

PRIVATE AND CONFIDENTIAL

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By e-mail only

Dear Ms Pryor

**Board for Actuarial Standards
Actuarial Mortality Assumptions
Response to Discussion Paper**

Barnett Waddingham LLP is a UK based firm of actuaries and consultants. We provide a range of actuarial and consultancy services to trustees and sponsoring employers of occupational pension schemes, life insurance companies and friendly societies. Much of our work involves the use of mortality assumptions. We have therefore considered your discussion paper with considerable interest.

Our response commences with a number of general comments that we consider of particular importance; these are followed by responses to the specific questions posed in the discussion paper. These comments represent a collection of views of actuaries from both the life and pensions areas at Barnett Waddingham LLP but do not necessarily represent the views of the whole firm.

General Comments

1. We are not convinced that the case has been made for a BAS standard specifically covering mortality assumptions. Instead, we consider the treatment of mortality assumptions could be covered in the generic standards on data, modelling and (especially) reporting.

In particular uncertainty over base assumptions and future trends is just as important for Critical Illness insurance, for example, as for mortality. We believe that such assumptions need to be treated consistently by the BAS and similar reporting requirements applied.

2. We believe that the uncertainty surrounding future mortality may have been over-emphasised in recent years. Whilst future developments are highly uncertain, we believe that there is often greater uncertainty surrounding the assumed base mortality. In addition, and especially for smaller pension schemes (in terms of numbers of lives),

the random risks inherent in mortality are likely to be of far greater significance than uncertainty in the assumptions relating to either base mortality or future changes.

3. It is important that the BAS liaises with the Pensions Regulator and Financial Services Authority (and other regulators as appropriate) to ensure messages and requirements issued by the various bodies are not inconsistent.
4. We do not believe it would be appropriate for the BAS to prescribe limits on mortality assumptions because such limits would need to be extremely wide-ranging in order to cover all potential situations. In general we favour reporting standards, along the lines indicated in your recent Exposure Draft, "Reporting Actuarial Information" (although we may submit comments on that paper separately).

We also agree that for the uncertainty to be communicated effectively, discussion of the issues and their significance is needed alongside the disclosure of the assumptions and suggest the understanding of uncertainty might be impaired by the prescription of limits.

We believe there is a greater need for educating users (e.g. pension scheme trustees) than for issuing very prescriptive standards; however we recognise that education is unlikely to fall within the remit of the BAS.

5. We are in broad agreement with the majority of the points made in the discussion paper and have not commented in detail on the precise wording of the paragraphs.

Responses to specific questions

1 Do respondents have any views on the significance of the adverse effects that the over- or underestimation of future mortality may have on pension scheme members, scheme sponsors, life insurance policyholders and life insurance companies, as set out in section 2?

The effects referred to in paragraphs 2.7 to 2.27 are potentially significant, particularly in the field of life insurance where risk is assumed in exchange for a premium. However, in the case of life offices, shareholder capital, prudential margins and industry compensation schemes act to protect the ultimate beneficiaries from mis-estimation of assumptions whilst in the case of pension scheme funding, over- and under-estimation of assumptions can to an extent be rectified over time by changing contribution rates. The most significant impacts arise when assumptions relating to transactions prove to be incorrect.

Much of the recent focus on mortality assumptions appears to have been concerned with avoiding under-stating future improvements in mortality in the context of pension schemes and annuity insurance business but the potential impact on pension provision (eg closing schemes or reducing benefits) of over-stating longevity is a very important issue for society as a whole.

Mortality assumptions are also relevant to the pricing of assurances and there appears to be little discussion or guidance on the treatment of future improvements for such business. We

believe that any BAS standards in respect of mortality assumptions should be clear that they also apply to assurance business.

Incidentally we note that paragraphs 2.11 and 2.17 equate overestimating *mortality* (rates) with assuming that people live longer. We suggest that overestimating *longevity* is equivalent to assuming people live longer, whereas overestimating mortality rates gives a lower estimate of life expectancy.

2 The BAS has discussed some of the issues surrounding mortality assumptions in section 3. In that context:

- a) Do respondents have views on appropriate methods of communicating the extent and impact of the inherent uncertainty involved in mortality assumptions?*

It is difficult to communicate the extent of the uncertainty involved in mortality assumptions. Reference to historic UK population data and speculation about medical advances and pandemics are all easy to understand but there is such a wide range of future possibilities that it is difficult to define the amount of uncertainty involved.

The potential impact can be quantified to some extent using scenarios, although these will be subjective.

The methods of communication should depend on the audience – discussions with a life company can perhaps be more technical than those with pension scheme trustees. We consider there is no single method that can capture the full range of features and so a range of methods should be used.

As noted in our general comments, for small numbers of lives, the random risks inherent in mortality are likely to be of far greater importance than uncertainty in the assumptions relating to base mortality or future improvements. In such circumstances we believe it is more important to communicate this random uncertainty than the uncertainty relating to the mortality assumptions.

- b) Do respondents agree that the use of separate assumptions for base mortality and future changes in mortality, not taking the form of margins in other assumptions, would be desirable?*

Yes.

- c) Do respondents have views on appropriate methods of communicating the significance of assumptions, both in absolute terms and relative to that of other assumptions?*

The suggestions in the paper appear reasonable.

3 Some proposals regarding the use of summary statistics and benchmarks in reporting on mortality assumptions are considered in section 3.

- a) Do respondents foresee any practical difficulties in communicating the assumptions about subsequent changes in mortality rates underlying life expectancy statistics?**

We did not find this question clear; however we note that assumptions regarding future changes in mortality rates can be complex (e.g. cohort effects) and these are difficult to communicate precisely.

- b) Do respondents have suggestions for summary statistics that can be used to describe changes in mortality rates?**

Summary statistics are obviously useful to regulators, analysts, etc for comparisons between schemes or companies. We suggest it is therefore for the relevant regulator to specify their requirements. This will then tend to become the norm for other communications in respect of that scheme/company and alternative statistics – whatever their merits – proposed by the BAS are unlikely to be welcome.

Any summary statistic is necessarily a gross simplification of a complex set of assumptions, usually varying by age and time, and the limitations of such statistics should be recognised.

With regard to particular summary statistics considered in section 3:

- We agree that period life expectancy is a misleading term.
- Cohort life expectancy is more meaningful but can also be misleading, as it takes no account of the effect of discounting. The cohort life expectancy (for a range of current ages) can help users put the mortality assumptions into context but a comparison of annuity values is likely to be better for an informed audience.
- In other cases it may be appropriate to state sample improvement rates, (e.g. as with withdrawal/ill-health decrement tables in Actuarial Valuation Reports), for more than one current age if there is a material difference. “Improvement rate” can be defined as the reduction in q_x for a given age from one year to the next.

- c) Do respondents think that the use of benchmarks is useful, and if so, should the development of standard benchmarks for future changes in mortality be encouraged?**

Any benchmarks must depend on purpose for which they are to be used.

Benchmarks for changes in mortality would be helpful – and we do believe that attempts to develop them should be encouraged – but these are likely to prove highly contentious and a range of benchmarks may be required. A simple alternative, in the interim, would be to make a comparison with constant rates of improvement.

4 The BAS would welcome any general comments that respondents may have on the various possibilities for standards set out in section 4. In particular:

a) Do respondents agree that the BAS should set some standards for mortality assumptions?

A clear case should be made for standards – in our view, this has not yet been made.

Mortality assumptions are used in very different scenarios and covering very different populations so “one standard fits all” is unlikely to work unless it is very generic, in which case it may add little value.

We favour generic guidance regarding the way in which mortality assumptions are reported rather than placing limits on the assumptions permitted. It would be difficult for prescriptive limits to remain up-to-date and there are likely to be exceptions to such limits which may be appropriate in particular cases – e.g. when considering a population which is predominantly in poor health. If there is a case for technical standards (as opposed to reporting standards) these may be better set by the appropriate regulator (e.g. TPR or FSA) than the BAS.

b) Do respondents agree that reporting standards would play a significant role in increasing the transparency of assumptions and their comprehensibility to users of actuarial information?

Yes, but it should be adequate to cover this under the generic reporting standard. The reporting standard(s) could help increase the transparency of assumptions and their comprehensibility to users. However, care should be taken not to make the requirements of any standards too onerous or detailed, as too much information could detract from the overall message as well as imposing additional costs on users. Standardisation of terminology would also be of benefit.

c) Do respondents have any comments on how to assess the likely impact of possible BAS standards for mortality assumptions?

It is very difficult to assess the impact of possible BAS standards for mortality assumptions without greater clarity on the form they might take. The impact will also be affected by the actions of regulatory authorities.

5 In section 5 the BAS considers possible standards for assumptions about base mortality.

a) Do respondents believe that it would be desirable for a BAS standard to require the use [of] the most recent applicable published tables, taking into account both the communication problems and the practicality of setting a limit on the tables to be used?

We agree that, generally, it is more transparent to use more up-to-date mortality tables when setting assumptions. However, we do not believe it would be appropriate for the BAS to prescribe that the “most recent applicable published tables” must be used. For example:

- Assumptions may be agreed at the beginning of a scheme funding valuation process and it would be costly to have to amend these assumptions simply because new tables are published before the valuation is signed off.
- Consistency from year-to-year can aid clarity in some circumstances, in which case using a reducing percentage of an unchanged table may be better understood than “re-basing” to the latest table.

- CMI tables cover a variety of populations and there may be a delay until actuaries are sufficiently familiar with the most-recent tables to recommend their use.

We do not believe that difficulty of communication should necessarily preclude the use of recent (but not the latest) tables. Provided a suitable justification can be given to the user, this should not cause a communication problem as suggested in paragraph 5.26.

Notwithstanding the above, use of very out-of-date tables because they happen to fit can potentially be misleading. If the dataset is large enough then a specific table could be constructed; if not then it may still be sufficient to graduate with respect to an existing table and the most suitable table (in terms of shape) may be an older table. However, where data are not sufficient to graduate directly or with respect to an existing table, it is probably more appropriate to use a recent table as otherwise full credibility is effectively being given to the data. However, we are not convinced that there is a need for the BAS to impose standards regarding the use of tables.

b) Do respondents have any comments on the proposals for possible requirements for reporting on assumptions about base mortality, criteria that assumptions should meet, or limits that should be observed when setting assumptions? Respondents are asked to focus on:

- *any practical problems that might arise in complying with them; and*
- *whether they would further the BAS's aim of increasing the transparency of assumptions and their comprehensibility to users of actuarial information.*

Emphasis should be on clarity of reporting and the level of understanding of the audience.

Whilst we agree with the principles outlined in paragraphs 5.41 to 5.45 (i.e. that the choice of mortality assumptions should be justified), these paragraphs would require a lot of detail to be provided, particularly in respect of small pension schemes, where random variation is likely to be more significant than error in the underlying assumptions.

Similarly, paragraph 5.48 could require a significant amount of work and explanation. We are not sure it is always necessary to describe the sources of the risk and uncertainty in the assumptions, as set out in paragraphs 5.28 to 5.34. These paragraphs are a reasonable explanation of the sources of risk and uncertainty but there is a danger of overwhelming the user with a great deal of technical information to the detriment of their overall understanding. It should be sufficient to explain that uncertainty exists and explain its significance, both in terms of whether the underlying base tables are an appropriate fit to the population under consideration, as well as the random variation which will actually be exhibited by the population.

As noted in our general comments, we do not believe it would be appropriate for the BAS to prescribe limits on mortality assumptions. We believe it is more appropriate for the regulatory authorities to decide whether this is necessary in specific situations.

6 In section 6 the BAS considers possible standards for assumptions about future changes in mortality.

- a) *Do respondents agree there is no objective basis for differentiating the future changes in mortality likely to be experienced by a particular small group of lives from those likely to be experienced by the population as a whole? If respondents disagree, the BAS would be interested in examples to the contrary, together with supporting evidence.*

We agree that it is highly unlikely to be possible to sensibly differentiate future changes for small groups. It may be possible to consider large subsets of the overall population (e.g. males/females) and propose different projections for each subset. Small groups might then be judged to be closer to a particular subset than the overall population.

Where sufficient data is available to differentiate historic changes for different groups, these past changes do not necessarily imply that differentials will persist in future. Any assumptions in this regard need to be carefully justified and clearly communicated. For example, expected differences between social classes could be argued to converge on the basis that lower social classes can be expected to change their lifestyles in manners similar to those already adopted by upper social classes (e.g. cessation of smoking). However, it can also be argued that these differences will persist as the upper social classes will always benefit first from medical improvements and new lifestyle changes (e.g. reacting to obesity).

We do not believe that the lack of objectivity necessarily demands a single standard, and believe there may be a role for suitable benchmarks, against which alternative assumptions can be gauged.

- b) *Do respondents have any comments on the proposals for possible requirements for reporting on assumptions about future changes in mortality, criteria that assumptions should meet, or limits that should be observed when setting assumptions? Respondents are asked to focus on:*
- *any practical problems that might arise in complying with them; and*
 - *whether they would further the BAS's aim of increasing the transparency of assumptions and their comprehensibility to users of actuarial information.*

Similar comments apply as for the response to question 5 (b) – we believe the emphasis should be on clarity of reporting and the level of understanding of the audience. As previously noted, we feel that suitable benchmarks may add clarity in this area.

We trust you find these comments useful – please let us know if you have any queries about any of these points.

Yours sincerely

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