

Institute and Faculty of Actuaries, **Regulatory Board**

Subject	Post-covid mortality assumptions and pandemic modelling
Meeting date	14 February 2024
Previous Steer/Approval	None
Related horizon scan code	HS06 – Post-covid19 mortality assumptions and pandemic modelling
International issues considered?	Relevant
Author	Alan Marshall, Review Actuary
Reviewer	David Gordon, Senior Review Actuary
Purpose	Steer

A: Executive summary

1. This paper is to provide the Board with background information on a horizon scan entry (HS06) relating to mortality assumptions and pandemic modelling post-Covid 19.
2. Actuaries will be very active in this type of work and the horizon scan highlights the risk that inappropriate allowance is made for experience of the covid-19 pandemic in current or future modelling of mortality.
3. The Continuous Mortality Investigation (CMI), supported by the Institute and Faculty of Actuaries (IFoA), has a long history of providing authoritative and independent mortality and sickness rate tables for UK life insurers and pension funds. Recent publications have considered the impact of the pandemic and provided guidance on how updated tables reflect this.
4. Additionally, there has been extensive working party activity both during the main phase of the pandemic, and beyond, where actuaries have considered more broadly the impacts of the pandemic on a range of aspects affecting both actuarial, and wider fields work.

B: Introduction and Background

5. Mortality investigations and assumptions are one of the core components of actuarial science, and actuaries are considered as experts in this field.
6. Mortality assumptions are required in many areas of actuarial work, key examples including pension scheme valuation, insurance firm reserving, pricing of life insurance and annuity products (including bulk annuities) and assessing appropriate tail scenarios for use in stress testing and capital setting.
7. During the pandemic, the Mortality Projections Committee of the CMI published weekly updates on mortality in England & Wales, to supplement its usual quarterly updates. The CMI also set up the COVID-19 Working Party in July 2020 to investigate the implications of the pandemic on the work of the CMI and to produce consistent methodology that could be adopted by the various CMI investigation committees.

8. CMI Working Paper 139 - Considerations relating to COVID-19 for mortality and morbidity assumptions - was an early public output from the CMI, aiming to drive consistency of approach and support actuaries in this area.
9. In the early part of the pandemic the IFoA Covid-19 Action Taskforce (ICAT) emerged, a large-scale volunteer group spanning the full range of domains where actuaries are active. This group produced a range of outputs including blogs, papers, and webinars.
10. Another very active group was the Covid-19 Actuaries Response Group. This group formed early in the pandemic with a view of carrying out nimble and regular work to help inform both actuaries and the wider public interest on a range of insights on the impact of Covid-19.

C: Considerations for actuaries

11. Although actuaries are used to applying judgement, and making appropriate adjustments, in assessing mortality for a given output, the Covid-19 pandemic has provided the biggest challenge to this in recent times.
12. There are a number of aspects where actuaries may have to consider the impacts of the pandemic on assumptions and modelling, including:
 - Best-estimate mortality assumptions used in valuation, reserving and pricing work
 - Tail assumptions (for example 1-in-20, or 1-in-200 years) required for scenario and stress testing, or solvency capital requirements
 - Operational risk assessments where future pandemics will have material 2nd-order impacts
13. Actuaries are likely to be viewed as experts in these areas and it is critical that appropriate allowance is made when providing advice.
14. As already trailed, in the UK the CMI has produced tables, models and guidance which can be utilised by actuaries at organisations subscribed to the CMI (there is some material which has been made open source in the interest of sharing information).
15. A consideration for mortality or morbidity data for years impacted by pandemics is likely to be how to use that data in the setting or base mortality and morbidity assumptions. There are different ways to proceed:
 - Don't use the data at all
 - Use the data with some form of adjustment applied
 - Use the data without adjustment

It is likely that the approach adopted will depend on the purpose for which assumptions will be used, and the extent to which there is reduced uncertainty on the longer-term impact of the pandemic.

16. In the course of the AMS team's recent Corporate Pensions advice thematic review, we saw some examples of educational material explaining the impact of Covid on mortality rates, and some advice on what, if any, allowance to make for pandemic experience in valuation assumptions. The material we saw was typically dated in the period 2020-22 and approaches

tended to take a prudent view given uncertainties as to how long-term mortality might be impacted. The predominant view at that time was to ignore mortality data from 2020 onwards.

17. It is likely that benchmarking information will become increasingly available which may help actuaries in making judgements. It is important to balance the use of benchmarking with appropriate analysis of the specific risk pertaining to any piece of actuarial work.

D: Conclusions

18. The Board is asked to consider whether any of the points raised during the course of the discussion indicate the need for IFoA regulatory activity to address any perceived public interest risks at this stage.
19. Some potential steps the Board might consider include:
 - a. Would further deep-dive activity on this topic be helpful?
 - b. Would non-mandatory guidance be appropriate and helpful for members?
 - c. Are there any specific issues identified that the Board considers should be communicated to Members by way of a Risk Alert?
 - d. Is there career-long learning material that should be developed to provide support to Members working in this area?
 - e. Would thematic review activity be helpful to gather further information on the work of actuaries in this space?
20. As the Horizon Scanning HS06 assesses this risk to be 'Low', the Executive recommends the Board notes this paper and takes no further action at present. If the Board wishes to consider this further, the Executive suggests (a) above, to carry out further deep-dive activity, would be an appropriate first step before considering initiating any of the other potential actions.