



Making sense of COVID-19 Mortality impact on pension schemes

Statistics on the number of COVID-19 deaths have been subject to intense scrutiny and debate throughout the pandemic. In this paper we consider the implications for defined benefit pension schemes of the recent increased mortality rates and set out some practical steps to understand the associated uncertainty.

COVID-19 mortality

Over the last few months, the UK has sadly experienced mortality rates not seen in recent times. As shown in Figure 1, the COVID-19 pandemic has seen far higher numbers of deaths than would normally be expected over the March to June period.

For defined benefit pension schemes, it is important to have an understanding of members' expected longevity. This is because this has a direct effect on the total cost of benefit provision and the terms available on member options (such as transfer values or early retirement factors). Actuarial valuations require assumptions about future mortality rates to assess the value of the liabilities and therefore impact on scheme funding.

As Figure 2 illustrates, the number of years the average person in the UK is projected to live has increased significantly over time. While the rates of mortality improvement have slowed at many ages over the last decade, the overall picture is still one of increased life expectancies.

What impact might the COVID-19 pandemic have on future longevity of pension scheme members? Figure 3 shows how mortality from COVID-19 increases with age and that there are typically higher mortality rates for men compared to women. This suggests that the main immediate impact for pension schemes will be on pensioner liabilities; we would expect there to be a limited increase in the number of deaths for those still in the workforce.

Figure 1: All-cause mortality, 5 year average with spike for COVID deaths (ONS)

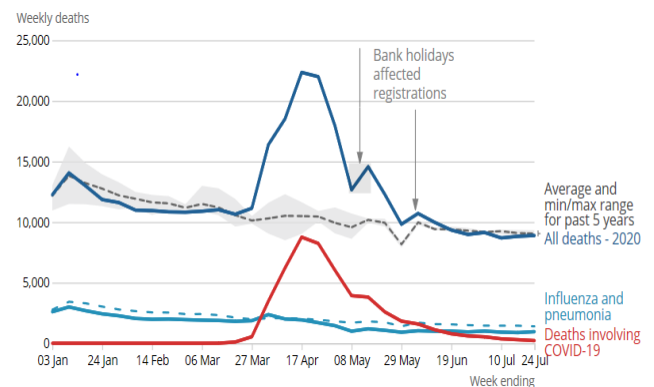


Figure 2: Life expectancy in years at age 65, UK (GAD chart from ONS data – future improvements to mortality in line with ONS 2018-based principal population projections)

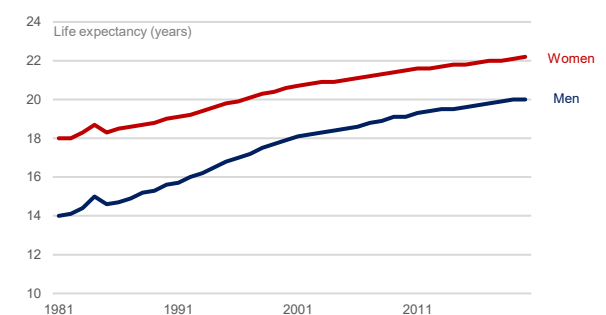
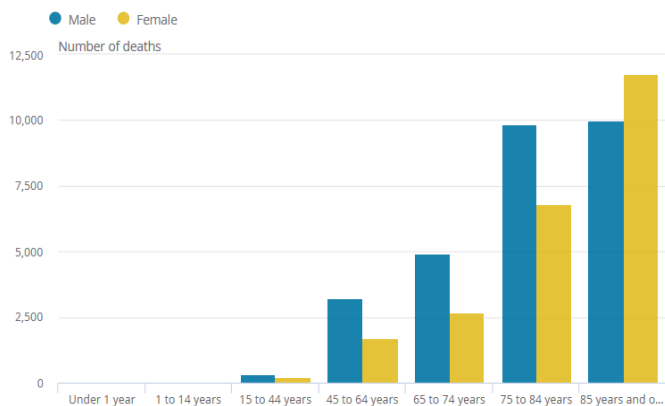




Figure 3: COVID-19 deaths by age / sex (ONS)

Number of deaths involving COVID-19 by sex and age group, England and Wales, registered between 28 December 2019 and 24 July 2020



Initial analysis of COVID-19 deaths has indicated that various characteristics - including age, gender, ethnicity, levels of deprivation and location - may have a significant influence on mortality rates. Research by the ONS and other statistical bodies remains ongoing. Further analysis of the emerging data will be required to better understand the implications for future mortality rates. If you would like to learn more, the [Office for National Statistics' Coronavirus \(COVID-19\) Round-up](#) or the [Continuous Mortality Investigation's Mortality Monitor](#) may be of interest.

COVID-19 experience - the outlook for mortality rates

It is highly uncertain how mortality rates will be affected over the remainder of 2020 and beyond. The prevalence of the virus, the effectiveness of measures taken to contain it, and the development of treatment options including potential vaccines will all have an impact. A recent report by the [Academy of Medical Sciences, Preparing for a challenging winter 2020-21](#) highlights this uncertainty, while setting out what a 'reasonable worst-case scenario' might look like.

The factors affecting mortality rates in this pandemic are complex, correlated and intertwined with social responses and human behaviour. Data remains key to improving our understanding. While improvements in data quality are to be welcomed, a prudent approach may be required to avoid the pitfalls of comparing inconsistent data series. For example, do more positive test results mean there are more cases occurring, or just more tests taking place?

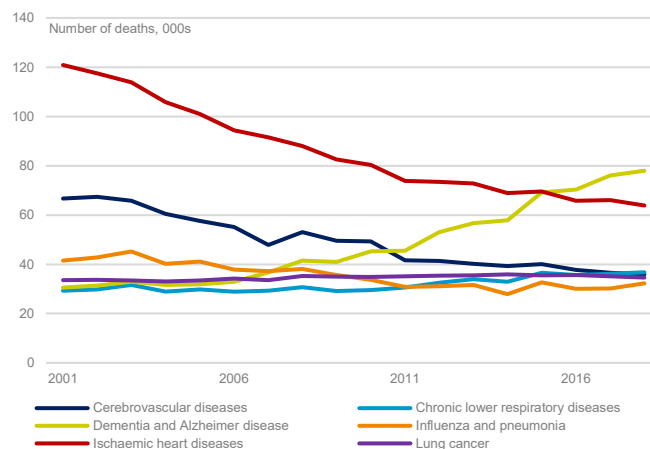
Focusing on the long-term

Consideration of mortality rates requires long-term analysis and in the midst of the pandemic, it is important not to overlook this. In the UK, seasonal flu provides well-established fluctuations in mortality rates, but this is not typically an area of concern for pension schemes. Mortality experience analysis is typically carried out over the three-year valuation cycle, or longer – smoothing out the effects of short-term variations.

Sadly, this year the impact of the COVID-19 pandemic upon UK mortality rates is stark.

However, in the long-term will COVID-19 become a new source of relatively modest fluctuation in the data, or does it mark a fundamental shift in mortality experience? As shown in Figure 4, the proportion of deaths attributed to a specific cause changes over time. Medical advances and lifestyle choices, such as a reduction in the prevalence of smoking, have an impact on the cause of death over the longer term.

Figure 4: Leading causes of death 2001-18, UK (GAD chart from ONS data)





Will those people adopting healthier lifestyles during lockdown maintain these, with a positive impact on mortality and morbidity rates?



Whereas for others, will decreased levels of physical activity, increased substance abuse or the psychological impact of isolation and loneliness lead to an increase in mortality rates?



What are the consequences of compromised healthcare experienced by non-COVID patients as a result of the pandemic? Diagnosis may be delayed and treatment programmes adapted.



What does the future hold for the COVID-19 virus? Will there be a successful vaccination programme or will the virus continue to circulate – becoming recognised as an ongoing morbidity risk, like seasonal flu or cancer?



To what extent is COVID-19 'bringing forward' deaths that would otherwise have been expected to occur within the next year or two? Could 2021 death rates be lower than the long-term average?



Will the economic impact caused by COVID-19 compromise the future level of healthcare available? Will there be long-term impacts on individual incomes which affect lifestyle choices?

There are many issues to reflect on, when considering what future mortality rates might look like. We've highlighted some in the boxes to the left. Evidence is emerging, but it will be some time before considered and definitive conclusions can be drawn.

Mortality impact on pension schemes

The COVID-19 pandemic has highlighted the importance of understanding and communicating uncertainty. Faced with so much uncertainty, how can pension schemes set assumptions for future mortality experience? Based on our experience, we would recommend you consider the following 3 areas:

How much weight to give pandemic mortality experience
 A common approach to setting future mortality assumptions is to do so with reference to the actual scheme mortality experienced over the past few years. If COVID-19 leads to a short-term spike in mortality, then such a process could lead to future life expectancy being underestimated. To avoid this, schemes may like to consider placing less weight on experience during the pandemic, especially when a prudent approach is required.

Adopt a case-by-case approach
 Whilst this briefing sets out some common themes, ultimately each scheme's experience will be unique. Factors such as the scheme's maturity and its demographic profile will affect how mortality rates are impacted by COVID-19. In addition, different assumptions may be appropriate for different purposes. For example, the mortality assumptions used for an actuarial valuation may not be appropriate for point-in-time decisions around investment opportunities to insure against risk, or for setting member option terms.

Consider a range of outcomes
 Sensitivity analysis is used to illustrate how the results might change if the underlying assumptions were adjusted. For example, we might consider the funding impact if all members were to live one year longer, or if asset returns improved by 1% each year. This approach can help to equip stakeholders with a better understanding of the range of likely outcomes. Pension schemes may wish to commission a broader range of sensitivity testing to help illustrate the possible impact of the COVID-19 pandemic on mortality rates.

If you would like to discuss the mortality impact of COVID-19 on your pension scheme, please contact your usual GAD adviser, or more generally at enquiries@gad.gov.uk.