UK Mortality and Longevity Update April 2017

Introduction
A. This is the 11th Edition of the UK Update, prepared for the IAA Mortality Working Group, members of the IFoA and other people interested in mortality research. Thank you to the many contributors who have sent me references.
B. I would like to pass on the production of future UK Updates to a person or a small team who would be able to continue the tradition of producing information about UK research and developments in mortality for an international audience and also for UK actuaries. Please contact me if you might be interested in forming or being part of a small team to take this on: br@ridsdales.com
C. Hyperlinks are embedded in the titles of papers. This may give problems for certain browsers: if you have problems I suggest either using another browser or copying the hyperlink into your browser.

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1. Highlight: Longevity improvements falter

UK
The CMI Mortality Projections Model CMI 2016 was published in March 2017, accompanied by CMI Working Papers 97, 98 and 99. The Model is calibrated to England & Wales population mortality data up to 31 December 2016, and its method differs in a number of respects from earlier versions. You must be an Authorised User to access the Model but there is a freely-available summary here: Summary of CMI Working Paper 97: "CMI Mortality Projections Model: CMI_2016"
There was a meeting 11 April 2017 to discuss recent mortality experience and the prospects for future mortality improvements. A set of slides from the discussion are at present available from the SIAS website.

Why has mortality in England and Wales been increasing? An iterative demographic analysis
Lucinda Hiam et al, Journal of the Royal Society of Medicine, February 2017


Is dementia really on the rise? Carl Campbell, the Actuary, March 2017

Mortality improvements in the noughties may have been the blip Jon Palin, Professional Pensions (Firewalled)

USA
Mortality in the United States, 2015 Data from the National Vital Statistics System, Mortality Life expectancy for the U.S. population in 2015 was 78.8 years, a decrease of 0.1 year from 2014. Hispanics fare better than whites, who fare better than blacks. Heart disease and cancer remain the biggest killers. Unintentional injuries ranks number three.
New mortality data show declining longevity improvements — how should life insurers prepare?
June 2016, United States

IAA
My presentation “Is longevity still improving?” at the IAA Seminar on Current Developments in Aging and Mortality, 18 April 2017, Budapest. In the past five years, levels of longevity improvement in a variety of European countries, in Australia, in the US and in the UK have fallen back from the improvement levels in the previous five years.

2. Institute and Faculty of Actuaries

Longevity Bulletin: Big data in health (Issue 9) Examines recent advances in the field of big data and explores potential impacts for insurers. It presents a number of theoretical and practical examples on the uses of big data in health, covering research activities, and challenges from the use of biomedical data.

If you would like to be added to the mailing list for future editions of the Longevity Bulletin, sign up here.

Other IFoA research activities related to this topic, include:
- Actuarial Research Centre (ARC) programme on the use of big health and actuarial data for understanding longevity and morbidity risks
- Modelling, Analytics and Insights from Data (MAID) Working Party
- Impact of Wearables and the Internet of Things Working Party

Actuarial Research Centre Webinar Series on current areas of research: See Forthcoming Events section below

Antimicrobial resistance: Global threat to health and economy, IFoA’s Spring Lecture, 27 April 2017 was delivered by Prof. Dame Sally Davies, Chief Medical Officer for England. The Lecture was live streamed internationally. It is hoped that the Lecture will be available without firewall (try the hyperlink above)

CMI

Mortality projections
- As mentioned above, the CMI Mortality Projections Model CMI_2016 was published in March 2017, accompanied by CMI Working Papers 97, 98 and 99. See above, also for details of the SIAS meeting.

- The Committee does not intend updating the CMI library of mortality projections in future. However, given the interest in the National Population Projections, the CMI has requested details of the 2014-based projections from the ONS in the form contained in the library. Corresponding life expectancies are here.

Assurances (critical illness and mortality)
- The Assurances Committee has issued Working Paper 94 which finalises the “08” Series assurances tables. This follows the consultation on the proposed tables, described in Working Paper 89 for accelerated critical illness and in Working Paper 92 for term mortality. Authorised Users only

Self-administered pension schemes (SAPS) mortality
- CMI Working Paper 95 was published in February 2017. An executive summary is available to all.
3. Other UK papers, presentations and articles

**Office for National Statistics**

Statistical bulletins on life expectancy or mortality issued by ONS during the period 1 October 2016 to 7 April 2017

- Historic and (for 2016) estimated period life expectancies at selected ages, E&W, 2005 to 2016
- Quarterly mortality reports, England: data up to Dec 2016

This is the first in a planned series of quarterly releases providing timely information on mortality patterns in England. The reports will be produced with support from Public Health England

- Healthy life expectancies by Index of Multiple Deprivation
- Health state life expectancies, UK: 2013-15
- including Template for calculating healthy life expectancy
- Method changes to life and health state expectancies
- Updated note on period and cohort life expectancy

Health expectancies at birth and age 65 in the UK, constituent countries and subnational areas: 2010-12

Most common age at death, by socio-economic position in E&W: a 30-year comparison

Alcohol-related deaths in the UK

Suicides in the UK: 2015 registrations

Excess winter mortality in E&W Statistician’s quote “One of the key factors behind the lower excess mortality this winter was a fall in the number of deaths among the elderly. This was mainly due to the most prevalent strain of the flu virus impacting younger people rather older people, who are more at risk”.

Deaths registered in E&W

**City University**


**Kent University**

JRI


Pricing Buy-Ins and Buy-Outs

The Cross-Section of Asia-Pacific Mortality Dynamics: Implications for Longevity Risk Sharing

Modeling Multicountry Longevity Risk With Mortality Dependence: A Lévy Subordinated Hierarchical Archimedean Copulas Approach

Robust Mean–Variance Hedging of Longevity Risk
SM Bonds—A New Product for Managing Longevity Risk

IME
Measuring mortality heterogeneity with multi-state models and interval-censored data

Redistribution of longevity risk: The effect of heterogeneous mortality beliefs

ASTIN
LONGEVITY RISK MANAGEMENT AND SHAREHOLDER VALUE FOR A LIFE ANNUITY BUSINESS

THE LOCALLY LINEAR CAIRNS–BLAKE–DOWD MODEL: A NOTE ON DELTA–NUGA HEDGING OF LONGEVITY RISK

E AJ
Old-age provision: past, present, future

Small population bias and sampling effects in stochastic mortality modelling

Other
Reviewed in A better world towards convergence of longevity? Santosa, the Lancet, Feb 2017. “The study predicted uninterrupted gains of life expectancy with a higher probability for men (85%) than for women (65%) in 35 countries, with sex gaps in life expectancy expected to shrink in all countries, except in Mexico. Female life expectancy would break the 90-year barrier with a more than 50% probability by 2030, a barrier believed unreachable at the turn of the 21st century.”


4. IAA Mortality Working Group

The IAA Mortality Working Group met in Budapest, 19th to 21st April. I took on role of Chairman on 1 January 2017. Agenda and papers here.
Andrew Cairns, Director of the Actuarial Research Centre in Edinburgh and Dale Hall, Managing Director of Research, Society of Actuaries joined the discussion on how to further international research in mortality and longevity.

IAA Seminar on Current Developments in Aging and Mortality: 18 April 2017 Budapest Programme and papers here

5. International papers, presentations, articles and websites

Longevity Workshop and Forum held in Sydney in February, Presentations here

Longevity Research Forum, Sydney, Feb 2017, Presentations here. (the slides have a lot of references included)
6. Forthcoming events

**Actuarial Research Centre Webinar Series 2017**: designed to encourage a two-way dialogue and participation on the issues currently being researched.

- **17 May 2017** - Modelling, Measurement and Management of Longevity and Morbidity Risk - Developing a new generation of mortality and morbidity models, with a specific focus on the drivers for mortality. Speaker: Prof Andrew Cairns (Heriot-Watt University)

- **13 June 2017** - Use of Big Health and Actuarial Data for understanding Longevity and Morbidity - New statistical and actuarial methods in the use of Big Data, in the context of health and wider applications. Speakers: Prof Elena Kulinskaya (University of East Anglia) and Nigel Wright (Aviva)

- **14 June 2017** - Minimising Longevity and Investment Risk while optimising Future Pension Plans - Development of pension product designs that keep the customers’ needs at the forefront, with a real income in retirement that minimises costs for the customer. Speaker: Prof Jens Perch Nielsen (Cass Business School)

**Thirteenth International Longevity Risk and Capital Markets Solutions Conference**
On the 21st and 22nd of September 2017 at the Cathay Financial Center, Taipei, Taiwan
Hosts: National Chengchi University and Pensions Institute, Cass Business School

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This is a note for the UK Actuarial profession and others, and for the International Actuarial Association (IAA). The last six-monthly report is [here](#).

The most recent UK version of the report from the IAA Mortality Working Group is [here](#).

The web page for the Institute and Faculty of Actuaries Mortality Research Hub is [here](#).

The web page for the IAA Mortality Working Group is [here](#), and for the MWG Information Base is [here](#).

Brian Ridsdale 28 April 2017
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