



**INTERNATIONAL ACTUARIAL ASSOCIATION**  
**Mortality Working Group (MWG) May 27-28, 2016**  
**Corinthia Hotel, St Petersburg, Russia**

**Minutes**

*The attendance list is at the end of these minutes.*

**1. Welcome, apologies and minutes of the prior meeting**

The Chairman welcomed all members and observers present. The meeting included two sessions with a combined length of 8 hours over the two days.

The minutes of the prior meeting in Vancouver were approved, subject to the addition of Mika Mäkinen to the list of members who were present.

**2. New members / retiring members. Brief introduction by all members, fields of interest**

Paul Lewis presented a list of *new members* approved since the last meeting:

- Ayse Arik - Turkey
- Farid Flici - Algeria
- Morteza Aalabaf-Sabaghi – Iran

The following members attended the meetings and *would like to be considered* as potential members of the MWG:

- Ibrahim Muhana – Lebanon
- Dilara Asadova – Azerbaijan
- Dmitry Pomazkin - Russia

The following members have *retired* from the MWG:

- Bridget Browne - Australia
- Chresten Dengsoe – Denmark

The following members will shortly be *retiring* from the group:

- Paul Lewis (after the meeting in Cape Town)

**Professional scope:**

Paul asked participants to describe their activities, which are very varied: some members are academics, others work in the insurance and reinsurance industry. Specific areas of expertise mentioned include:

- Mortality research with national associations (CMI of the IFoA, SOA etc.)
- Old age mortality
- How underwriting affects mortality
- Reserving and risk models
- Persistency studies
- Pension benefits and longevity risk
- Effect of individual behaviour on insurance
- Longevity swaps

Paul Lewis noted that the information about members' fields of activity is incomplete. He will send a spreadsheet to collate this.

**Geographical scope:**

Paul noted that some important countries are not represented in the group at present – India, Brazil, Mexico, and France

**3. Double gap method of forecasting life expectancy**

Marius Pascariu, a guest speaker from the Max Planck Odense Centre on the Biodemography of Aging, University of Southern Denmark, presented a paper demonstrating a new method of forecasting life expectancy at birth in future years by extrapolating two variables: the gender gap in the population under consideration, and the gap between female life expectancy in the population and total life expectancy (LE) in the country with the highest LE in that year. Data was taken from HMD for 1950-2010. The results were verified by back-testing.

Questions were raised about the fact that underlying causes of changes in LE and the gender gap are not taken into account in this method.

**4. The Future of Life Expectancy**

James Vaupel, a guest speaker from the Max Planck Institute for Demographic Research presented a detailed survey of possible future developments in life expectancy, noting that linear extrapolation of the trends seen for over 100 years have been a much better predictor than “expert opinion” which has always assumed that LE improvements would tail off and even reach an upper limit. A study of past experience and the possibility of genetic and medical developments suggest, in his opinion, that LE will continue to increase, with enormous implications for pension liabilities.

In reply to questions from the participants, James emphasized that his theories relate to life expectancy and not to the maximum possible lifespan.

**Future of the Human Mortality Database (HMD)**

The Human Mortality Database (HMD) is a unique open-access collection of detailed mortality and population data for 38 countries with relatively complete and reliable vital registration and census data. With nearly 40,000 registered users as of December of 2015, the HMD has become a crucial source of mortality information for researchers, policy makers, actuaries and other professional communities around the world.

Brian Ridsdale described the severe funding problems of the HMD. After fifteen years of continuous funding from the U.S. National Institutes of Health, the HMD is about to lose financial support from the U.S Government due to budget cuts and a reorientation of priorities away from large research instruments and infrastructures. The HMD is now seeking users' input, collaborations and additional funding to support further developments.

A charging model has been considered but many organizations supply data to the HMD on condition that access is free.

It was suggested that actuarial associations could assist, but there was general agreement that their resources would be inadequate to fund the whole budget from fees paid by members. It was thought that perhaps the largest organizations could assist. The SOA has provided financial assistance and in return is having two studies completed, one on cause of death experience from eight countries and another on mortality differences by state in the US. Paul suggested approaching governmental or regulatory authorities. Sam Gutterman commented that the pension industry could be particularly at risk if there is insufficient data for projections.

James Vaupel said that there is a real risk that the HMD will cease operation in 2017 unless funding is obtained. The leadership of the HMD believes in open access, and denying this would be a tragedy.

Paul said he would raise the matter in the Scientific Committee.

**5. Buffer**

**6. Break**

**7. [Improving the MWG website and information pages](#)**

Brian Ridsdale affirmed that the website is an essential tool for communication. A summary “Update” of the minutes of each meeting is available in 9 languages (thanks mainly to members of the MWG), which is excellent. The Updates include hyperlinks to the papers presented at the meeting and to the minutes themselves, and are sent out to international actuarial associations by members of the MWG. The number of “hits” seems to have decreased since the last meeting (this is difficult to know for certain because the web provider has changed), but there were “hits” in every language. Paul will raise with the IAA secretariat the importance of obtaining reliable statistics.

Al Klein suggested to circulate a brief summary to a wide audience (rather than the full minutes) in the hope that this would give greater publicity. Brian observed that the Update is a summary for the wider audience.

At present, the minutes are sent to all members of actuarial bodies represented on the MWG. It would also help if MWG members would set up country-specific mailing lists.

It was suggested to include other relevant professions in the circulation lists such as risk managers.

Sam Gutterman asked whether actuarial associations have national mortality committees which might be interested.

[The discussion turned to management of the “information base” pages on the website.](#) Each subject page is supposed to have an owner, but currently not all pages have owners and not all pages are regularly updated. The editorial committee would like to set up guidelines, and exert minimal editorial control, e.g., to ensure that the content complies with IAA policy.

1) Overview – Paul is happy to continue.

- 2) Cause of death – Séverine recommended adding new material
- 3) Disability and mortality – Ermanno suggested a more appropriate name would be “Mortality of disabled people”. He also noted that there is no page on Old Age Mortality and this would be desirable. Both proposals were agreed.
- 4) Financial products – here also the title is misleading, since the intention is to cover ways of hedging longevity risk in the capital market. Post meeting, the suggestion was made to call this “Hedging Longevity Risk”.
- 5) Healthy longevity – Bridget has left the group but it was decided that the information on this page was still relatively up to date
- 6) Other sources of information – Dieter will continue to update
- 7) Pandemics – Mika said that it is not easy to find technical documents, Brian suggested approaching reinsurers
- 8) Pension and annuity reserving - Ayşe Arik offered to take responsibility for the page.
- 9) Mortality projections – Dov suggested some ideas to reorganize the page by sub-topics.
- 10) Social and demographic – Dieter will update.
- 11) Trends and uncertainty – Ewa Dylewska offered to take responsibility for the page.
- 12) Underwriting – Al Klein is looking for more papers. He commented that he has received feedback from users of his page.

Brian offered to request the IFOA librarians to do a search of worldwide actuarial and associated journals for papers relevant to a particular subject. Members should send him a note giving the requested search criteria. The MWG agreed on a “soft” deadline for updates to the web pages by the end of **July**, and a “hard” deadline by the end of **September**, in order to review the material and produce a final version by the Cape Town meetings.

#### 8. [CEPAR Research](#)

Michael Sherris, from the Centre of Excellence in Population Ageing Research (CEPAR) located in Sydney, Australia, described his organization, which deals with multi-disciplinary research into longevity, health and disability, income, LTC, individual decision-making and financial models.

There will be an “Old Age Workshop” in Sydney in February 2017.

#### 9. [Feedback on USA mortality research](#)

Al Klein presented a comprehensive survey of recent research projects in the US, prepared by Dieter Gaubatz, including:

- LTC persistency (of policies not in the claim stage, including natural terminations and death)
- Structured settlement mortality experience (including lawsuit settlements and workers’ compensation)
- Industry life tables, which now show mortality rates divided into 10 non-smoker and 4 smoker classes, reflecting differences in experience among different risk classes across companies
- A “relative risk tool” for companies to be used by companies in the upcoming PBR (Principles Based Reserves)
- Term conversions
- Mortality Improvement factors
- Joint-life and last survivor survey

Al noted that there was an increase in mortality in 2015 compared to 2014: only deaths due to cancer and to HIV/AIDS showed an improvement.

**10. What it means to be a member of the IAA MWG - Part 1**

Paul Lewis gave a brief presentation of the history of the IAA MWG, highlighting the increase in attendance in the meetings, as well as the successful growth of the MWG through new members. He discussed the fact that there were various levels of participation, and that it would be ideal to get the level of participation up for those less participative members.

He also pointed out that there was limited information on the website as to where members worked, and what their specific interest in mortality was. He committed to doing a spreadsheet database to update this. There is sometimes an issue with members not responding to emails, and this is occasionally due to incorrect email addresses. This needs to be resolved.

Paul asked the members to consider whether the status quo was sufficient, or whether we should look to improve the output of the MWG. This was to be discussed under item 13.

**11. Meeting of Part 1 ended at 15:30**

**12. Selection effect – North American versus the rest**

Bill Horbatt gave a presentation about problems with anti-selection. He had studied Estonia, Poland and Croatia. Ewa Dylewska had questions about the fact that Poland is very much larger than the two other countries, and may significantly impact the results.

**13. What it means to be a member of the IAA MWG – Part 2**

Paul Lewis continued this item that started at the end of the agenda yesterday. The following proposals were agreed:

- Ksenia Novikova will take on the role of marketing the information available to the interested persons.
- Paul Lewis will collect biographies of the active members and put together a spread sheet with them. MWG members to advise Paul by 1 August 2016 if they have any concerns about their information being put on the list.
- Paul Lewis will assign tasks to members who have “nothing on their plate” and who don’t volunteer on their own.
- We believe the group will function best in the long run if members have ongoing involvement in MWG tasks. The commitment will vary, depending on the specific project.
- We believe that a minimum time commitment of 1 hour a week should be made.
- It was noted that Australia, the USA and the UK are doing videos with education for continuous professional development and this is something that the MWG could consider.
- We should continue to work to build relationships with universities, with the intention of them having access to, using, and supporting our content.
- We need to work on improving the engagement of the various sub-committees during the six months between the meetings.

#### **14. Ongoing Project 1: Insured / population / annuity mortality**

Paul Lewis gave a presentation where a project group has compared the mortality of the population with the mortality among life insurance, annuitants and pensioners. The countries covered were Australia, Canada, South Africa, USA and Finland. It was agreed to move forward with this project.

**Actions:** The committee needs to provide a paper (eg 10 pages) for the Cape Town meetings, with some of the initial results, and further steps recommended.

#### **15. Ongoing Project 4: Old age mortality**

Al Klein gave a presentation on this subject. A student of Severine's is doing a research project to help with this and he has just completed his initial work.

Ermanno Pitacco presented his paper and asked for feedback. MWG members are requested to send comments directly to him.

#### **16. [Ongoing Project 2: Long term drivers of mortality](#)**

Al Klein gave a presentation on the work that has been done to date. A document has been drafted and has been sent to the rest of the team for review, comments, and additions. Some discussion followed and it was decided that this group needed to have a call to determine the best direction to go from here. Al agreed to set up the call.

#### **17. Ongoing Project 3: Mortality improvements at older ages**

Sam Gutterman gave a presentation. A question was raised about what is "old age" and it was decided to be 75 and older.

#### **18. Discussion on ongoing projects**

It was noted that there has been forward movement on all of the projects, but that there was still quite a lot of work to do before they were completed.

These items will remain on the agenda for the Cape Town meetings

#### **19. Feedback from Scientific Committee**

Martin Stevenson gave feedback from Scientific Committee.

They have discussed the process of how to publish IAA-papers. It was confirmed that it is acceptable to publish minutes and individual papers from the MWG, but official IAA endorsed papers need to follow the agreed Scientific Committee process.

The new Big Data and Banking working groups are close to being established.

#### **20. [Climate Change and Mortality: Feedback from Populations Issues Working Group \(including feedback on the recently published paper\)](#)**

Sam Gutterman gave a presentation about the Population Issues Working Group.

Sam gave a presentation on climate change and mortality, which was done for the Population Issues Working Group, and he requested further volunteers to join this committee.

## **21. Impact on mortality of immigration from Russia to Israel**

Dov Raphael gave a presentation which indicated that migration can have an impact on a country's mortality, and that it was crucial to try to understand what was underlying the population changes.

## **22. Buffer**

## **23. Break**

## **24. Mortality developments in Russia over the last 20 years**

Dmitry Pomazkin, from the Russian Association of Actuaries, gave feedback on recent developments, talked about projection techniques, showed some interesting statistics about Russian mortality, as well as some interesting websites and tools that can be used to model mortality.

## **25. Country reports**

Rikard Bergstrom presented the [Swedish country report](#). Rikard showed that while life expectancy at birth has increased dramatically over the years, life expectancy at 65 has not increased as much.

Brian Ridsdale presented the [UK country report](#) prepared by Kriszti Halay. Ewa Dylewska presented the [Polish country report](#).

A [country report from the USA](#) was also provided.

MWG would like to see country reports from Turkey, Finland and Russia for the Cape Town meetings, as well as updates from Italy and Norway.

## **26. New research items from the UK, HMD funding, priority issues from MSRC**

[Brian Ridsdale gave a presentation](#) and [browsed through the paper](#) that was sent out with the agenda. The presentation included:

- The IFoA' MRSC has produced two new Longevity bulletins
  - [Modelling edition](#), November 2015: (click to hyperlink)
  - [Antimicrobial Resistance edition](#), May 2016: (click to hyperlink)
- UK Mortality improvements falter?
- DIY websites
- Rising white mortality in US
- Medical error: 3rd largest cause of death
- HMD
- UK Mortality Research Steering Committee – hot topics for research
- Key questions for actuarial science – the IFoA sponsors three new £1 million research projects
- Conferences and Symposia – see below

## **27. Geneva discussion forum**

The next meeting is being held in Geneva on 30 September 2017. The MWG will be represented by Lars Pralle.

## **28. Future seminars of interest**

Ermanno Pitacco told about a workshop that will take place in Australia in February. It will be arranged by University of South Wales.

Paul Lewis said that it should be possible to arrange a half day mortality seminar in Cape Town. However, the IAA meetings would be followed by the Actuarial Society of South Africa's annual convention, which may make it difficult to arrange an additional seminar

Martin Stevenson said that there will be a seminar in Tokyo 22-23 June and asked if anyone wanted to talk at this.

Brian Ridsdale covered the International Symposium on Mortality and Longevity organised by the IFoA in consultation with the IAA MWG: 7-9 September 2016, Royal Holloway, University of London, UK.

This conference will provide a multi-disciplinary forum for the exchange of information on the latest relevant research, and also an opportunity to learn about established knowledge from a range of different disciplines, all with the aim of better understanding and managing this complex yet critical subject. Booking [here](#)

Al Klein mentioned the upcoming Living to 100 Symposium in Orlando in early January 2017. He also mentioned that up to three of our research projects could be discussed at this meeting.

Al then presented his review of the new Chinese mortality tables developed by the Chinese Association of Actuaries.

## **29. [Mortality data required by IAIS](#)**

Jules Gribble gave a presentation covering the role of the IAIS, and in particular the impact of mortality stresses.

It was decided that it would be useful to keep this item on the agenda for Cape Town.

## **30. Issues Advisory Group**

Much of the ongoing work that was proposed by the IAG is still in progress.

There was a brief discussion on E-cigarettes, a topic Sam Gutterman forwarded. This is a timely topic where we can potentially make a significant societal impact if we are able to research and report on the mortality related to e-cigarettes quickly. Since we were out of time, it was agreed that this topic should be addressed again in Cape Town.

## **Actions**

1. PL to send a spreadsheet for people to fill in their details, areas of interest - End July (item 2)
2. PL to send letters to new members and prospective members – End July (item 2)
3. Soft deadline on webpage updates – End July (item 7)
4. Hard deadline on webpage updates – End September (item 7)
5. MT to provide a paper for the Cape Town meetings, with some of the initial results, and further steps recommended – End October (item 14)

## **Presentations and papers attached to the minutes**

- Marius Pascariu - [Double gap method of forecasting life expectancy](#) (item 3)
- James Vaupel – [The future of life expectancy](#) (item 4)
- Brian Ridsdale – MWG Website and info base
  - [Improving the MWG website and information pages](#)
  - [The discussion turned to management of the “information base” pages on the website](#)
- Michael Sherri - [Centre of Excellence in Population Ageing Research](#) (item 8)
- Al Klein – [Feedback on USA research](#) (item 9)
- Paul Lewis – [What it means to be a member of the IAA MWG](#) (item 10)
- Bill Horbatt – selection effects (item 12)
- Paul Lewis – insured, pensioner, population, annuitant mortality (item 14)
- Al Klein – [Old age mortality](#) (item 15)
- Ermanno Pitacco – [Old age mortality](#) (item 15)
- Al Klein – [drivers of future mortality](#) (item 16)
- Sam Gutterman – [climate change and mortality](#) (item 20)
- Dov Raphael – [immigration and mortality](#) (item 21)
- Dmitri Pomazkin – [mortality trends in Russia](#) (item 24)
- Country reports – [UK country report](#), [Swedish country report](#), [Polish country report](#), [country report from the USA](#) (item 25)
- Brian Ridsdale – UK mortality updates (item 26)
  - [Presentation](#)
  - [paper](#)
- Jules Gribble – [Mortality stresses](#) (item 29)

## Attendance to the Mortality Working Group Meeting

### Present:

Paul Lewis – Chairperson	Bill Horbatt
Al Klein – Co Vice chairperson	Mika Makinen
Brian Ridsdale – Co Vice chairperson	Ksenia Novikova
Ayse Arik	Hans Michael Overgaard
Severine Arnold	Ermanno Pitacco
Rikard Bergstrom	Lars Pralle
Ewa Dylewska	Dov Raphael
Michael Eves	Martin Stevenson
Sam Gutterman	Hiroshi Yamazaki

### Conference Call:

Hans de Mik  
Dieter Gaubatz

### Absent:

Eduardo Martinez  
Farid Flici  
Assia Billig

### Observers:

Jean-Claude Ménard	International Social Security Association
Jari Niittuinperä	Suomen Aktuaariyhdistys
Tibor Párniczky	Magyar Aktuárius Társaság
Dmitry Pomazkin	Association of Actuaries Russia
Vladimir Novikov	Chairperson, Eurasia and Middle East
Tibor Párniczky	Magyar Aktuárius Társaság
Jill Hoffman	Singapore Actuarial Society
Dilara Asadova	Actuarial Association of Azerbaijan
Khadija Gasimoca	Actuarial Association of Azerbaijan
Maria Bagoamolova	Russian Guild of Actuaries
Ted Goldman	American Academy of Actuaries
Janet Barr	American Academy of Actuaries
Ian Duncan	Society of Actuaries
Dmitry Denisov	Russian Guild of Actuaries
Dmitry Pomazkin	Russian Association of Actuaries

### Guest speakers:

Marius Pascariu, James Vaupel, Michael Sherris CEPA