

# Covid-19: an uncertain future for mortality

The Covid-19 pandemic has had a dramatic impact on mortality rates. The effects of this will flow through into pension scheme funding levels as member experience is taken into account, but trustees will also need to form a view on how the pandemic will affect future mortality rates and improvements.

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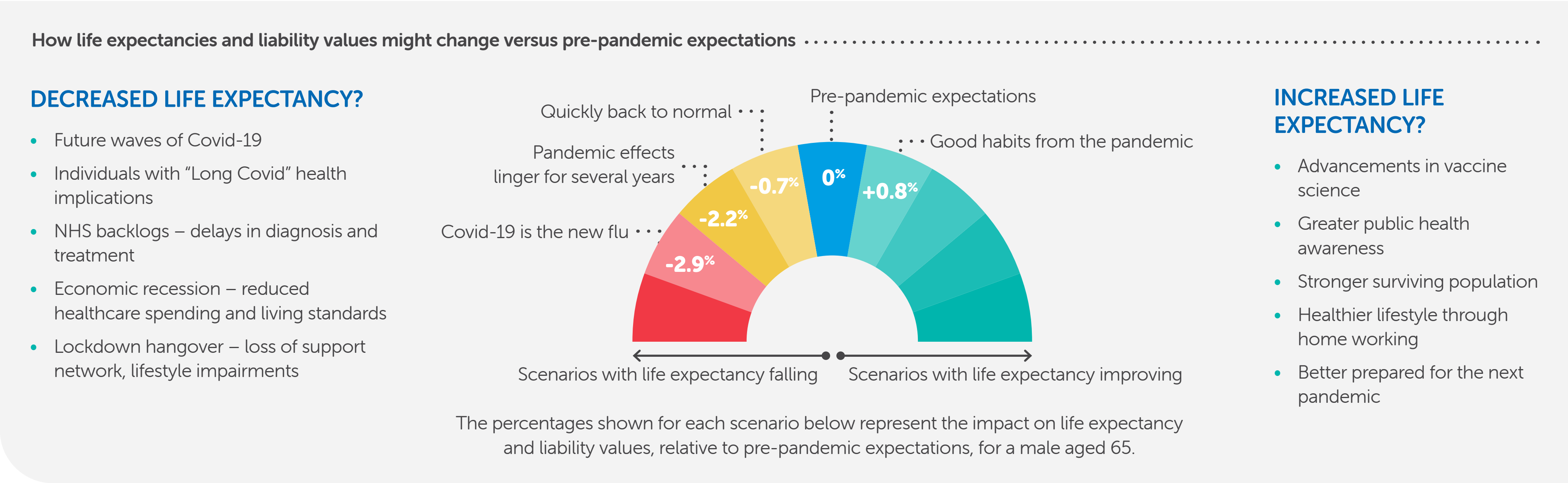




# Impact of Covid-19 on future mortality

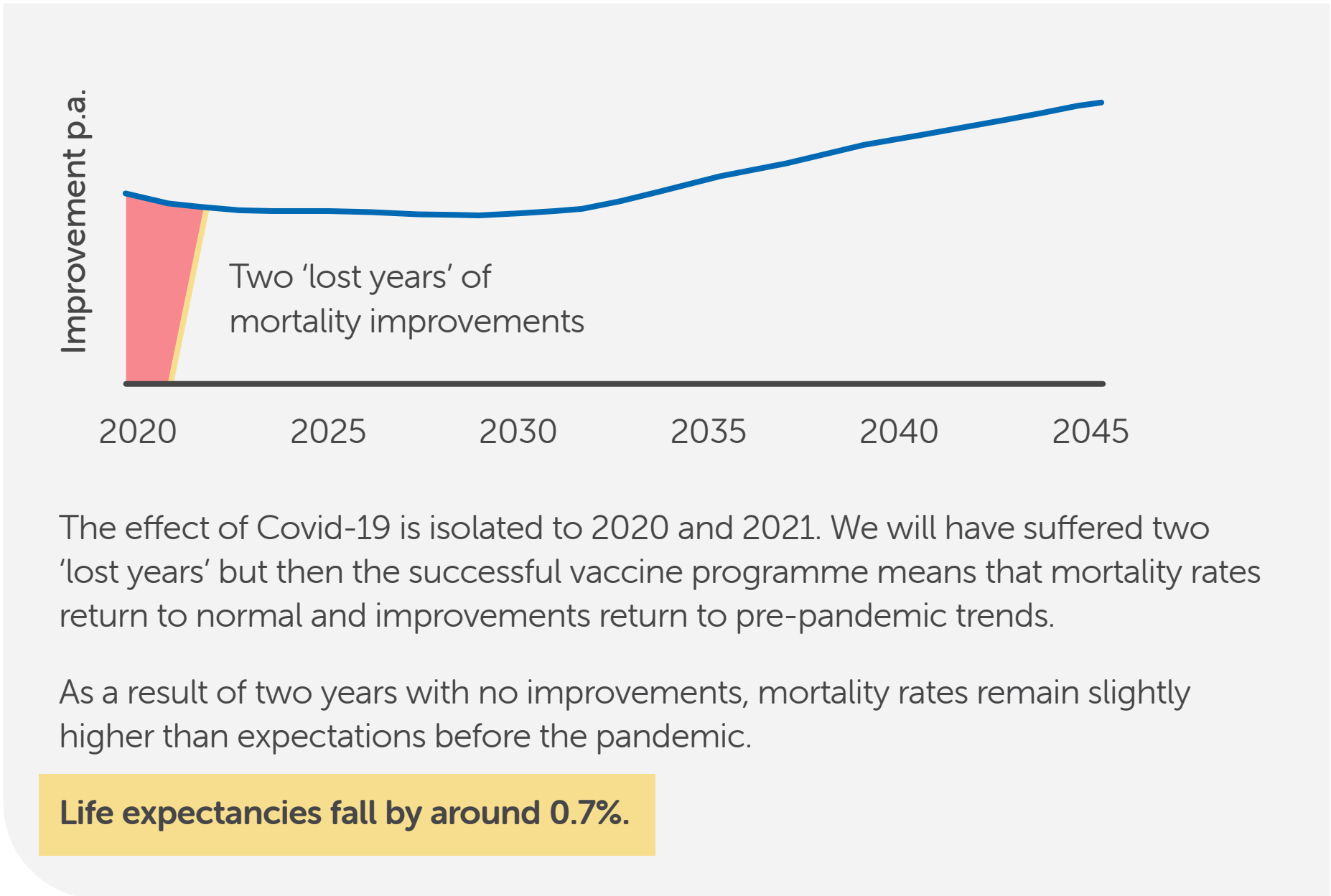
The term ‘mortality improvement’ refers to the extent by which the mortality rates of a given population decrease from one year to the next – positive improvements give increases in life expectancy. Even before the pandemic struck there was a great deal of uncertainty surrounding the direction of future mortality improvements. What we’ve observed over the past two years has only exacerbated that.

The pandemic has undoubtedly changed the landscape for future mortality - listed below are a number of medical, economic and social factors which will determine future mortality improvements. In order to help steer through the uncertainty, we have carried out analysis of plausible (but simplified) future scenarios to determine what each might mean for future mortality improvements and life expectancies. The results of the scenarios are summarised below and discussed further overleaf.

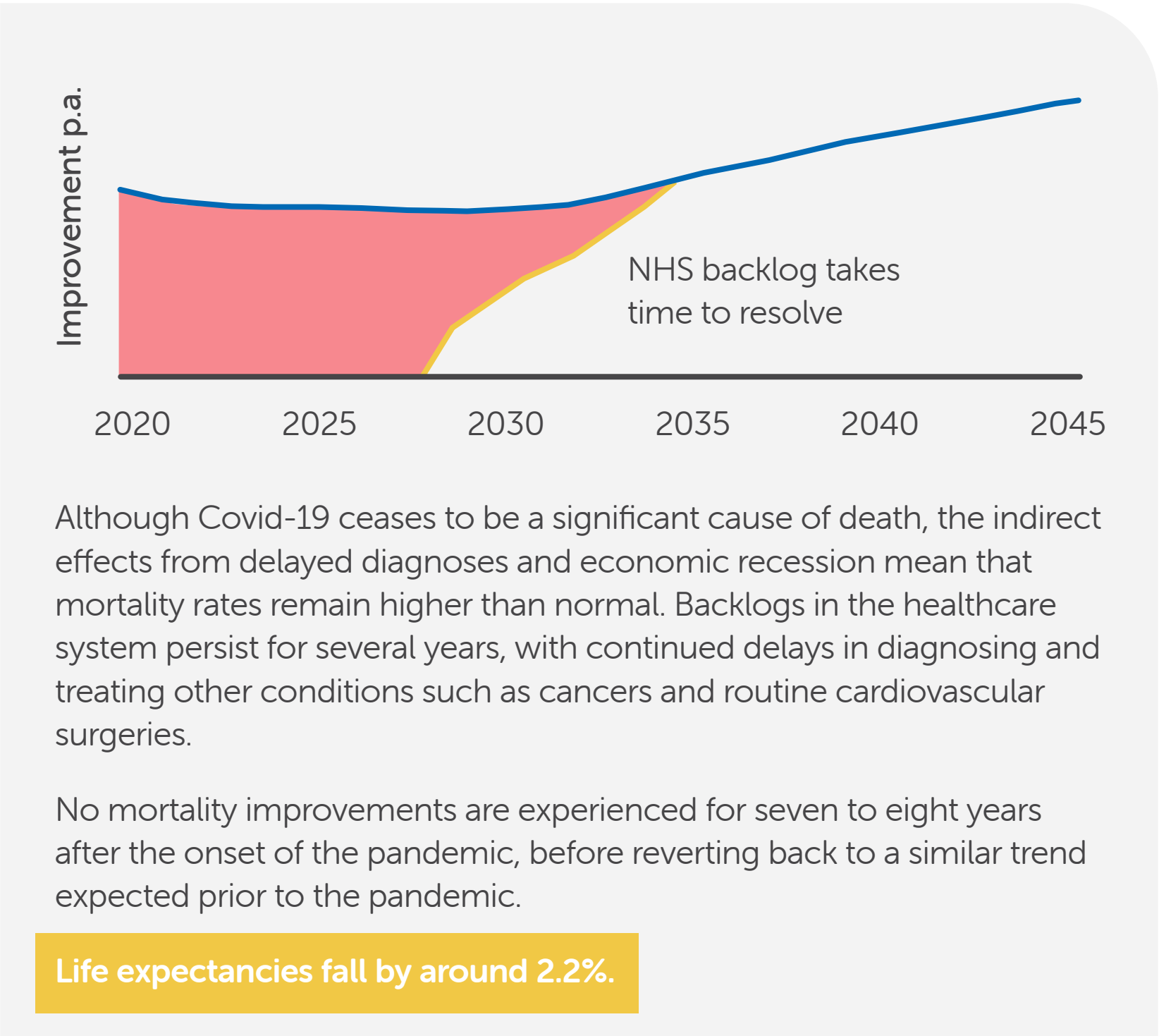


# Scenario analysis

## Scenario 1 – Quickly back to normal



## Scenario 2 – Pandemic effects linger for several years



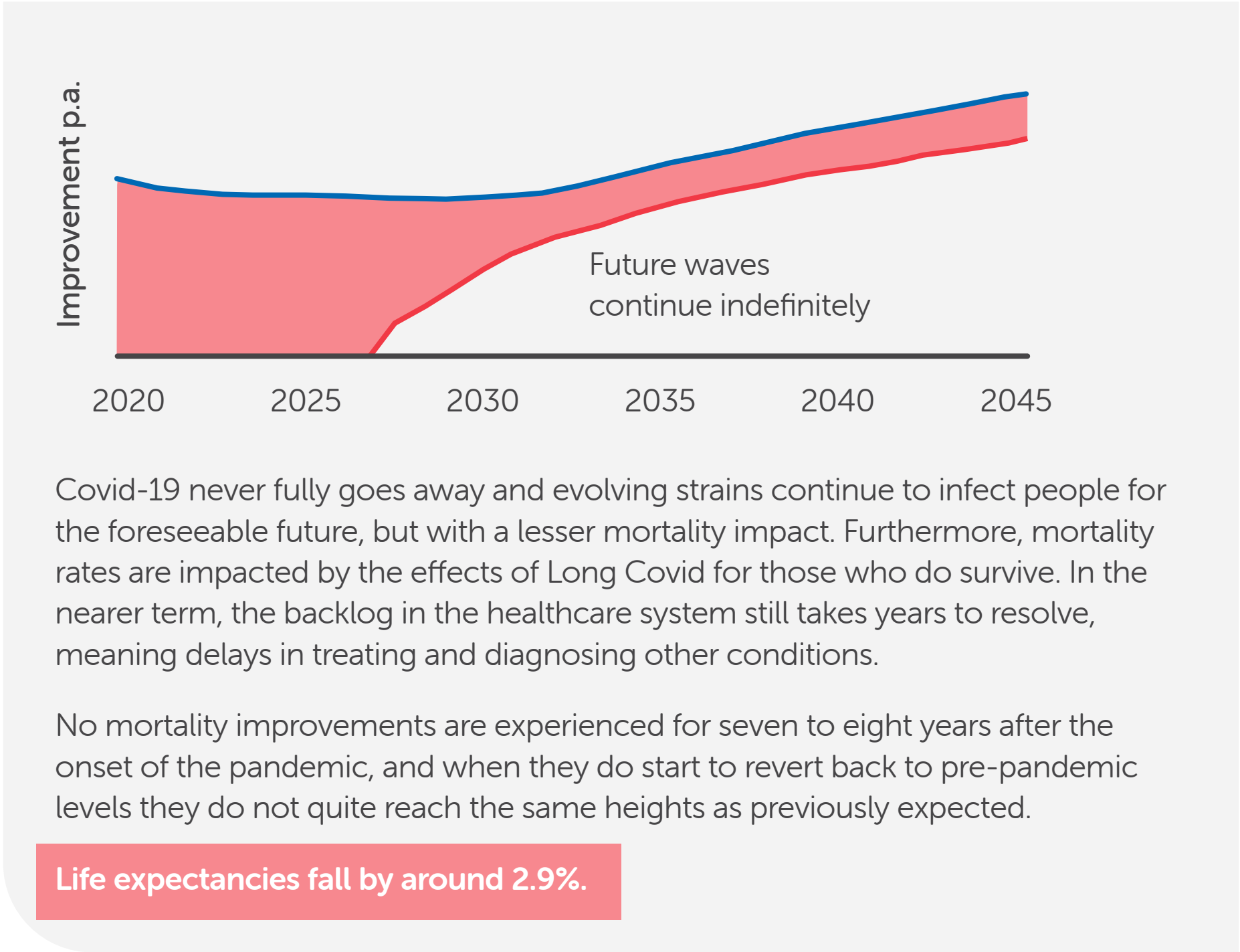
### KEY:

- Pre-pandemic expectations for improvements in mortality over time.  
The line initially follows mortality improvement trends prior to the pandemic, before converging to a long-term expectation of future improvements (assumed to be 1.5% p.a. in these illustrations).

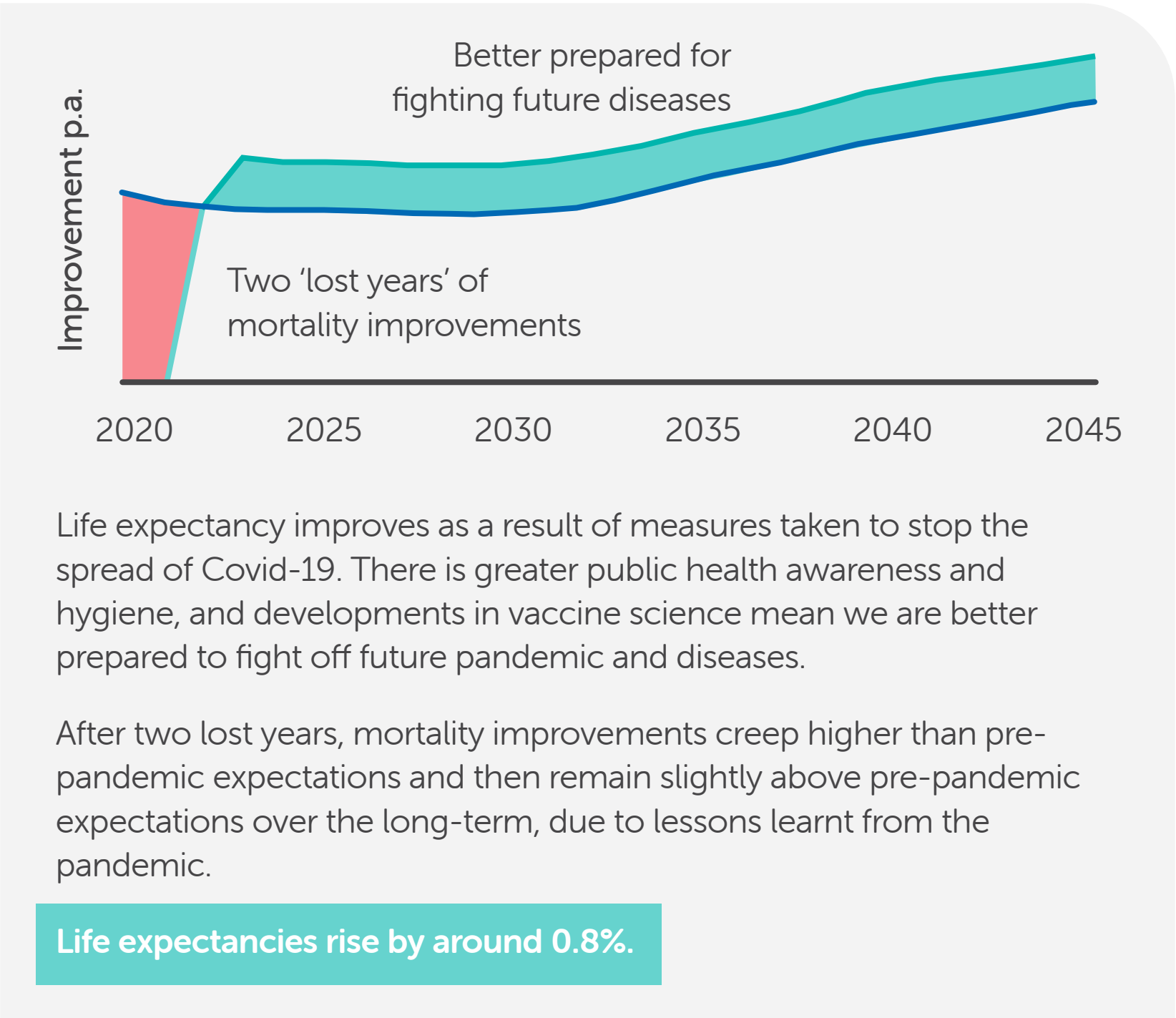
- The black line represents the 2020 Covid-19 baseline. This shows no further improvements in mortality, in line with experience in 2020.

- Difference in improvement rates versus illustrative pre-pandemic expectations for each scenario. The larger the shading, the greater the impact on future life expectancies.  
Red shading indicates how overall mortality has increased relative to pre-pandemic expectations; green shading (as seen in Scenario 4) indicates how relative mortality has decreased.

### Scenario 3 – Covid-19 is the new flu



### Scenario 4 – Good habits from the pandemic



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# Other sources of uncertainty

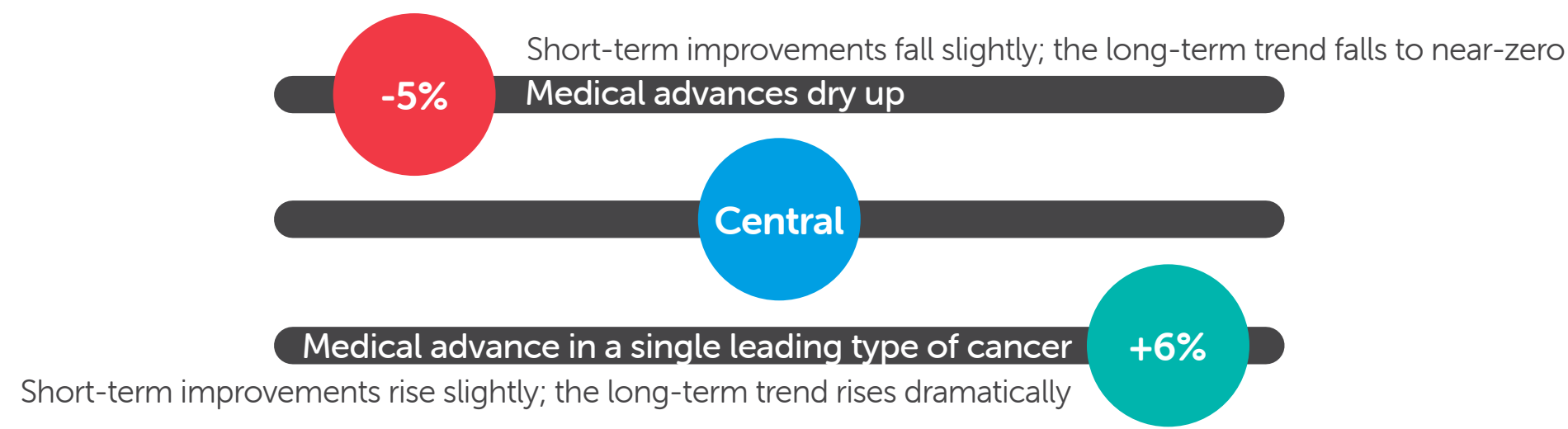
Even in a world without Covid-19, there was plenty of uncertainty regarding future mortality improvements, particularly surrounding breakthroughs in medical treatments (or lack thereof). These sources of uncertainty still remain now and provide a context in which to consider the scenarios above.

We have considered plausible scenarios for medical advances in the future, which might serve as reasonable bounds of uncertainty in future mortality improvements. The impacts on life expectancies are shown below and are considerably higher than those expected under the Covid-related scenarios above.

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In our view, the degree of uncertainty arising from Covid-19 lies well within the range of uncertainty which was present before the pandemic.

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## Summary

There are a number of factors which will drive the future outcome for mortality improvements following the change in landscape over the past two years. Trustees will need to make a decision on both the directional influence that Covid-19 will have on future improvements and the magnitude of any impact.

If trustees do think that the impact of the Covid-19 pandemic will be a reduction in life expectancies, they will still need to consider how much prudence to incorporate in their funding assumptions. The Pensions Regulator's 2021 Funding Statement suggested that trustees adopting weaker mortality assumptions should have a contingency plan in case they do not materialise in the future. Whilst it might therefore be tempting to ignore the potential Covid-19 impact on the grounds of prudence, there may be consequences from being too prudent; for example, where funding affordability drives the level of risk in the investment strategy. Consideration may also need to be given to transfer value bases and actuarial factors to ensure that these appropriately reflect the trustees' best-estimate view on future mortality.



UPDATE FOLLOWING 2022

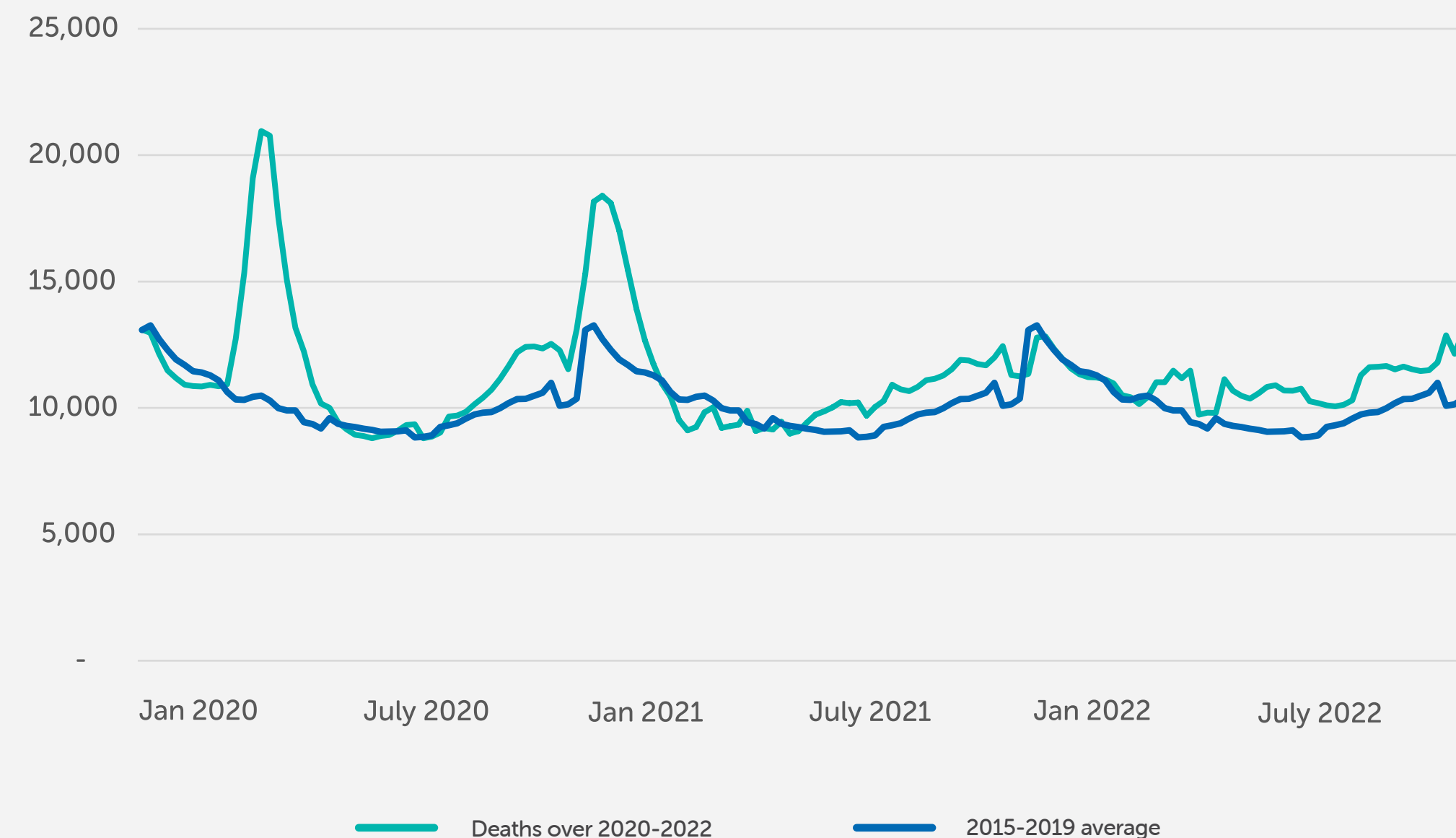
## Mortality over 2022: a clearer direction?

The initial briefing note set out four possible scenarios for how life expectancies may be impacted by the Covid-19 pandemic, relative to pre-pandemic expectations. With 2022 now behind us, we can consider how the experience through the year compared with those scenarios presented.

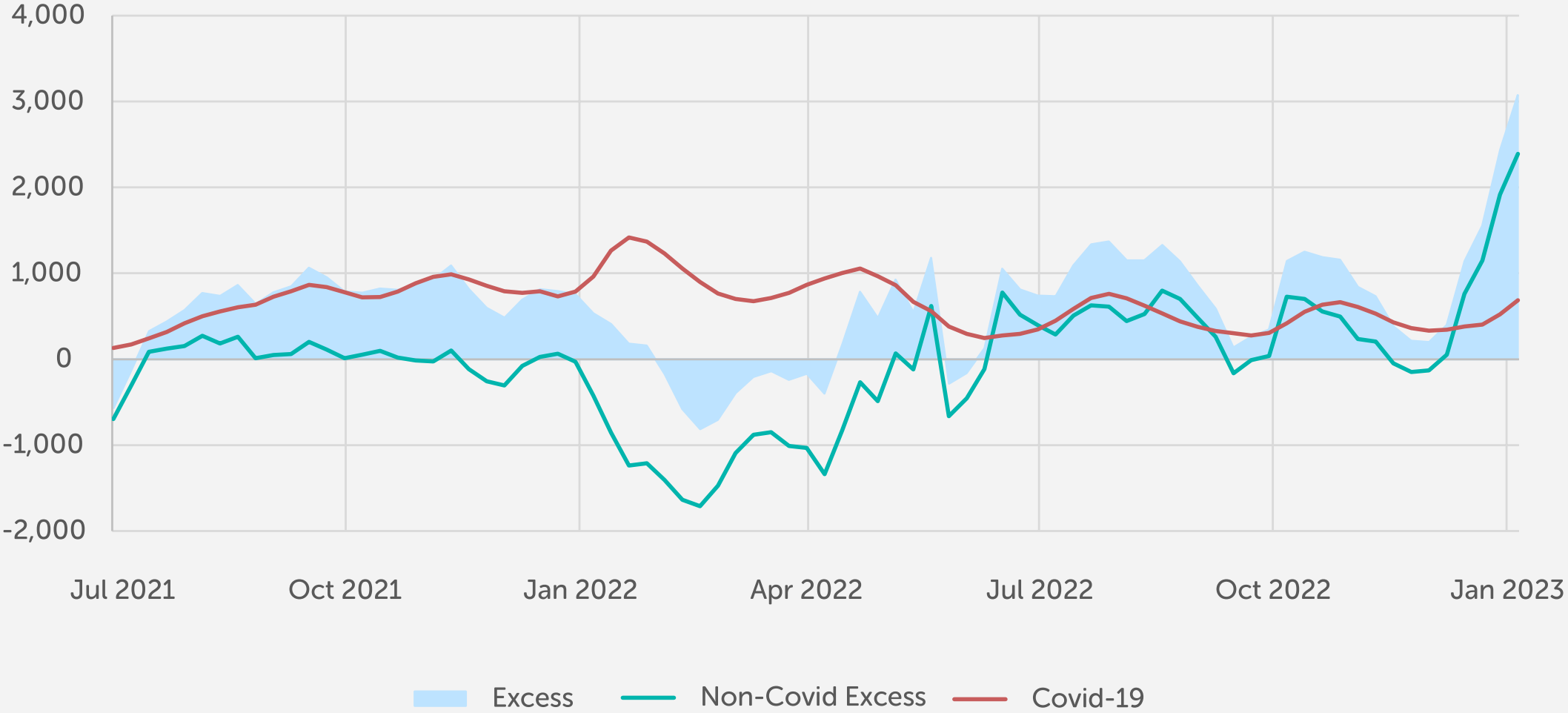
Mortality over 2022 was 4.5% higher than pre-pandemic levels, demonstrating that the effects of the pandemic were still lingering.

During 2020 and 2021 there were two major 'waves' of deaths from Covid-19, with mortality rates peaking dramatically in spring 2020 and winter 2020/21. However, in 2022 there was no clearly defined peak as such, with mortality rates broadly in line with pre-pandemic levels in early months but significantly higher thereafter.

Weekly registered deaths (3-week average) 2020-2022 .....



Excess deaths (smoothed): split of Covid and non-Covid deaths .....



While mortality rates over 2022 were worse than pre-pandemic rates, this was not necessarily driven by direct Covid-related deaths as illustrated in the chart to the left. Deaths directly related to Covid-19 continued through the year, at around 1,000 deaths per week during the first third of the year (when overall deaths were at their lowest) and then dropping to around 300-700 per week from May through to the end of the year (when overall deaths were at their highest).

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It was therefore the 'non-Covid excess' deaths during the second half of 2022 that drove the increased overall mortality rate.

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Key contributors to this were deaths from a range of heart and circulatory diseases, cirrhosis, and diabetes. While these are common causes of death in the UK in any year, the heightened rates are likely a sign of the NHS backlog built up during the pandemic years. This suggests that the pandemic effects may linger for several years yet (as per [Scenario 2](#) illustrated on page three), but how this will play out in the future is still uncertain.



## CMI 2022 model

Many schemes use the Continuous Mortality Investigation's (CMI) model to calculate future life expectancies. The 2020 and 2021 versions of the default CMI model made no allowance for the possible effects of the pandemic, assuming that future mortality would be like pre-pandemic expectations. However, considering the experience over 2022, **the CMI has confirmed that its 2022 version of the model will assume that life expectancies for typical pensioners will be reduced by around 2-3% compared to the pre-pandemic version of the model.** As with the 2020 and 2021 versions, users can amend the parameters to assume a different effect if desired. The 2022 model will be released in summer 2023, and further considerations around application of the model can be found in this [blog written by Will Rice](#).

## The Pension Regulator's (TPR's) updated guidance

Since we published our initial briefing note, TPR has softened its guidance on setting mortality assumptions. In the 2023 Annual Funding Statement, TPR acknowledges that "mortality in 2022 onwards may be more indicative of future mortality than previous years, and if so, this may suggest lower future life expectancies." However, TPR also notes that there are "differing views" and the new trends need to be interpreted with caution.

## Summary

Based on how mortality rates have developed over the past few years, we expect that many trustees will be considering an update to their mortality assumptions – particularly where current assumptions make no allowance for the effect of the pandemic. Adopting the core CMI\_2022 model for future mortality improvements is expected to lead to reduction in life expectancies of the order of 2-3%, broadly in line with the impact we estimated in Scenario 2 where the effect of the pandemic lingers for several years.







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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