

Broadstone Academy

Overview of Mortality and Longevity



Agenda

- What do we mean by longevity/mortality?
- What is a mortality table?
- How is mortality changing over time?
- How should we set a mortality assumption?



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"Your days are numbered. Use them to throw open the windows of your soul to the sun. If you do not, the sun will soon set, and you with it."

- Marcus Aurelius

"I must say I have been slightly rocked by some of the data on Covid fatalities. The median age is 82-81 for men and 85 for women. That is above life expectancy. So get Covid and live longer."

- Boris Johnson, 15 October 2020

Life expectancies	Currently age 65 (Born in 1958)	Currently age 45 (Born in 1978)
Male	21.6 (i.e. live until 86.6)	23.1 (i.e. live until 88.1)
Female	24.0 (i.e. live until 89.0)	25.7 (i.e. live until 90.7)



Example cashflows



Projected Cashflows from 31 December 2022

Pensioners







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Source: Alien (1979)





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What mortality information is available?



The CMI (Continuous Mortality Investigation) release tables for use by actuaries

Base tables – data set





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Mortality improvements since 1979 Source: CMI data



Period to 2010 Sustained improvements Decreasing over time Male improvements faster than female Drivers:

- Fewer death from cardiovascular disease
- Drop in smoking rates

Mortality improvements since 1979 Source: CMI data



Period 2011-2019 Still improving, but slower Key causes:

- Previous improvements levelling off
- Falling GDP and growth
- Reduced health and social care spending

Covid pandemic

Source: CMI Mortality monitor

Chart 9: Quarterly excess deaths (from week 10 of 2020)



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Male	21.6 (i.e. live until 86.6)	23.1 (i.e. live until 88.1)
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TPR views

- 2023 statement issued in April
- Mortality data has not followed past trends (esp. 2020 and early 2021)
- Long-term picture remains unclear
- Early indication is that rates are stabilising and worse than 2019
- Take advice from Scheme Actuary
- Ensure changes to assumptions are *appropriate* and *justifiable*



https://www.thepensionsregulator.gov.uk/en/document-library/statements/annual-fundingstatement-2023

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Female	24.0 (i.e. live until 89.0)	25.7 (i.e. live until 90.7)



Life expectancies	Currently age 65 (Born in 1958)	Currently age 45 (Born in 1978)
Male	20.8 (i.e. live until 85.8) i.e0.8 years	22.4 (i.e. live until 87.4) i.e0.7 years
Female	23.3 (i.e. live until 88.3) i.e0.7 years	25.0 (i.e. live until 90.0) i.e0.7 years



Life expectancies	Currently age 65 (Born in 1958)	Currently age 45 (Born in 1978)
Male	22.4 (i.e. live until 87.4) i.e. +0.8 years	23.9 (i.e. live until 88.9) i.e. +0.8 years
Female	24.8 (i.e. live until 89.8) i.e. +0.8 years	26.5 (i.e. live until 91.5) i.e. +0.8 years



Justification for amending the base table?

Actual scheme experience

Requires large membership

Consider other factors

- Proxies for health and wealth (socio-economic group and life style)
- Level of pension
- Pay
- Industry
- Occupation
- Residential location

Postcode mortality analysis?

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Some factors to consider in projecting the future

Short term

Ambulance response times A&E wait times Waiting lists for treatment/operations Missed medication Covid resurgence? Healthier population?

Longer term

Medical research disruption (positive or negative?) Development of vaccines Missed or delayed diagnoses Lifestyle changes (varying impacts on different cohorts) Mental health and economic impacts Unknown future clinical changes from Covid Care provision Climate change



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Requirement to be prudent when setting funding assumptions



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Understand the impact on your scheme.



"I don't want to gain immortality through my work,... I want to achieve it through not dying"

- Woody Allen

Questions?

Questions?



Timetable of key publications

2023

- Consultation on approach for S4 SAPS tables (May June 2023)
- CMI 2022 projection tables were published June 2023
- Second consultation on S4, including draft rates (Nov 2023 Jan 2024)

2024

- S4 SAPS table published expected Feb 2024
- CMI 2023 projection tables typically published in March

Credits

Alien (1979)

• Copyright © 1979 by Twentieth Century-Fox Film Corporation.

Star Trek (1966-1969)

• Copyright © CBS Television Studios / Paramount Pictures.

Horrible Histories

• Copyright © 2023 BBC.



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