Also, there are fairness and ethical Issues - would it be fair to penalise someone who doesn't walk a lot due to a disability or job constraints? Would insurers reward active people with lower premiums and charge sedentary ones more?

Those are the questions that will need to be answered if this kind of data were to ever be adopted by the life insurance industry *en* masse. But, as with many new developments, it's a case of one thing at a time.

"Carriers looking to incorporate third-party or wearables data will first want to conduct a pilot to assess participation rates and estimate baseline activity patterns," said Guzman.

"We aim to provide tailored support and guidance to carriers considering using these new data sources in their underwriting programs."

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