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beyond the expected

Mortality trends and longevity expectations

Less than a year after all Covid-19 restrictions were finally lifted, there are reminders that the after-effects are still with us. One such reminder is the latest data on mortality trends.

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Looking back to lockdown

One day in lockdown I sat at the dinner table with my family and filled out sticky notes.

We were fed up with the never-ending news cycle of Covid-19-related anxiety and fed up with the restrictions. On each note we wrote something we were looking forward to doing when lockdown ended. Normal, everyday, wonderful things like going to the cinema, having some friends over, or going out for lunch. We put all the notes in a box, and I now have no idea where the box is.

As we enter 2023, less than a year after all Covid-19 restrictions were finally lifted, I'm now routinely taking everything on those forgotten notes for granted and the pandemic feels like a long time ago. But there is the occasional reminder that the after-effects of Covid-19 are still with us. One such reminder is the latest data on mortality trends.

During the same period of lockdown tedium when we filled out the sticky notes, I attended many virtual meetings discussing what the pandemic would mean for future longevity expectations. Despite the chaos and uncertainty of the time, defined benefit pension schemes needed assumptions about longevity to keep scheme funding on track, and so decisions had to be made about how future life expectancy might be affected by the pandemic.

Slowdown or bounce back?

In 2020 there were a range of possible views about the future of life expectancy.

There were reasons to try and be optimistic about the impact of Covid-19 on life expectancy. Maybe the post-pandemic world would be one in which advances in medical science and better public hygiene (surely we would never stop singing 'Happy Birthday' while washing our hands?) would mean we simply bounce back to the same expectations for longevity as before.

On the other hand, maybe there would be a prolonged after-effect of the pandemic in which the long-term health implications of Covid-19, together with the legacy of missed treatments and economic chaos, would lead to worse health outcomes and a slowdown in longevity improvements.

I always wanted to believe the optimists that longevity would bounce back, but as time went by and the positive effects didn't seem to be emerging, it seemed, unfortunately, more and more likely that there would be some negative future longevity impact of Covid-19.

Defined benefit schemes facing this uncertainty tended to keep their powder dry, at least initially. Given the uncertainty about the future it seemed too early in 2020 to make a call on how the pandemic would affect future mortality, and so many schemes effectively went with the optimists and assumed that things would quickly get back to 'normal'. This is the prudent approach, sensible from a trustee perspective, and avoided reducing liabilities in line with the slowdown view before the evidence supported it.

But we are now three years on from the start of the pandemic and have more evidence to consider. Despite my sticky notes being a distant memory, something unusual has been happening recently in the national mortality data that suggests that, for longevity at least, things are not going back to normal.

What is going on with excess deaths?

2019 was an innocent time, when we thought the biggest problems facing us were Brexit and Donald Trump, and a lockdown sounded a bit like a long evening in a pub. It's also the year often used in mortality statistics as a comparison, given that it was the last normal year before Covid-19 emerged. One way to consider whether longevity is going back to normal is to consider how many deaths we are seeing now compared to 2019.

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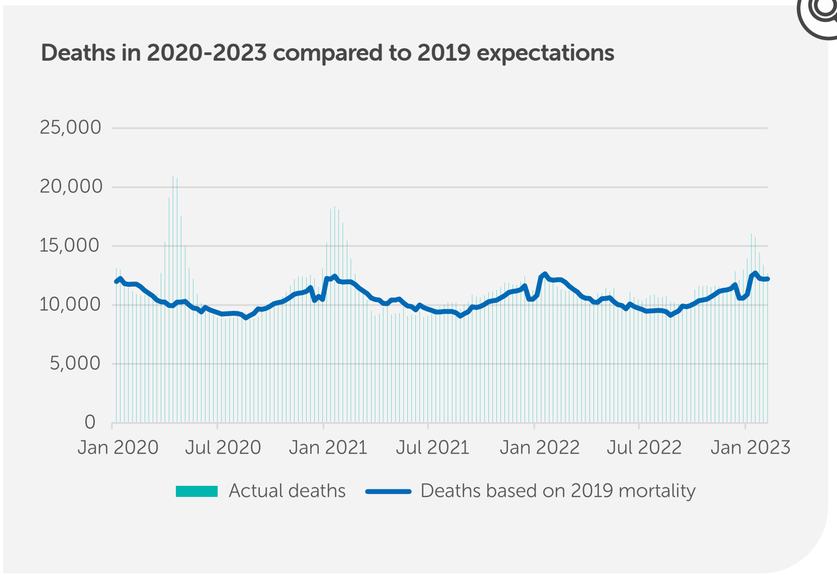
The chart below shows this comparison. Some adjustments need to be made to the data to allow a fair comparison. We need to adjust for changes over time to the size and average age of the population, so the statistics are not distorted by factors unrelated to longevity.

Allowing for such adjustments, the chart shows expected weekly deaths in England & Wales based on 2019 mortality rates (the blue line) compared to actual deaths over 2020, 2021 and 2022 (the green bars).



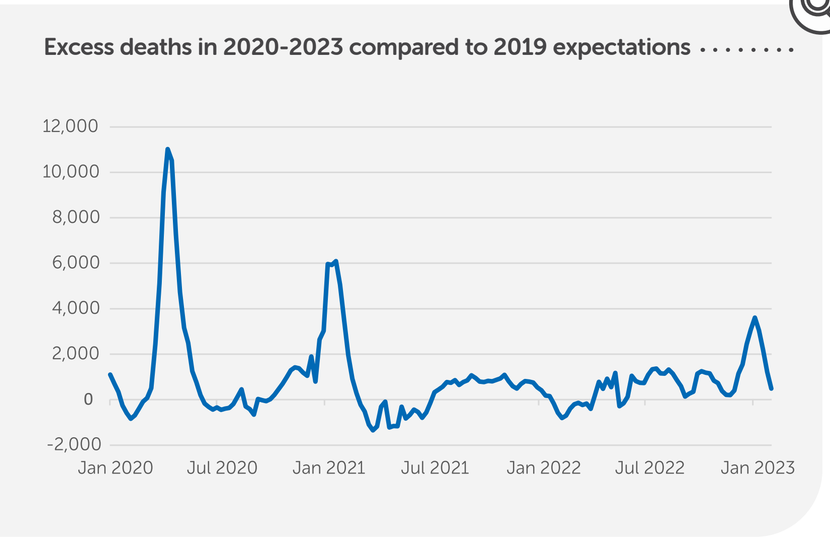
Source: CMI mortality monitors

The two spikes of the pandemic deaths are clear, but it's easier to see the more recent trends if we look at the difference between the green bars and the blue line over time. The gap between the two is shown in the chart opposite. These are the excess deaths seen in the population, compared to the rate of deaths in 2019.

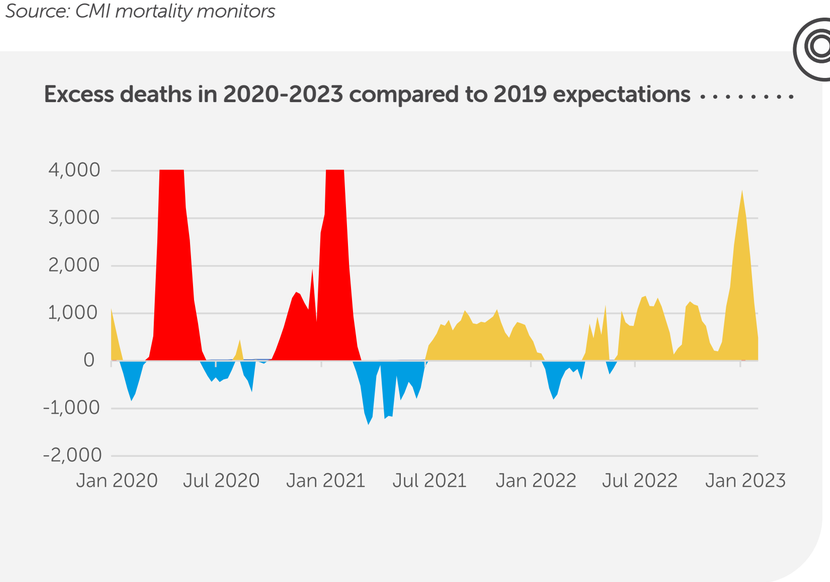
There are a few features in the chart to consider, so let's colour code the sections, and zoom in a little, to draw these out more clearly (see second chart). The two waves of the pandemic are shown in red and are periods of extreme short-term excess deaths. The blue sections show where there were fewer deaths than expected based on mortality in 2019. We see these blue sections show up after each of the two pandemic waves, which is likely because a lot of deaths that might otherwise have happened in these blue sections were 'brought forward' into the red sections by the Covid-19 wave.

The yellow sections represent periods when there were more deaths than expected based on mortality in 2019. Over the last 18 months this yellow section has become more pronounced and consistent. This increase in deaths was particularly unusual to see in the summer months when mortality is normally much more stable and predictable than in the winter.

This yellow section appears to be a significant emerging trend. So, what is behind the recent high levels of excess deaths?



Source: CMI mortality monitors

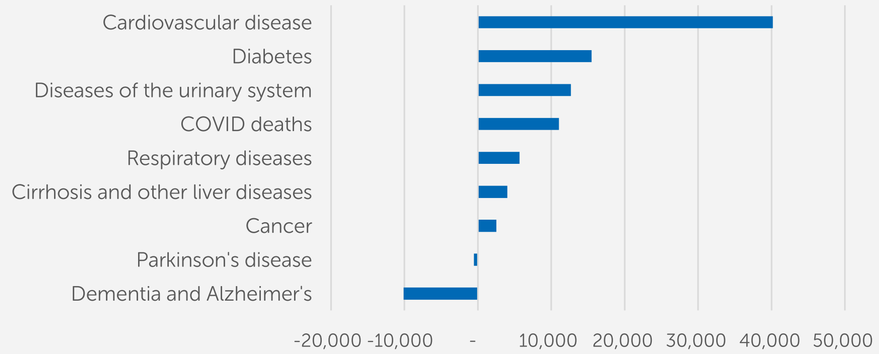


Source: CMI mortality monitors

Looking at recent headlines perhaps tells us some of the story. We have seen the NHS has clearly been under pressure, with long waiting lists, a significant increase in ambulance response times and numerous strikes. It seems likely that these challenges would have had some impact on mortality trends.

Looking at the causes of death underlying the deaths over this period, from May 2021 to now, can provide some more insight. Some of the excess deaths were listed as being caused by Covid-19, but this wasn't the dominating cause, as shown in the chart below.

Excess deaths vs 2019 mortality split cause (May 2022 to Feb 2023)



Source: Office for Health Improvement & Disparities

This shows that there was a significant number of deaths from cardiovascular diseases. What could be driving this? It is difficult to say for sure, but it is speculated that this is a combination of missed diagnoses during the pandemic now coming to bear, combined with a possible higher risk of cardiovascular disease for those who have suffered with Covid-19. Furthermore, the ambulance and A&E delays we have seen would have a more significant effect on urgent health issues, such as heart attacks, than on longer term diseases, such as cancer.

For those who anticipated a slowdown in longevity improvements, this is broadly what they expected to see. The various knock-on effects of the pandemic, both on patients' health and on the health system itself, seem to be leading to higher levels of deaths than before.

CMI consultation

The Continuous Mortality Investigation (CMI), the statistical heroes in the world of actuarial mortality tables, has just released a consultation on the latest version of its model for predicting future mortality, which suggests that it too believes the evidence is now favouring the slowdown view.

The CMI produces a model that is widely used by defined benefit schemes to project future life expectancy trends. The model's philosophy is to look for trends in recent data and assume they will continue in the short term, before gradually fading away over time.

The pandemic posed a problem for the model. The level of deaths in the pandemic was a short-term spike caused by Covid-19, that would not be expected to continue over the coming years. If the data had been fed into the model as normal then the model would have predicted death rates remaining far above 2019 levels for many years to come, which was not considered a sensible prediction.

Faced with this, the CMI decided not to use any data from 2020 in the 'core' version of its model, and instead set up the model to pretend the pandemic had never happened – in effect, to assume the view that life expectancy would quickly bounce back to normal. 2021 saw another big spike in deaths and Covid-19 rumbled on. The CMI decided it was still not a good idea to feed the data in and so the 2021 data was ignored too.

It should be said that the CMI wasn't necessarily saying it believed longevity would bounce back. Users of the CMI's model were encouraged to think for themselves how they expected life expectancy to evolve and the CMI model came with a lever to pull (the 'weight parameter') for those who favoured the slowdown view. But nonetheless, the CMI didn't feel that the mortality data from 2020 or 2021 was suitable to feed into its core model - clear evidence to support the slowdown hadn't yet emerged.

The CMI is now considering what to do with the 2022 mortality data and in its recent consultation it has proposed to build some of this data into the model. This is a significant change from the approach for 2020 and 2021 and recognises that the persistent excess deaths in 2022, without the spikes of 2020 and 2021, may be indicative of a trend – a slowdown in longevity improvements in the aftermath of the pandemic.

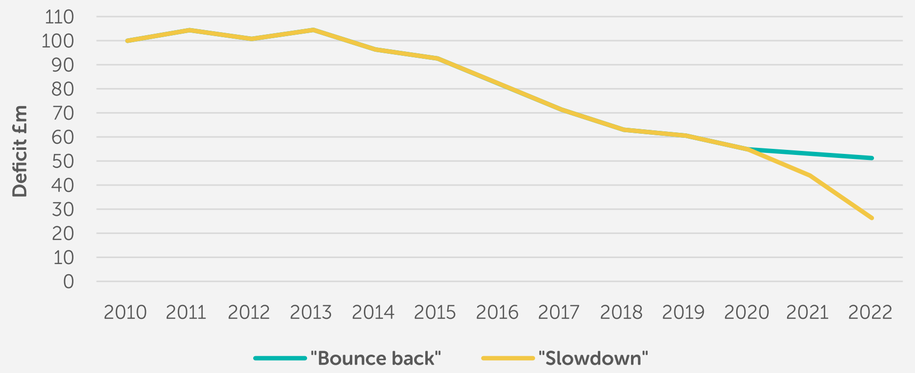
What this means for pension schemes

At this point you might be wondering what this all means in practice for defined benefit pension schemes.

If we consider a typical scheme, and imagine that scheme was unaffected by any other factors such as investment returns that lead to changes in funding level, then what would the longevity trends of the last decade or so have done to the scheme's funding level in isolation?

The changes I would expect to have seen are shown in the chart below. They are fairly modest in percentage terms, but if a scheme has a small deficit in percentage terms and is sensitive to changes in that deficit then these shifts over time would have felt material. To illustrate, the chart shows the expected movements in a £100m deficit for a £1bn scheme that was 90% funded in 2010.

Impact on deficit of longevity assumptions changes
Example scheme (£1bn assets, 90% funded)



Source: Barnett Waddingham indicative calculations

- In the early 2010s, following the first introduction of the CMI's mortality projection model, I would expect the scheme's mortality assumptions to have been fairly stable, leading to little change in the funding level.
- From around 2013 onwards there was an emerging trend that longevity wasn't rising as fast as previously expected and so I would expect longevity assumptions to have changed to reflect this and gradually reduced liabilities.
- From the onset of the pandemic there has been a range of views. I have shown here a representation of both the 'bounce back' and the 'slowdown' outlook.

Finally, what does this recent trend of high excess deaths in 2022 mean? To me, this represents the continuation of an emerging trend since the pandemic and provides more evidence of a slowdown in longevity. For those who have been in the bounce back camp, I think the 2022 data presents some significant evidence to challenge that view and I would expect those schemes using a bounce back mindset for longevity assumptions to reconsider and recognise a reduction in liabilities, moving to the slowdown position.

Insurer pricing: looking under the bonnet

Since the dramatic rise in gilt yields in the wake of last year's mini budget, many pension schemes are closer than ever to being able to secure their liabilities with an insurer. So a common question about the recent mortality trends is whether it is now more affordable to buyout?

The answer is yes, and also no.

If a scheme approaches an insurer for a quotation, the insurer will calculate the price it is prepared to offer based on the risks it faces in funding the scheme benefits, including its view on future mortality. In light of the information on mortality trends from 2022, I would expect an insurer to assume lower future life expectancy now than it did a year ago, with a corresponding reduction in price.

So yes, insurance premiums should, in theory, fall in line with lower longevity expectations. But let's have a glance at the inner workings of the machine. There are various reasons that an insurer might offset the price reduction with other factors. Maybe it perceives a higher level of risk associated with longevity than it did a year ago and so it adds back on a buffer for members living longer; maybe it is concerned about the implications of lowering its price and releasing capital reserves that it might need to recover and so

wants to wait until the picture is clearer; or maybe there are market dynamics completely unrelated to longevity which leads it to offer a higher price than the theory suggests.

A further complication in the background is the reinsurance market. Insurers tend to pass on their longevity risk to a reinsurer, and the pricing of that risk transfer can move quickly due to the competitive nature of the reinsurance market, leading to changes in the insurance premium, either up front or further down the line during the negotiation between the scheme and insurer.

None of the above influences are visible; the price offered by insurers is the outcome of its internal discussions and negotiations and the pension scheme must simply decide whether the price is acceptable, without knowing exactly how it was calculated.

So how should a scheme proceed? The answer is to say to the insurer "we'll get back to you" and then go back to the funding calculations from the previous section. The important step is to come up with a benchmark to compare against the insurance premium. The scheme should consider how much it would cost to run the scheme without an insurer, allowing for the trends in longevity discussed in the previous section.

Then comparing this benchmark against the insurer's price shows how much extra funding is needed to discharge the liabilities.

So, we can't say for sure how insurer pricing will move due to the shifting unseen factors in the background. And in the context of comparing pricing against the scheme's benchmark, even though the insurance premium might reduce for recent longevity trends, the scheme's benchmark will too. From this perspective, no, buying out won't be any easier due to lowering longevity expectations.

Conclusion

Recent trends in mortality lead me to the conclusion that life expectancy is likely to now be worse than before the pandemic. The factors that have caused high levels of deaths in the last 18 months don't look likely to disappear anytime soon. This is likely to lead to an improvement in defined benefit scheme funding positions, as this feeds through into the assumptions used by schemes.

This is disappointing news for the optimists, and not the sort of news I would have wished for if I'd have written my hopes for life expectancy outcomes on a sticky note back in lockdown. But we should remember the positives. It is worth reflecting that all pension schemes assume that at some stage life expectancy will revert to a long-term steady trend of year-on-year improvements. Pandemic aside, life expectancy has been improving annually for many decades, a positive news story that rarely makes the headlines.

While the current trends are for worsening health outcomes, the further we look ahead the more uncertain the future gets, and time heals all wounds. My assumptions for longevity will continue to include an allowance for year-on-year improvements in the long term and I remain an optimist for the future.

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Please contact your Barnett Waddingham consultant if you would like to discuss any of the above topics in more detail. Alternatively get in touch via the following:

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