

The Actuary



MORTALITY IMPROVEMENTS

ANALYSIS OF THE PAST AND PROJECTION OF THE FUTURE



DON'T BOMB!

How to wow 'em with your presentation

DOUBLE DUTY

Bylaws vote and actuarial clubs

LIVING TO 100

Facing societal changes



SOA
2011

Get ready to get it done in the
city that works.

Join us at the SOA 2011 Annual Meeting & Exhibit in Chicago—the SOA's largest networking opportunity. Roll up your sleeves. This is the event where you dig in and get tons of takeaway. More than 100 hearty sessions, full of just what you need for professional growth—and offering loads of CPD credit. Speakers who'll move you to take action. And networking opportunities where you'll find other doers like yourself.



Annual Meeting & Exhibit

Oct. 16-19
Sheraton Chicago
Hotel & Towers
Chicago, IL

Past attendees said:

"The breakout sessions were terrific—right on target."

"Best retirement plans content ever, especially the DC plan content."

"Lots of good speakers. The complexity science session was impressive and useful."

Ready to get it done? Head to SOAAnnualMeeting.org.



Aug/Sep

The Actuary is published bi-monthly (February, April, June, August, October, December) by the Society of Actuaries, 475 N. Martingale Rd., Suite 600, Schaumburg, IL 60173-2226. Periodicals postage paid at Schaumburg, IL, and additional mailing offices. USPS #022-627.

This publication is provided for informational and educational purposes only. The Society of Actuaries makes no representation or guarantee with regard to its content, and disclaims any responsibility or liability in connection with the use or misuse of any information provided herein. This publication should not be construed as professional or financial advice. Statements of fact and opinions expressed herein are those of the individual authors and are not necessarily those of the Society of Actuaries or its officers, directors, staff or representatives. The Society of Actuaries does not endorse or make any guarantee with regard to any products, services or procedures mentioned or advertised herein.

The Actuary is free to members of the Society of Actuaries. Nonmember subscriptions: students, \$22; North American \$43; Int'l \$64.50. Please send subscription requests to: Society of Actuaries, P.O. Box 95668, Chicago, IL 60694.

The Actuary welcomes both solicited and unsolicited submissions. The editors reserve the right to accept, reject or request changes to solicited and unsolicited submissions, as well as edit articles for length, basic syntax, grammar, spelling and punctuation. *The Actuary* is copyedited according to Associated Press (AP) style.

For more information about submitting an article, please contact Sam Phillips, associate editor, at (847) 706-3521, sphillips@soa.org or Society of Actuaries, 475 N. Martingale Rd., Suite 600, Schaumburg, IL 60173-2226.

©2011 Society of Actuaries. All rights reserved. No part of this publication may be reproduced in any form without the express written permission of the Society of Actuaries.

POSTMASTER: Send address changes to the SOA, c/o Communications Department, 475 N. Martingale Rd., Suite 600, Schaumburg, IL 60173-2226.

CONTRIBUTING EDITORS

Corin Chapman, FSA, MAAA
corin.chapman.rog2@statefarm.co

Peter Hayes, FSA, FCIA
phayes@eckler.ca

David Ingram, FSA, CERA, MAAA
dave.ingram@willis.com

Cathy Lyn, FSA, FIA
clyn@sympatico.ca

Tom A. Phillips, FSA, MAAA
phillips.tom@principal.com

James Ramenda, FSA, CERA
jramenda@sscinc.com

Sue Sames, FSA, MAAA
sue.sames@towerswatson.com

Ross Winkelman, FSA, MAAA
rossw@wakelyconsulting.com

Ruth Ann Woodley, FSA, MAAA
ruthann@ruarkonline.com

SOA PRESIDENT

Donald J. Segal, FSA, FCA, MAAA, EA
dsegal@soa.org

SOA STAFF CONTACTS

Patrick Gould
Managing Director of Marketing
& Communications
pgould@soa.org

Lisamarie Lukas
Director of Communications
llukas@soa.org

Karen Perry
Publications Manager
kperry@soa.org

Jacque Kirkwood
Senior Communications Associate
jkirkwood@soa.org

Sam Phillips
Magazine Staff Editor
sphillips@soa.org

Erin Pierce
Graphic Designer
epierce@soa.org

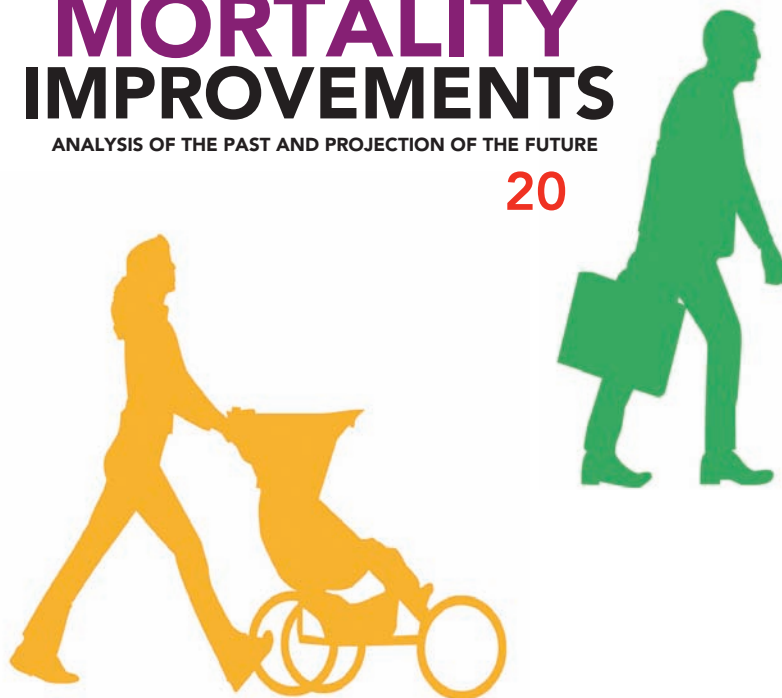
August/September 2011
issue of *The Actuary*



MORTALITY IMPROVEMENTS

ANALYSIS OF THE PAST AND PROJECTION OF THE FUTURE

20



Product group from well-managed forests, controlled sources and recycled wood or fiber
www.fsc.org Cert no. XXX-XXX-XXX
© 1996 Forest Stewardship Council

PONDERING RESPONSIBILITY

BY RUTH ANN WOODLEY

OVER THE LAST YEAR OR TWO, there has been a noticeable increase in the number of U.S. news topics that involve actuarial thinking. As a health actuary, I found it almost surreal to have my business in the news daily during the Obama-care saga and quite regularly since then. The long-term health of Social Security and related retirement concerns have long been a public issue, and became more prominent lately as government and union plans face huge funding challenges and the threat of bankruptcy. The currently hot question of how to reduce our federal deficit requires at least an understanding of the government's basic finances, and even this topic has actuarial aspects for long-term projections.

At first it was a nice feeling to see actuaries at the center of the action! But then I started noticing a problem. Much, or even most of the debate is conducted without any understanding of the actuarial concepts involved. It's no surprise when "man on the street" quotes display misconceptions about anti-selection; people not concerned with this in their daily lives wouldn't normally have reason to know what that

is. But I have seen more than one quote from prominent consumer advocates based on faulty statements about basic risk management, when their position should require them to know better. And these usually aren't corrected by the media, who also need to know better in order to cover the stories fully.

The most common topic where this catches my attention is the issue of pre-existing conditions. There seem to be many people holding the position that insurers should not be allowed to apply pre-existing conditions, and that individuals should not be required to have health insurance. It is possible to hold that position in an intellectually honest and correct way, but only if you also acknowledge the tremendous cost increase such a system would create, a fact I have never heard mentioned from any of those advocates.

In another example, a recent AP-GfK poll showed that almost half of the U.S. population believes the federal budget can be balanced without touching Medicare or Social Security. It seems

likely that those people are not familiar with these budget facts (from the Center on Budget & Policy Priorities):

1. Medicare and Social Security together made up 40 percent (and growing) of federal spending in 2010, and
2. 37 percent of total federal spending would have to be cut to balance the budget for that year.

I'm sure almost no one polled even realized that their opinion implies cutting all remaining spending by 60 percent, and by even more in future years. To make that problem worse, none of the reporting I read on the poll pointed out these facts.

Our background as actuaries makes us especially suited to understand and think about these issues. Does that mean we have a responsibility to help society become better informed too, rather than just complaining about the media or feeling frustrated with people who are less familiar with these numbers?

Our profession does a great job working with policy makers and legislators to educate them. An example of how that type of work can have an impact comes from my first example. During his campaign for the Democratic nomination, President Obama opposed an insurance mandate. Once he became president and was pushing health care reform, he changed that position as he had more information on its implications for pre-existing conditions. Regardless of whether you are for or against the reform legislation, it is more sustainable actuarially to have the mandate included than to have banned pre-existing condition exclusions without a mandate.

But laws are passed or defeated by politicians, and those politicians' actions are based on their reading of the public will as much as or more than on their understanding of the issues. The country would benefit from having the general public better understand these concepts too, so that popular opinion would be grounded in that understanding. Lately I've been wondering if there are ways that our profession could expand our work towards that end. Here are some ideas I have, presented mainly in the hope that they will encourage others to ponder this subject also:

1. "Think globally, act locally" sometimes seems like a trite slogan, but at least it's better than doing nothing. We can talk individually to friends, family and non-actuarial colleagues about these issues. It seems like the easiest step, but I admit it's something I myself rarely

do. Sitting pool-side with my friends, do I really want to keep thinking about this stuff, or just laugh about "Modern Family"? At Thanksgiving, should I risk starting a heavy political debate with my in-laws? But lately I have resolved to do more to make sure my immediate circle is making informed decisions. I hope to model my conversations on examples like the American Academy of Actuaries' effort to present facts and information, not necessarily positions.

2. The next step up from here might be looking for opportunities to speak to local groups like business leaders and political parties. Maybe there are opportunities for local actuarial clubs to have the kinds of conversations I'm trying to have individually, but on a slightly larger scale and targeting opinion influencers.
3. Up another level, should actuaries as a profession communicate more with the public? The profession has done some good work speaking in print and television media, both local and national, particularly on Social Security and retirement issues. The SOA has also stepped up efforts in this direction of late, getting results in increased coverage of our work and research. But my concern is that this material is not broad and basic enough. If the general public doesn't understand some basic insurance concepts, I'm not sure they can put our insights about problems with

the CLASS Act or the cost of medical errors into a useful perspective.



Obviously even **Ruth Ann Woodley** the simplest insurance fundamentals are not ideas we can just slap on a billboard or put in ads in *People* magazine. But is there a way we can spread some of that knowledge to a more general audience?

Educating the public is clearly a challenge, especially for a profession that is still working hard to bring its communication skills up to the level of its technical expertise. I certainly don't have answers on if or how to go about it, just the growing realization that it's something we need to support. So I'd love to hear whether others agree, along with further ideas or suggestions. **A**

Ruth Ann Woodley, FSA, MAAA, is vice president of Ruark Consulting LLC. She can be contacted at ruthann@ruarkonline.com.

Letter From The President

DOUBLE DUTY

BY DONALD J. SEGAL

IN MY COLUMN for this issue, I discuss two topics: the importance of voting for a bylaws change that streamlines the U.S. actuarial profession's disciplinary process and what the SOA is doing to better serve actuarial clubs.

WHY ARE THE PROPOSED CHANGES TO THE JOINT DISCIPLINARY PROCESS IMPORTANT?

Since the beginning of my term as president, I have been speaking about the need for changes to the U.S. actuarial profession's joint disciplinary process.

With elections opening just days from now, on August 8, I thought it would be a good time to highlight these important proposed changes.

To briefly summarize, for members of multiple U.S. organizations, the current disciplinary process has an abundance of hearings, each of which can lead to a different outcome.

We believe that the proposed changes will result in a more streamlined, consistent discipline and appeals process. It will reduce the number of hearings and

help create more consistency regarding outcomes. It will also reduce the demand on our volunteers.

I have spoken so much about it because it just makes sense. **My main concern is that the proposal may not pass because we may not get the required 25 percent of fellows to vote on the bylaws amendment. We will need 2/3 of that 25 percent to vote in favor of the amendment to pass the amendment.**

Each U.S.-based actuarial organization is proposing these changes to their bylaws. This means that if you are a member of three U.S.-based organizations, you will be asked to vote on the bylaws change three times, once for each organization.

When I have spoken about this proposal at actuarial clubs, the response has been overwhelmingly favorable. **People agree that a streamlined process makes sense. Also, the most common sentiment I hear from those I talk to is that "it will never pertain to me." Even though it will likely never pertain to you, I encourage you to vote for this important step forward for our profession when the polls open August 8.**

ACTUARIAL CLUBS: YOU ARE US!

I just mentioned actuarial clubs and I want to say a few additional words about them now. I've spoken to a number of clubs throughout my term, and this is one of the duties I have enjoyed the most!

Actuarial clubs are a great way to network with colleagues in your geographical area. Clubs are also an important source of professional development, especially for those with financial constraints on professional development and travel to meetings.

I often say with regard to clubs: "You are us!" As an important part of our member services structure, the SOA is looking at ways to better assist clubs in the services they provide to their members. Helping clubs benefits the actuarial profession as a whole. To do this, we have formed an Actuarial Clubs Advisory Group to brainstorm ideas and prioritize the services the SOA could provide that would be the most valuable to clubs. The group consists of representatives from eight clubs (five in the United States and three in Canada). From these ideas, the SOA is developing a "menu" of services that the SOA can provide to clubs.



Donald J. Segal

We are in the process of implementing some of the ideas the advisory group has come up with, which includes adapting presentations from SOA meetings for use at actuarial club events, assistance in marketing club events, identifying speakers, creating a means of encouraging communication between clubs, and providing a single point of contact at the SOA to assist with actuarial club needs. We hope to have most, if not all, of these ideas implemented by fall.

There is another great resource for actuarial clubs—SOA meetings! The SOA

holds four large meetings per year: the Life & Annuity Symposium, the Health Meeting, the Valuation Actuary Symposium, and the Annual Meeting. Most of the time, each of these meetings is held in a different city, which can be a great opportunity for a local club. Speakers already in town for an SOA meeting may also be willing to speak at a local actuarial club. In addition, there may be opportunities for clubs to partner with the SOA on networking events during meetings. For example, the Chicago Actuarial Association will be participating in a joint networking event with two sections at this year's Annual Meeting.

If you are an officer of an actuarial club, be watching for communications from the SOA on the services that will be available. I hope to see more clubs take advantage of these resources in the near future! **A**

Donald J. Segal, FSA, FCA, MAAA, EA, is president of the Society of Actuaries. He can be contacted at dsegal@soa.org.



THE ONLINE
DIRECTORY



IS NOW MOBILE!
m.ActuarialDirectory.org

Living to 100: ■ Growing Societal Impact and BY ANNA RAPPAPORT Challenges

There are many changes taking place due to increasingly aging populations. The **LIVING TO 100 SYMPOSIUM** took an in-depth look at the majority of them.

HAVE HAD THE PLEASURE of participating in all four Society of Actuaries' (SOA) Living to 100 longevity research symposia as an author, panelist and moderator, and as the keynoter for the first Living to 100 symposium.

Throughout the symposia series and in all of the monographs, there has been a bal-

ance of papers devoted to understanding and developing data, comparing mortality results across groups and geographies, mortality modeling and the implications of living longer. The changes for many societies—as people live to higher ages—will be profound, and unprecedented. Life spans are gradually increasing. When the impact of longer life is combined with the impact of changing birth

rates at different times and immigration patterns, many societies will be much older. There will be far more people at older ages and the balance between young and old will change, creating challenges and opportunities for all. This is not limited to the United States and Canada, but is a global issue affecting many developed countries around the world.

A large word cloud in the shape of a downward-pointing arrow. The words are arranged to form the outline and fill of the arrow. The most prominent words, shown in larger sizes, include "when", "why", "what", "who", "how", "which", "where", and "whom". The colors of the words range from light blue to a vibrant yellow-green. The words are scattered throughout the arrow's shape, with some appearing multiple times.

A smaller word cloud in the shape of a downward-pointing arrow, mirroring the style of the larger one. It features the same set of question words: "when", "why", "what", "who", "how", "which", "where", and "whom". The words are densely packed within the arrow's outline, with "which" and "why" being particularly noticeable. The color palette is consistent with the larger word cloud, using shades of blue and yellow-green.

who?

WHO IS AFFECTED BY THESE CHANGES AND HOW?

Virtually everyone in the affected societies will be impacted, including governments and taxpayers, business—both as provider of services and as an employer—families and individuals, and health care structures. Some of the key changes will include:

- The fabric and make up of communities will change.
- The demand for health care will increase and the need for long-term care services will increase even more.
- People will need to work to higher ages, and employers will need to change their practices to help facilitate this.
- Public budgets will be stressed by the needs for health care and other services to support the very old.
- Personal financial planning and management will be required to reflect the changes in life spans and needs.

This article looks at issues by stakeholder, points to some of the papers presented at the 2011 Living to 100 Symposium, and leaves us with ideas about some of the big questions facing society.

IMPLICATIONS FOR THE PUBLIC AT LARGE

Key areas of focus for the public at large are the health care system and social insurance programs. These systems are stressed in many countries. Health care issues include the availability of services, costs and standards for delivering health care. The Living to 100 panel, “Will There Be Enough Doctors, Nurses and Hospitals for our Aging Population?” offered insights into this vital question. The discussion focused on the increasing health care needs in developed countries as populations age, the situation in several

different countries, and the challenges related to the training of medical professionals.

A paper by N.V. Subramanyan, “A Study of the Emerging Health Conditions among the Aged in India and the Sufficiency of Medical Framework and Health Insurance,” provided a view from a developing country. Subramanyan studies the current inadequacy of a health care infrastructure in India. As India gradually shifts from an agrarian economy to an industrialized economy, there has been an increased prevalence of diabetes mellitus and cardiovascular disease among both the elderly and nonelderly populations. Besides meeting the health care demands of an increasing number of elderly, India must also meet the needs of the large nonelderly population which has increased at a greater pace than the elderly. The paper examines some of the government and private measures for solving the problem among the elderly and others and identifies opportunities for insurers to address the situation.

As with most of the issues related to population aging, there are areas of similar concern but they are addressed differently. Social insurance programs are a major area of focus, and the key issues include level of benefits, under what conditions they are paid, and how they are financed. The 2011 Living to 100 Symposium (and previous Living to 100 programs as well) were very fortunate to have participation from the senior actuaries of important social insurance systems. At the 2011 Living to 100 conference, there were presentations focusing on the mortality projection

methods and the results they produced for social security systems in the United States, Canada and Denmark.

As these social security presentations showed, mortality changes are a key contributor to changing costs and actuarial balance in the systems. To better understand mortality trends, papers were also presented comparing mortality of various countries such as the United States, Canada and the United Kingdom.

Long-term care is a major issue moving forward, and many countries that have well-developed social benefit systems lack widespread systems for financing long-term care. Long-term care is often provided by families, but family support is less likely to be available in the future. Private insurance is used in the United States, but relatively few people have purchased it. Medicaid, a public system for those with virtually no assets and limited income, finances nearly half of long-term care in the United States. Social benefits cover long-term care needs in other countries. Doug Andrews, FSA, FCIA, presented the paper, “Is Long-Term Care Social Insurance Affordable in Developed Countries?” He raises key questions about options and public vs. private systems. Andrews concludes that aspects of the long-term care risk are better managed through social insurance programs rather than private insurance. He also raises the questions of whether such social insurance is affordable, looks at the different solutions and approaches taken in Canada, Germany, Japan, the United Kingdom, and the United States, and concludes that it is. He

what?

also discusses changes in patterns of care and social structures including the potential for more care in the home, and innovative integrated senior communities. He prefers mandatory social insurance vs. voluntary private insurance since the risk is so important and affects so many people. He also points out that voluntary insurance has low take-up rates and challenges related to selection.

The provision and financing of long-term care is a major area for change, in the United States and internationally. Other papers provide insights into long-term care issues, and the SOA's Long-Term Care Insurance Section provides ongoing examination of the challenges related to long-term care provision and financing. The resources from Living to 100 help us focus on some of the questions:

- Will there be an organized system to finance long-term care and what will it be?
- What will be the role of the public vs. the private sector?
- How much should younger people be called on to support the older population?
- What is the right way to deliver care?

Population aging will make it important that these issues be addressed in many different countries, and that solutions work for people in a range of circumstances.

One of the biggest societal issues related to population aging is the appropriate retirement age and accommodating new and different patterns of retirement.

Increasingly, some sort of work on a more limited basis is part of retirement. The panel, "The New Retirement: Phased Retirement and Phases of Retirement—Adapting to Longer Lives and Different Support Systems," was moderated by Robert Powell, editor of *Retirement Weekly*. The three panelists were

all experts on retirement and phased retirees. Each had left a full-time job and was combining a limited work schedule in a different way with doing more of what they wanted to do. They discussed the challenges and opportunities presented by moving gradually into retirement. Institutional supports are limited and individuals often need to find their own way. For many people, capabilities during retirement change, and adapting later on to re-

THERE ARE MANY OPPORTUNITIES TO PROVIDE SERVICES TO AN AGING POPULATION.

duced capabilities is a key part of the overall retirement picture. The SOA research report on the "Phases of Retirement" offers insight into that matter.

An issue that came up several times during the 2011 Living to 100 Symposium—and seemed to be a new area of focus—was the disparities and differences in mortality experience by ethnic group. This was particularly interesting to me since the 2010 ERISA Advisory Council to the U.S. Department of Labor focused on gender and racial disparities as one of its three study topics. Jay Olshansky reported on research undertaken for the MacArthur Foundation that shows extremely large disparities by racial and economic groups, pointing out that

where?

the societal issues vary by group. People concerned about Social Security change have also focused on this is-

sue, pointing out that black males have a much lower life expectancy than white males. Other papers presented at the conference such as the one by Rob Brown, FSA, FCIA, ACAS, HonFIA, and Steven Prus, Ph.D., also examined racial differences. In the United States, insurance companies and employee benefit plans are

not allowed to discriminate by race and do not keep data by race, but this is an issue of increasing social concern.

IMPLICATIONS FOR BUSINESS

For some businesses, such as health care, financial services, housing, and travel, for example, the aging society will have a significant impact on their customer base and the products and services they provide. There

are many opportunities to provide services to an aging population. These business implications are beyond the scope of the Living to 100 initiative, but actuaries can be of assistance to businesses as they seek to understand these implications.

Nearly all businesses are affected as employers by the aging society. Those offering retirement benefits and longer term employment are particularly affected. A paper by Mary Nell Billings and me focuses on the implications for business resulting from people living longer. Some of the key issues to be considered include implications for the workforce, the need to develop better approaches and work options for working with older workers, raising retirement ages, helping employees deal with individual responsibility and retirement needs, and rising health care costs.

Other papers focus on the retirement system, such as the one from FSA Beverly Orth titled, "How to Survive Living to 100: Ways to Improve the U.S. Retirement System." Other papers focused on the retirement system in Japan and Canada.

The symposium did not include much focus on the implications for financial service companies, but indeed there are many. Annuity products will become more costly as people live longer, and appropriate projected mortality tables are needed for pricing and reserving. One of the sessions at the 2011 Living to 100 Symposium focused

when?

on a comparison of annuity mortality between the United Kingdom, Canada and the United States. Another paper, "Mortality Improvement in the USA: Analysis, Projections and Extreme," by Joseph Lu, member of the Institute of Actuaries, and Wun Wong, Ph.D., compared Scale AA from the 1994 Group Annuity Mortality Table to historical and future U.S. population mortality trends. The analysis raised questions about the adequacy of Scale AA for the use in the valuation of annuity liabilities. Long-term care is a risk that is not planned for well. One of the big questions is whether the financing should be through private insurance or government programs. Combination long-term care/annuity products should have a lot of potential for the future.

One of the product ideas that has not had much acceptance to date is the reverse mortgage. Conceptually this is an appealing idea, but the implementations have been relatively expensive. This may be an area for future product development.

Within the financial services industry, mortality is a particularly big concern for reinsurers. Further understanding of its future, as well as its implications, will help them better manage their existing longevity risks and also lead to more innovative products for financial services companies and customers.

IMPLICATIONS FOR INDIVIDUALS

With the decline in defined-benefit plans, individuals are increasingly responsible for their own old age security. SOA research has documented that there are many gaps in what people know about the post retirement period. Many of those who live to very long ages are women, so the challenges of high age are often the challenges of women. My paper, "Living to 100—Risk Management Issues for Individuals with Special Emphasis for Women," provides a broad overview of many of the challenges. It includes a variety of data on what changes with increasing age, builds on SOA research on the post retirement period and includes recommendations for the future.

WHAT ARE THE BIG QUESTIONS FOR SOCIETY?

There are a number of important societal questions, and the answers will vary by country. Many will not be known for quite a while:

- What will the age distribution of our population be and how is it changing?
- Will people be healthy longer as they live longer? What can be done to improve health?
- When is it reasonable for people to retire? What do we mean by retirement?
- How will we provide and pay for health and long-term care?
- What benefits should be provided through social programs? Employers? As an individual responsibility?
- What financial products will support the aging society?

WHAT DOES THIS MEAN TO ACTUARIES?

Social change related to population aging will affect many stakeholders within developed countries, and in some other countries. Prod-

ucts, services, individual planning, and social programs will need to adapt to meet changing needs. Projections of the population change, together with quantitative analysis and modeling of the impacts of the changes, will be important in defining new directions. Actuaries have much to do within their traditional roles to address the issues resulting from aging populations, and in addition, there is much potential for actuaries to work with new stakeholders on new problems.

Within traditional roles, there should continue to be a lot of work and areas for innovation in health and long-term care systems, as well as retirement financing. While much of this work will be in the financial services and health care sectors, new players and patterns of risk sharing may emerge. Population aging will affect virtually all governments and a great many businesses. Demographics will be an increasingly important issue in overall social planning. The insights that actuaries have may enable them to work with these entities to address different challenges and broader issues including longer term planning.

CLOSING THOUGHTS

Change as a result of increasing life spans is already underway and will continue. This article just begins to touch the surface on the many issues resulting from increasing aging populations. For a more in-depth account of some of these implications, I encourage you to read the papers presented at the 2011 Living to 100 Symposium published in a monograph available at www.soa.org/livingto100monographs as well as <http://livingto100.soa.org>.

Clearly, much remains to be done in addressing the needs and challenges of an aging society. This is a great opportunity for the actuarial profession to be part of the solution. ▣

Anna Rappaport, FSA, MAAA, EA, is owner of Anna Rappaport Consulting. She can be reached at anna@annarappaport.com.

why?

SOA 2011 Elections!

Let your voice be heard!

The SOA 2011 election is just around the corner! Let SOA.org/elections be your resource for all information pertaining to the 2011 elections. **Online voting** for the election will be open 24 hours a day from August 8 until the polls close on September 2 at noon CDT time. **Any elections questions** can be sent to elections@soa.org.

This Year:

Fellows should be sure to vote on the proposed Bylaws amendment concerning [the Joint Discipline proposal](#). For more information, visit SOA.org.

Visit SOA.org/elections to:

Get to Know the President-Elect, Vice President and Elected Board Member Candidates

- Read candidate biographies
- Watch President-Elect candidates' video-recorded campaign speeches
- Take part in the Interactive Session with the President-Elect candidates, 11 a.m.– noon EDT, July 26
- Review the candidates' individual answers to a strategic question

See a Separate Ballot for Section Council Positions*

- Read Section Council candidates' biographies
- Review Section Council candidates' response to a leadership question

Let your voice be heard! Please vote!



*It is important to remember that Section Council elections have different constituencies from the election for Board of Directors. Section members must be current with their 2011 dues by June 30, 2011, in order to vote in this election. For the Joint Risk Management Section, CIA and CAS section members have voting privileges.



DON'T LET THIS HAPPEN TO YOU!

BY SAM PHILLIPS

"How much longer!?" "Is this EVER going to end?" "I am so bored!" Don't let these be the reactions you get to your presentation. The following article will give you the tips you need to MAKE YOUR TALK A WINNER!

WHETHER IT BE A PRESENTATION amongst peers or to the board of directors, you want to make sure you wow them with your message. *The Actuary* polled some of the SOA's top presenters to get their trade secrets. Here's what Dale Hall, FSA, CERA, MAAA; Stuart Klugman, FSA, CERA; Patricia Matson, FSA, MAAA; and David Wylde, FSA, MAAA, had to say.

Q: What makes for a good actuarial presentation—whether it be at an SOA meeting or before the board of one's company?

People receive messages best in a variety of ways and good presentations tend to have a mix of several senses. Some audience members hear the spoken message and need nothing more, but others need to have visual cues or additional audio cues to receive it well.

Dale Hall

Interesting/timely topic, enough time to adequately cover the topic and good audio/visual accompaniment are important.

David Wylde

Knowing your audience and targeting the

discussion based on that. So if it is for an SOA meeting you have a technical audience, but they may not know the particular topic so you need to consider that. If it is the board, you need to be careful about how you describe technical actuarial concepts, but they probably have the basic background on the issue so you should focus on exactly what they need to know and what you expect of them.

Patricia Matson

If voluntary, like at an SOA meeting, the members of the audience leave believing that the time they invested in listening was worthwhile. If involuntary (like the board example) the audience has understood the messages you wanted delivered.

Stuart Klugman

Q: How do you prepare to give a presentation?

Many times, my presentation is from an article I wrote. I will first make an outline from the paper, and then use the outline as a basis for PowerPoint slides.


David Wylde

I typically research the topic a bit, just to make sure I can answer detailed questions. I also try to anticipate what the questions will be so I can cover them well.

Patricia Matson

I prepare the appropriate amount of notes needed. Technical presentations need more notes as I want to be sure all the facts and formulas are at hand. I review the notes, but rarely

Talk Tips

Ready to hone your presentation skills? Check out the **SOA'S VOLUNTEER RESOURCE CENTER**, where you'll find tips on content development and using PowerPoints, as well as presenter and moderator tips. Just go to <http://bit.ly/joOSMK> or use the QR code provided here. 

practice the actual speech (the only exception is when there is a strict and rather short time limit and several points need to be made).

Stuart Klugman

Q: What have you done in the past that has “worked”?

An interesting/timely topic that is presented in an appropriate amount of time will overcome even the dullest of speakers.

If at all possible, I try to get away from the podium and interact with the audience directly. Physically going to the screen to highlight a specific slide point (rather than using a laser pointer) also works for me.

David Wylde

I talk to the audience, not to my notes or the screen.

Stuart Klugman

Q: What have you done in the past that has been “not as successful”?

Not enough practice and not having the faintest idea what’s on the next slide. Not a good recipe for success ...

Dale Hall

In general, people enjoy “war stories” much more than factual commentary. So if you can add real-life examples or interesting stories as you are explaining specific topics it tends to engage the audience more.

Patricia Matson

Trying to get across too many points in too little time rarely works.

Stuart Klugman

Q: What should or should not be included in slides in a presentation?

Use high level bullet points only; charts/graphs should not be too busy; don’t just read the slides; color contrast, etc. should be easy to read by the audience; and I don’t like to get too “cute” with graphics/icons/clip art.

David Wylde

They should not be too detailed—you want people to be listening to you, not trying to decipher words or complicated graphics to the point that it is distracting. But on the flip side, just plain bullets on a page, slide after slide, is too boring.

Patricia Matson

Put the minimal amount of information possible on the slide. Only include more if it is absolutely necessary to point to it during the presentation.

Stuart Klugman

Q: How do you ensure your message will be received? Through audience participation? Handouts? Break-out activities? Ice breakers?

I will sometimes start off with a joke or something from the news to get everyone’s attention.

Break-out activities are not usually appropriate for SOA presentations.

I use the rule I learned in high school speech class: “Tell ‘em what you’re going to tell ‘em, tell ‘em, and then tell ‘em what you told ‘em.”

David Wylde

I think real-life examples and war stories make the message much more real and memorable than plain factual summaries.

Patricia Matson

You can connect with an audience even without their participation. Handouts should not distract from your message (which will happen if there is so much information on them that they read ahead instead of paying attention). I am not big on ice-breakers, such as a joke at the beginning. Any humor I inject is related to the subject at hand. I leave story and joke telling to the professionals.

Stuart Klugman

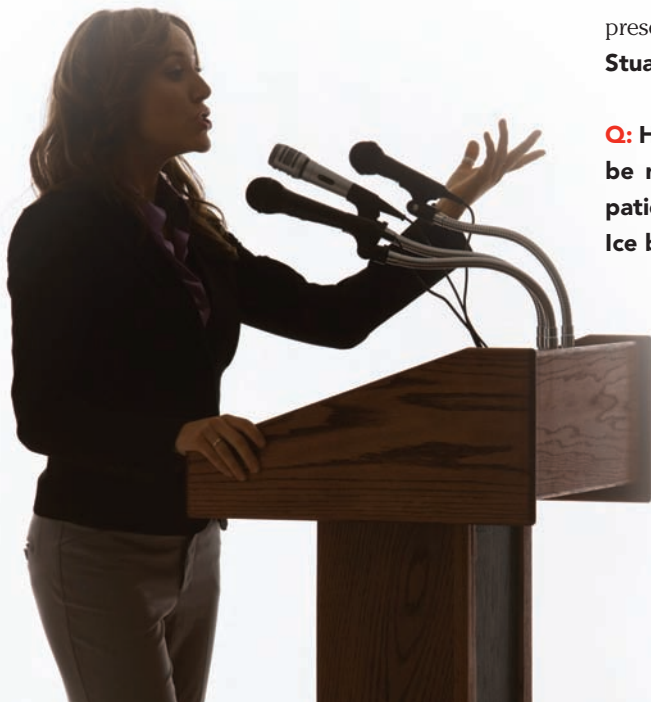
Q: How do you keep your audience engaged? Alert? Interested?

I try to use a theory that the audience needs to be smiling back at the speaker at least once every four to five minutes. If you fail on that, the audience can quickly lose interest. Even on the dullest of topics, speakers need to find ways to inject some level of humor, even if self-deprecating, or even just a reference to a current event or topic. You don’t necessarily have to have people rolling in the aisles, but they seem to stay more in tune if they know there’s a chance something entertaining or current is just around the corner. I always try to make sure I am checking current events or finding what is trending prior to giving a presentation.

Dale Hall

Sometimes you just can’t. Once again, an interesting/timely topic will help greatly in keeping the audience engaged.

David Wylde



Change is key. So making sure that there are changes in speakers every 30 minutes or so, switching topics, switching the types of graphics, adding animations, war stories, moving around the room, using flip charts, etc. Standing in the same place with slides that look alike and talking in a monotone voice is sure to put everyone to sleep!

Patricia Matson

I had better be excited about my subject or no one else will be.

Stuart Klugman

Q: When you are a member of the audience, what do you look for in a presenter? What makes you stay at the meeting? Seminar?

An interesting/timely topic with good slides will keep the audience engaged.

David Wylde

Continuous movement/change/interest and use of war stories. And, of course, a topic that is relevant and understandable and applicable to my day-to-day work.

Patricia Matson

I have to be getting information I can use. If further work is required on my part, I have to at least believe that I can get it done.

Stuart Klugman

Q: How do you rate the following: Rapport with the audience? Enthusiasm about the topic? Examples and stories?

(1) Enthusiasm about the topic: I have received a lot of good feedback regarding my “energy level” while presenting.

(2) Examples: Depending upon the topic, a simplified illustration can greatly improve the audience’s understanding.

(3) Rapport: Either you have it, or you don’t. I’m not sure this is something you can easily acquire or learn.

David Wylde

They are all critical. But enthusiasm makes it easier to accomplish the other two. At the Fellowship Admissions Course, the following Emerson quote is offered: “Nothing great was ever achieved without enthusiasm.”

Stuart Klugman

Q: How do you overcome stage fright?

Practice, practice, practice.

David Wylde

Despite presenting quite often, I still almost always get nervous. Planning a funny comment or something a bit more personal and nontechnical to start can be calming, and then things are more casual and less stressful from there. I don’t imagine people in their underwear!

Patricia Matson

I’ve given more than 4,000 presentations and I still get nervous. But once the first words come out everything starts to flow.

Stuart Klugman 

Sam Phillips is a communications associate at the Society of Actuaries. He can be contacted at sphillips@soa.org.

Imageoftheactuary.org
stand out.



Looking for
**Tips, Tools &
Resources**

... to help
you be a
good
mentor?

www.Imageoftheactuary.org



MORTALITY IMPROVEMENTS

ANALYSIS OF THE PAST AND PROJECTION OF THE FUTURE



WITH IMPROVED GLOBAL MORTALITY CONFIRMED, THE QUESTION BECOMES, "WHAT ADJUSTMENTS DO ACTUARIES NEED TO MAKE?" THIS ARTICLE ANSWERS THAT AND OTHER QUESTIONS. BY MARIANNE PURUSHOTHAM

OVER THE LAST CENTURY, general population mortality has improved significantly and on a global basis. As this trend appears likely to continue at least over the near term, mortality improvements are expected to continue to impact the viability of national social programs worldwide as well as the financial stability of insurance programs, including pension plans and annuities.

As a result of the current trends in mortality improvement, insurers have begun to incorporate longer term assumptions regarding mortality improvement in both pricing and financial projections, resulting in greater scrutiny from both an audit and regulatory perspective.

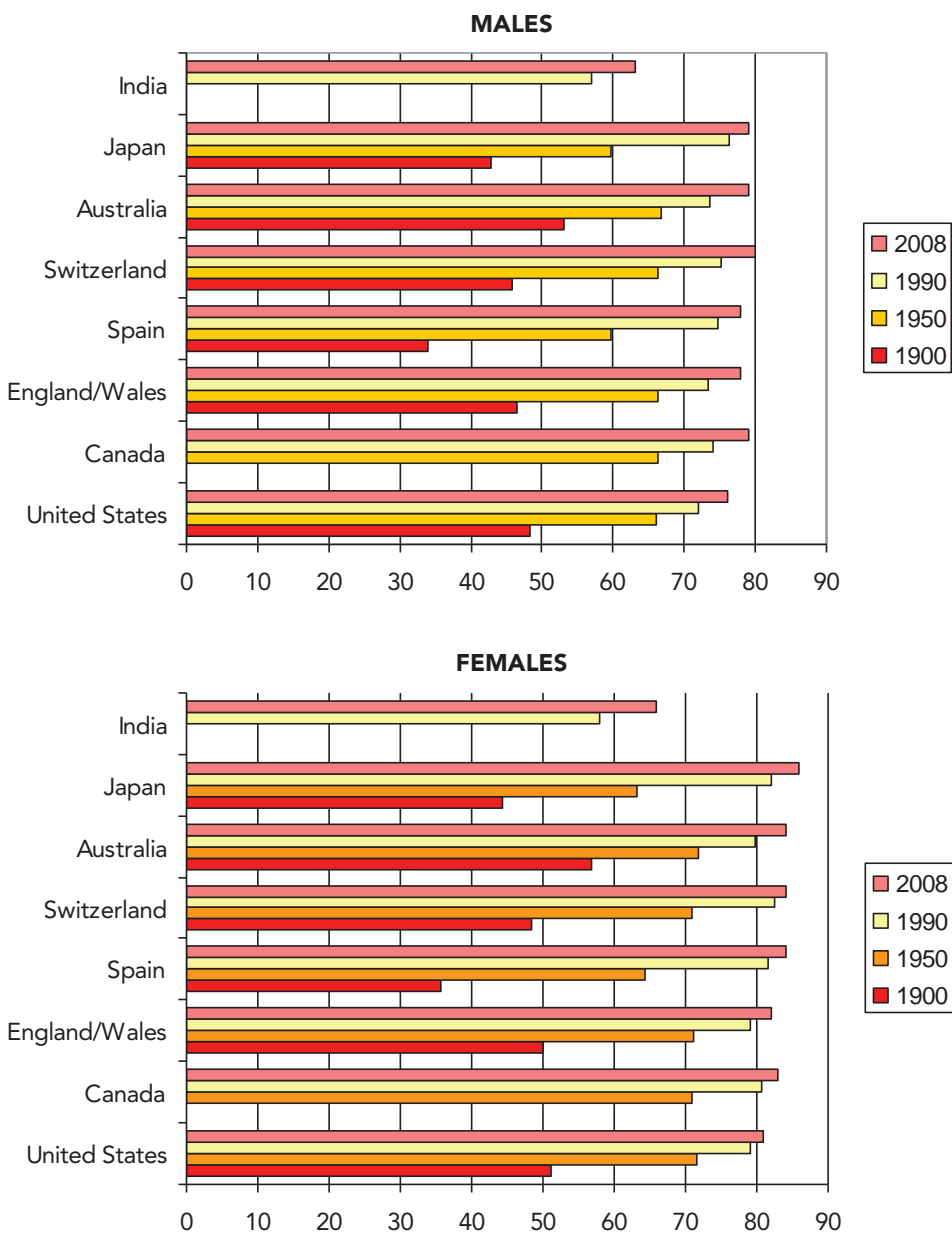
To assist actuaries in developing mortality improvement assumptions for various product lines including individual annuities, pension, life insurance and long-term care insurance, the Society of Actuaries (SOA) commissioned a research project to compile both historical data regarding mortality improvement experience as well as information regarding techniques for modeling future assumptions. This article provides a general overview of information included in that report.

MORTALITY IMPROVEMENT EXPERIENCE

Population Data

From 1900 to 1950, enormous strides were made in improving mortality rates on a global basis, particularly at ages under 35. This was largely due to an expanded focus on public

Population Life Expectancy at Birth by Country



Source: U.S. Census Bureau Estimates from Various Databases, *American Journal of Clinical Nutrition*, Changes in Life Expectancy 1900-1990, published 1992 and World Health Organization, Statistics 2010.

health initiatives in many countries that led to the introduction of large-scale immunization programs, penicillin and sulfate drugs, and other disease eradication methods.

Since 1950, both in the United States and across the globe, mortality improvement and resulting increases in life expectancy have continued, but at a slower pace. The most recent data from the World Health Organization indicates that male and female life expectan-

tality between specific ages. Here we discuss improvements in mortality during key life stages for four of the more developed countries (United States, Canada, United Kingdom and Australia) during the period 1940 to 2007.

The following trends are noted:

- **Infants** (the rate of mortality between ages 0 and 1): Rates of mortality improvement for infants have slowed in

UNDERSTANDING THE SOURCES OF PAST IMPROVEMENTS IN MORTALITY CAN BE VALUABLE IN THE PROCESS OF DEVELOPING ASSUMPTIONS REGARDING THE FUTURE.

cies at birth are nearing 80 and 85 respectively for many developed nations.

FACTORS AFFECTING POPULATION MORTALITY IMPROVEMENT LEVELS

Understanding the sources of past improvements in mortality can be valuable in the process of developing assumptions regarding the future. Therefore, the SOA report also examined the correlation between mortality improvement levels and various demographic factors.

Age

Between 1940 and 2006, improvements in mortality were strong for most age groups, including infants, children, young adults, the middle ages, retirement and old age.

One tool in the analysis of changes in life expectancy at birth is the examination of changes in rates of mor-

recent years in all four countries, from highs averaging between 3- and 5-percent per year between 1940 and 1980 to rates generally less than 2 percent during 2000 to 2007.

- **Children** (the rate of mortality between ages 1 and 20): Greater mortality improvements were exhibited by this group during the period 1940 to 1960 (between 3- and 8-percent per year) as children and young adults benefited from the impact of stronger public health initiatives. Improvements also appear to have picked up between 1980 and 2000, possibly due to a decrease in the number of deaths from accident or injury.
- **Young Adults** (the rate of mortality between ages 20 and 35): Rates of mortality improvement for young adults are also driven to a large extent by lower rates of accident and injury. With a few exceptions, this age demographic has

experienced a decline in improvement levels during the current decade. The most notable exception to this trend is Australia, where young adults exhibited a notable increase in mortality improvement (nearly 4.9 percent per year for males and 3.1 percent per year for females) during the period 2000 to 2007.

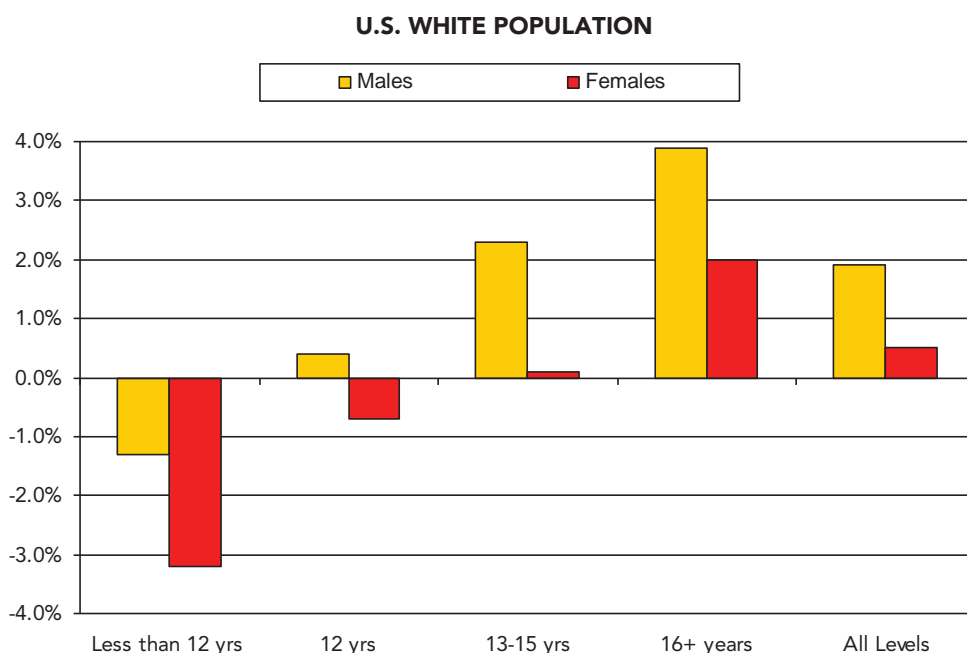
- **Middle Ages** (the rate of mortality between the ages of 35 and 65): Individuals aged 35 to 65 have experienced moderate but steady levels of improvement in mortality since 1960 (generally between 0.5 and 2.5 percent per year).
- **Retirement Ages** (the rate of mortality between the ages of 65 and 85): Individuals between ages 65 and 85 have exhibited lower levels of improvement, with the largest increases occurring between 2000 and 2007 (between 1- and 2-percent per year).
- **Old Age** (the rate of mortality between the ages of 85 and 100): Since 1940, the population age 85 and older has exhibited little or no improvement and even some deterioration in mortality experience. This observation has led some to theorize that in the future, mortality improvements are likely to be focused at the older ages where fewer strides have been made to date. And, there is evidence for increasing improvement levels over the current decade for the oldest ages.

Gender

In the United States and Canada between 1980 and 2000, male improvements outpaced female improvements by an average of 0.5 percent per year. In the United Kingdom, males experienced greater



Differences in Mortality Improvement by Level of Education Achieved



Source: Widening of Socioeconomic Inequalities in U.S. Death Rates, 1993 to 2001, Ahmedin Jemal, Elizabeth Ward, Robert N. Anderson, Taylor Murray, Michael J. Thun, published 2008.

levels of improvement for ages over 45 while females experienced greater improvements for ages under 45. And during the most recent experience period examined, 2000 to 2007, the pattern of gender differences has become blurred for all three countries. As a result, both the September 2010 Canadian Institute of Actuaries report¹ recommending mortality improvement levels for individual life insurance and annuity products and the most recent U.S. Social Security Administration Technical Panel report² assume that differences in mortality improvement levels by gender will be eliminated over the next few decades.

Geographic Region

There is data to support some variation in mortality improvement experience by geographic region for the United States, Canada and the United Kingdom, with the lowest levels of improvement generally seen in the more rural and lower-income areas of the countries. These differences were generally small for the experience periods and countries examined.

Socioeconomic Status

The results of several population-based studies support the view that socioeconomic factors such as wealth, income level, highest attained level of education, and marital

status are highly correlated with mortality and mortality improvement experience. The wealthier, more highly educated and married populations tend to exhibit lower levels of mortality and also appear to have experienced larger levels of mortality improvement. As an example, for the U.S. white male population ages 25 to 64, the results of a 2008 study of experience between 1993 and 2001 shows that mortality improvements for those with 16 or more years of education were approximately twice those of the population as a whole.

LIFE INSURANCE DATA

For life insurance in particular, actuaries have less consistent data on which to base their views regarding future mortality improvement levels, especially over the longer term. Care needs to be taken in interpreting insured data as changes in select mortality over time may be impacted more by changes in the industry including shifts in the target market, distribution methods, underwriting processes or risk classification structures than true improvements in life insured mortality. Data regarding improvements in ultimate mortality may be more reliable since a major factor, the impact of underwriting changes over time, should be greatly dampened.

Utilizing the results of regular periodic studies of individual life insurance mortality experience produced by national actuarial organizations over the past several decades, changes in mortality rates for life insureds can be calculated for the select and ultimate period for the United States, Canada and the United Kingdom.

Focusing on ultimate period mortality, we note the following trends in improvements versus the general population results.

United States

For the experience period between 1978 and 2006, the pattern of mortality improvement by age and gender is quite similar between the insured population in the ultimate period and the general population. Insureds and the general population exhibited similar age patterns of mortality, with insured mortality improvements slightly greater than the general population on an amount basis and slightly lower than the general population on a number of policies basis.

Canada

In Canada between 1972 and 2007, life insureds in the ultimate period also experienced levels of mortality improvement similar to or greater than the population in general at the typical insurance-buying ages (35 to 84) on an amount basis.

United Kingdom

In the United Kingdom between 1980 and 2000, greater improvement levels were seen for permanent assureds (whole life and endowments policies) than the population in general for males, while female permanent assureds exhibited rates of mortality improvement more similar to the population in general. Note that in the United Kingdom, mortality data is only available on a number of policies basis at the current time.

population mortality along with some element of professional judgment. However, in today's environment where mortality improvement assumptions can have a material impact on financial results, actuaries are beginning to focus greater attention on the analysis and review of past experience, the factors that have influenced that experience, and more robust methods for developing future assumptions.

The academic community has made important strides in advancing modeling and projection techniques for mortality and mortality improvements over the past several decades and a brief overview of these techniques follows.

First, mortality projection models generally fall into one of the following basic categories.

- **Predictive modeling.** A predictive model begins with the identification of a group of factors (predictors) that can influence future results for a given value being estimated, e.g., mortality, mortality improvement or other items of interest. Focusing on life insurance mortality improvement as an example, many of the predictors available for traditional experience analysis (e.g., age, gender, product type, smoker status, risk classification) can be included in a predictive modeling ex-

ercise. There have been multiple and extensive applications of predictive modeling in the property-casualty insurance industry for experience analysis, pricing, underwriting, claims management and strategic planning purposes. Through application of predictive modeling, the impact of each of these factors on mortality or mortality improvement is identified, and a model is developed that estimates future values as well as the probability of a specified outcome (for example, future mortality improvement levels within a specified range) under various conditions.

- **Extrapolative projection techniques.** This category of projection models includes the earliest methods used by actuaries, economists and demographers in setting future mortality improvement assumptions based on the projection of past trends that were identified in the historical data.

A typical extrapolative approach involves fitting a model to actual mortality experience for each individual calendar year in the experience period available. The parameters underlying the models for each calendar year are then plotted to identify significant pat-

MORTALITY IMPROVEMENT PROJECTION TECHNIQUES

Today, insured mortality improvement assumptions are often developed from an extrapolation of past trends in

WANT MORE INFORMATION?

This article is based on the SOA sponsored research paper, "Global Mortality Improvement Experience and Projection Techniques" by Marianne Purushotham, Emil Valdez, and Huijing Wu. It can be found on the SOA website at:





terns that can aid in the determination of future parameter values for projection of future experience.

Gompertz and Weibull are well-known extrapolative models for mortality projection over time due to their relative simplicity. The Gompertz model, for example, projects mortality as the sum of an attained age dependent component and an attained age independent component. The Lee-Carter model and its many variations have also been used extensively on a global basis, and Lee-Carter is one of the methods employed by the Social Security Administration in the United States for modeling future levels of mortality improvement. Lee-Carter is a stochastic mortality projection model based on the identification of both the impact of attained age and calendar year.

- **Relational or targeting methods.** The basic approach for relational projection methods is to develop a function F that relates mortality in a specific population under study to mortality for a reference population. The development of the function F is typically dependent on testing the fit of the relationship between the population being modeled and the reference population.

Reference populations could include long-term historical averages for a specified country (e.g., low mortality countries such as Sweden and Japan are often used in this capacity). Another approach is to assume that future mortality improvements trend from their current levels to a long-term target assumption such as 2- to 2.5-percent per decade.

ment of disease that may have led to the death, including the impact of comorbidities. In this modeling context, better estimates of future mortality can be produced by considering the progression of disease as well as potential interactions between different existing morbidities. However, disease-based models are quite complex, typically involving multi-state transitions and

A LIMITATION OF BOTH ALL-CAUSE AND CAUSE-SPECIFIC MORTALITY MODELS IS THAT ANY DATA IS RESTRICTED TO THE DEATH ITSELF.

- **Cause-of-death specific models.** To date, the more common practice has been to apply one of the models discussed earlier to all-cause insured or population mortality experience to develop projections of future results. However, it has also been argued that future all-cause mortality experience can only be reasonably understood if trends in specific causes of death and future likely changes are understood. In theory, any of the models discussed here can be applied to the mortality experience for specified cause-of-death groupings and then combined in some manner across all the groupings to produce aggregate assumptions. For these models, limiting the number of major groupings by cause of death has been important in maintaining a sufficient level of credibility.
- **Disease-based models.** A limitation of both all-cause and cause-specific mortality models is that any data is restricted to the death itself. Therefore, there is no consideration of the potential impact of the timing and develop-

corresponding probabilities of transition that require detailed, longitudinal data regarding the treatment and progression of various diseases. This type of information has been obtained in the United Kingdom through access to patient health databases supporting public health care programs. However, in the United States, privacy laws make this type of data difficult, if not impossible, to obtain and therefore disease-based models have not been used extensively to date.

Bearing in mind the current limitations of insured data as compared to population data as well as the advantages and disadvantages of the various modeling approaches in current use, an industry level effort of the following form could produce valuable information to aid actuaries in their efforts to monitor trends and set assumptions regarding the future.

1. Construct and continually refresh a detailed database of information regarding the past and current impact on mortality of various key factors including lifestyle



trends and behaviors, past and recent medical advances, and demographic/societal changes utilizing both insurance industry data and other outside sources. This information will allow for a better understanding of the potential impact of changes in these areas on current and future projections.

A partial list of factors that are expected to impact future mortality improvement levels includes the following:

- Medical advances—Collect data regarding new advances in health care that are expected to impact mortality improvements (newly introduced diagnostic tests, treatments, pharmaceuticals). Consider the potential reduction in mortality and the population that will be impacted and the period of time over which the reduction is expected to emerge.
- Lifestyle changes—Track levels of smoking (number of new smokers and rates of quitting in adulthood), alcohol intake, and levels of obesity and expected impact on mortality.

- Changes in levels of disease incidence including emerging new diseases—Collect data regarding new diseases and disease types as well as growth or decline in current disease diagnoses.
- Access to medical care—Follow the development of the health care reform initiative in order to gauge its potential impact on future mortality and mortality improvement levels.

2. Select a sound modeling and projection methodology, preferably one that provides a reasonable fit to recent historical experience. In determining the experience basis for model parameter development, due consideration will need to be given to balancing the need for a sufficient number of years to reduce “noise” in the average annual rates with the need for the model to reflect what has occurred in the recent past.
3. Modify the initial results from application of the projection technique developed in 2 (above) by applying actuarial and other expert judgment regarding future expectations as to changes in the factors discussed in 1 (page 25) and their impact.

Some areas that are being closely watched by academicians and the medical community include obesity levels, smoking habits, and genetic indicators. And there is some evidence to support potential slowdowns in mortality improvement in the United States over the next several decades as a result of health impacts of increased obesity levels.

Mortality improvement now has a material impact on financial results in many areas of the

global economy and the insurance industry and will require greater attention by actuaries. This approach allows for the application of a rigorous modeling methodology in the development of a baseline improvement assumption, while retaining the element of professional judgment that forms the basis of current approaches and allows for incorporation of reasoned views regarding the uncertain future. **A**

Marianne C. Purushotham, FSA, MAAA, is a senior consultant at Towers Watson. She can be contacted at marianne.purushotham@towerwatson.com.

ENDNOTES:

- ¹ “Mortality Improvement Research Paper,” Canadian Institute of Actuaries, September 2010. <http://www.actuaries.ca/members/publications/2010/210065e.pdf>
- ² “Technical Panel Report on Assumptions and Methods (2007),” Report to the Social Security Advisory Board, Washington D.C., October 2007. http://www.ssab.gov/documents/2007_TPAM_REPORT_FINAL_copy.PDF

Introducing the SOA Competency Framework Self-Assessment Tool



CompetencyFRAMEWORK
DESIGN *your future.*

Customize your professional development:

- Assess Your Skills
- Balance Your Talents
- Align Your Objectives with SOA Offerings



Start now by visiting CFAT.soa.org

Actuaries
Risk is Opportunity.®

PLAGIARISM UNPLUGGED

BY LESLIE FAUSER

JOHN LENNON AND GEORGE HARRISON

were accused of it. John Fogerty of Creedence Clearwater Revival fame was accused of plagiarizing himself. Even Nemo, the good-natured clown fish made popular by Walt Disney Pictures, swam his way into a sea of controversy when a French children's author claimed the fish was hatched from his idea bank. More serious accusations of plagiarism have been levied against research scientists, have shaken the reputation of world-renowned universities and have surfaced in scientific journals.

As evidenced by the cases above, plagiarism takes many forms and its presence is more prolific than ever due to the ease with which information can be shared. Transfer and theft of knowledge is effortless and seamless; it spans borders, countries, languages and cultures. Looking for a company to help you plagiarize your term paper? Google can tell you where to find one in 0.19 seconds. Plagiarism at your fingertips. Why not take the risk? Proving the origin of intellectual property is often easier said than done. The Society of Actuaries (SOA) is no stranger to risk and has firmly established that when it comes to plagiarism risk is definitely not opportunity.

PLAGIARISM IN E-LEARNING

While it is highly unlikely plagiarism occur-

The Value of e-Learning Assessments

By Brett A. Roush

TRADITIONAL EXAMS—timed, proctored, multiple choice, and written answer—will always have a key role in the SOA's Education process. They highlight a candidate's ability to process large amounts of detailed information quickly. However, how often when doing your job are you forbidden from looking up an equation you once knew or from using a computer? Technology now enables us to expand our assessment approach.

The e-Learning assessments allow the SOA to ask questions that could not be posed on the traditional exams, such as requiring extensive spreadsheet manipulation and having answers submitted in the form of a final work product that demonstrates effective communication skills. With this added flexibility realistic scenarios can be developed within the assessment. They provide candidates with opportunities to demonstrate both the knowledge and skills they have learned. Using these complex, open-ended assessments allows candidates to fully demonstrate their understanding of how the module concepts should be applied.

Despite the relatively small risk of plagiarism the e-Learning assessment method presents, this risk is outweighed by the opportunity to ensure our candidates are better prepared for successful actuarial careers. **A**

Brett A. Roush, FSA, MAAA, is an assessment general officer for e-Learning.



Leslie Fausher

rences in the SOA’s e-Learning system will receive the same notoriety as the cases above, they are by no means less important—in fact they are more important. Plagiarism affects candidates, members and employers. When plagiarism begins to spread, organizational and professional reputations are affected. Processes, effectiveness and learning delivery methods are questioned. The method by which a member earned a credential is challenged. Ever so slightly, the value of the ASA and FSA designations begins to decline.

At the time of this writing, the overall historical incidence rate of plagiarism on e-Learning submissions was approximately 1 percent. But that number is dropping. The vast majority of e-Learning candidates adhere to the e-Learning Terms and Conditions by submitting their own work. While collaborative study and preparation is allowed and encouraged on the Fundamentals of Actuarial Practice (FAP) End-of-Module exercises and Final Assessment and on the Decision Making and Communication (DMAC) module, copying from another submission or model solution is strictly prohibited. Candidates who violate the e-Learning Terms and Conditions will be disciplined.

WHY DOES PLAGIARISM OCCUR?

If the average SOA candidate or member

was asked to make a list of where they receive pressure to pass SOA exams or assessments it may look something like this: family, friends, colleagues, employers, professors, themselves, the very culture in which they live and work ... the list would likely go on. These pressures are not to be understated. The volume of material one is required to learn to pass the rigorous SOA examinations may tempt even the most ethical actuary who spends his nights studying life contingencies while his family sleeps. However, succumbing to the temptation of plagiarism must not be considered an isolated incident confined to a dimly lit office in the middle of the night. It carries a much wider and far-reaching risk—a risk that left unaddressed could easily threaten an entire profession. Uploading a plagiarized assessment infects not only the e-Learning system but also the very profession of which a candidate is working so hard to join.

TYPES OF PLAGIARISM

The most common cases of plagiarism involve two candidates who plagiarize or collude on their assessments, resulting in word-for-word matches. Several sophisticated software tools are used to check for the existence of such copying in e-Learning submissions. Improper collaboration and collusion are considered forms of plagia-

rism and are also prohibited by the SOA. Failing to cite sources can also be considered an act of plagiarism. If a candidate copies material from a published source, a citation makes the origin clear.

It is also an infraction for a candidate to lose control of his or her work product. For example, a candidate prints out his assessment to a shared work printer. His colleague walks by and secretly makes a copy of it for later use. “Later use” may be six weeks, six months or a year down the road. Despite the lag between the two submission dates, at the point of discovery the SOA will also contact and may also discipline the first candidate who failed to exercise reasonable control of his work. Maintaining control of work files, printouts and storage devices is critical in order to avoid being involved in a discipline matter a year later, and having to explain or demonstrate that he did not willingly share his work with another candidate.

CONSEQUENCES

At first glance, plagiarism may seem an attractive shortcut to achieving one’s professional goals and being awarded a long-awaited bonus or pay increase. However, penalties resulting from plagiarizing can

PLAGIARISM	CITATIONS	COLLABORATION	COLLUSION
<ul style="list-style-type: none"> To steal and pass off as one’s own To use without crediting the source Always wrong 	<ul style="list-style-type: none"> Providing a reference to the source of the copied material Important to do 	<ul style="list-style-type: none"> To work jointly with others or together especially in an intellectual endeavor Sometimes OK 	<ul style="list-style-type: none"> A secret agreement or cooperation for an illegal or deceitful purpose Always wrong

SOA Leadership Talks about Honesty and Integrity

S. MICHAEL MCLAUGHLIN, FSA, CERA, FIA, MAAA

President of the SOA from 2009–2010

"As the science of enterprise risk management develops, one of the greatest risks identified is reputation risk. What's that? It's the concern that a trusted brand will lose its luster. With the loss of reputation, the brand becomes less valuable or even worthless.

"A respected professor told me, the FSA, ASA and CERA credentials are clearly superior to the competition. Why? Because they are backed up by a disciplinary process! This says to the public, 'We hold our members accountable.'"

CECIL BYKERK, FSA, MAAA, FCA, HonFIA

President of the SOA from 2008–2009

"Actuaries have so much to offer with respect to social and business issues, but because we are selling ourselves or our advice rather than a visible, tangible product, our word must be above reproach."

DANIEL P. CASSIDY, FSA, CERA, EA, FCA, MAAA

Education General Chairperson of the SOA from 2009–2010

"In my role as general chair, I reviewed all cases of [Education-related] discipline and approved any penalties. While it is a role I did not envy, it is necessary to ensure that employers and the public, and other actuaries, continue to value the SOA credential."

prove costly—costly to other candidates, members and employers who have invested time and money in a candidate's actuarial program.

In 2010, seven associates of the Society of Actuaries (ASAs) had their designations revoked because they were found to have plagiarized on their assessments. As stated in the Code of Conduct for Candidates, candidates should "act honestly, with integrity and competence." Failure to do so can have devastating results for the candidates who have to explain to their employer that they did not really "earn" associateship and can no longer use the ASA designation. In 2010 a total of 146 candidates entered the discipline process: 93 of those cases involved plagiarism on the FAP and FSA End-of-Module exercises and 46 candidates were disciplined for improperly collaborating on the Interim and Final Assessments. About one-third of the candidates appealed the discipline

imposed, but less than 25 percent of those were successful in demonstrating that they had not violated the e-Learning rules.

When weighing the risks of plagiarism, a candidate should consider which conversation is more difficult to have with his or her employer: explaining a failed Final Assessment or admitting plagiarism of a colleague's paper and a revoked designation. While both discussions are no doubt difficult and emotional, employers are left with few options if the latter conversation is held.

CONCLUSION

The number of e-Learning plagiarism occurrences continues to decrease, no doubt because of the SOA's ongoing efforts to detect and discipline such conduct and its efforts to educate candidates on how to avoid practices that can result in discipline. The SOA's efforts in this area will remain strong and steadfast. Why, then, is the

SOA spending a tremendous amount of time, money and staff resources combating plagiarism for such a small percentage of candidates? Because the anti-plagiarism efforts put forth by the SOA are not driven by numbers but by the SOA's commitment to candidates, members and employers. The actuarial profession is one of high ethical standards, professionalism, honesty and integrity and the SOA will continue to protect the value of the designation on behalf of all members. **A**

Leslie Fausher is an e-Learning manager at Society of Actuaries. She can be contacted at lfausher@soa.org.

HIT A HOME RUN!



When it comes to stats, The Actuarial Foundation hits grand slams!

- Each year, Expect the Unexpected with Math® materials reach 140,000 middle school teachers and a potential 3.5 million kids.
- *Building Your Future* financial literacy curriculum materials have reached more than 5,000 teachers, benefitting hundreds of thousands of teens.
- To date, we have awarded scholarships to more than 150 students and 51% of our 1996-2008 recipients have achieved an actuarial designation.
- More than 40 research projects have raised the profession's intellectual capital.

It's Your Turn at Bat

Step up to the plate and help us drive in more runs to increase the number of students who benefit from our classroom materials, reach more college students with scholarships, expand the impact of your actuarial expertise to the public and grow the knowledge exchange of the profession.

To volunteer, advocate and donate, visit www.ActuarialFoundation.org today!



Preparing for tomorrow's possibilities® through education

475 N. Martingale Road, Suite 600 • Schaumburg, IL 60173-2226
phone: 847.706.3535 • web: www.ActuarialFoundation.org

A COMMUNICATIONS FEAST

COMMUNICATING WITH YOU has definitely been a priority this year. Like any association, the SOA wants to build stronger ties with members and candidates.

Keeping open lines of communication will help us strengthen our profession and allow us to help one another with the issues we face on a daily basis. We want to provide a variety of ways that you can engage with the SOA in general. If you have questions, concerns, ideas, or just want to network or start a conversation, there are a number of ways to do this.

This year we are focusing on social media tools so they become a more visible way of sharing information and starting a dialogue among members. To that end we launched our official SOA Twitter account on June 1. You can find us at @SOActuaries, and we invite you to follow us there! Twitter is an easy way to follow what your colleagues and the media are saying about the industries we work in and topics relevant to our work like health care, insurance, retirement, etc.


Another way to interact with your colleagues in the profession is through the SOA group on LinkedIn. It has more than 4,000 members, and I encourage you to join the group if you haven't already. Several SOA sections also have their own groups on LinkedIn.

We're also posting articles, news, updates and videos more regularly on the SOA blog, Speaking of Actuaries (blog.soa.org). Recent posts have run the gamut from retirement savings, to actuaries in the news, and we're even starting to post more video featuring members of the profession.

Later this year the SOA is planning to launch an online community for candidates on Facebook. We know that our candidates are heavily involved in social media, so this will allow candidates to engage in a dialogue and get regular updates from the SOA.

It seems like there's an app for everything and everyone, including actuaries! The SOA introduced its first mobile app for the 2011 Health Meeting, which included schedules, session descriptions, speaker bios, maps, and local information. You could even take notes on sessions within the app. These apps are designed to increase interaction among attendees. We're going to continue to do this for our large meetings, so your feedback is appreciated. Next up is our Valuation Actuary Symposium.

And finally, you can now access our Online Membership Directory via your smartphone. You now have access to over 29,000 actuaries in the palm of your hand. On your smartphone, just go to actuarialdirectory.org. The Mobile Directory allows you to search the directory by name or company, initiate a phone call with the touch of a finger, generate an email from your smartphone, add an actuary to your phone's contact list and even generate a map to locate an actuary.

We'd also love to hear your feedback on what types of apps for actuaries would make your life easier. Please send us your ideas to membercomms@soa.org. 

— SOA Executive Director Greg Heidrich

THE ACTUARIAL PROFESSION IN THE NEWS

The SOA is focused on raising awareness of actuaries in the media. Recent efforts have been successful. Here are just a few examples:

7 Ways to Stay Ahead of Inflation in Retirement

U.S. News quotes Steve Vernon about the impact of inflation on retirement. For more information, visit money.usnews.com, search term Steve Vernon or use the QR code.



Honestly, What's the Best Policy

The Wall Street Journal reports on life insurance lapse rates. For more information, visit www.wsj.com, search term Leslie Scism or use the QR code.



SOA: "Working Longer" May Not Work

Key findings from SOA's report, "The Impact of the Economy on Retirement Risks" are reported. For more information, visit www.lifeandhealthinsurance-news.com, search term SOA or use the QR code.



Get Ready for Social Security, Medicare Meltdowns

FOX 29 News reports on SOA report about retirement. For more information, visit www.soa.org, search term FOX 29 News or use the QR code.



Why Every Company Needs a Skeptic


Huffington Post features a byline by member Max Rudolph. For more information, visit www.huffingtonpost.com, search term Max Rudolph or use the QR code.



More Retirees with Mortgage Debt May Complicate Financial Planning

Members Cheryl Krueger and Steve Vernon are quoted about mortgage debt and retirement planning. For more information, visit www.fa-mag.com, search term Steve Vernon or use the QR code.



View all of these articles by going to www.soa.org/newsroom and clicking on the Profession In The News link. 

PROFESSIONAL DEVELOPMENT OPPORTUNITIES

INTERNATIONAL FINANCIAL REPORTING FOR INSURERS: IFRS AND U.S. GAAP

Aug. 28-31
InterContinental Grand Stanford
Hong Kong

MANAGING THE ACTUARIAL FUNCTION AT SMALLER INSURANCE COMPANIES

Sept. 8
Webcast

VALUATION ACTUARY SYMPOSIUM

Sept. 12-13
Orlando, Fla.

PREPARING FOR CHANGE UNDER PBA FOR LIFE PRODUCTS: LIFE COMPANY RESERVES SEMINAR

Sept. 14
Orlando, Fla.

U.S. FEDERAL INCOME TAXATION OF LIFE INSURANCE COMPANIES SEMINAR

Sept. 14-15
Orlando, Fla.

CRITICAL ILLNESS INSURANCE FORUM

Sept. 19-21
Orlando, Fla.

DI & LTC INSURERS' FORUM

Sept. 21-23
Orlando, Fla.

ANNUAL MEETING & EXHIBIT

Oct. 16-19
Chicago, Ill.

View all Professional Development opportunities by visiting www.soa.org and clicking on Event Calendar.

ATTENTION READERS!

If you have an idea for an article you think should appear in *The Actuary*, or a response to something you have read in these pages, tell us about it by sending an email to theactuary@soa.org.



Recommended Readings



The following is a list of recommended readings from the contributing editors that they feel will pique your interest and help keep you informed.

From Dave Ingram

“Effective Communications for Actuaries.” A PowerPoint with some helpful hints on presentations and communicating for actuaries. To see the PowerPoint, visit <http://bit.ly/iES27m> or use the QR code.



From Dave Ingram

“Range of Methodologies for Risk and Performance Alignment of Remuneration.” From the Basel folks, a paper on risk adjusted compensation. To read the paper, visit <http://bit.ly/meNAo8> or use the QR code.



From Sue Sames

“The Happiness Advantage: The Seven Principles of Positive Psychology That Fuel Success and Performance at Work,” by Shawn Achor, luncheon speaker at the SOA Health Meeting this year. Although he ran about 15 minutes over, no one left; he was that engaging. To see some of his speech, visit <http://bit.ly/IHZrKe>. For a book review, visit <http://amzn.to/jVb6OO> or use the QR code.



New Feature!

To use the QR codes provided here, you must download a QR reader app to your smartphone. This can be easily done by visiting get.neoreader.com on your smartphone.

E-COURSES

Enterprise Risk Management

This e-course is designed to provide information to actuaries who do not yet regularly practice in enterprise risk management (ERM), but want to know more about it to help expand existing skills or meet professional development requirements.

Financial Reporting

The e-course is designed to introduce you to the basic concepts and terminology necessary to understand financial statements and regulatory capital requirements. While applications and examples are taken from the insurance industry, much of the content is not industry-specific. In addition, while the focus is on Canada and the United States, an important part of the environment in these jurisdictions is the effort to align with international standards.

Investment Strategy

The e-course is designed to provide you with an understanding of the investment theories used to implement the investment process. Throughout this e-course, you will be exposed to case studies from real experiences that illustrate the range of considerations in managing investment portfolios supporting particular liabilities and goals. After completing this module, you should be able to define, design, monitor and modify an overall investment strategy given a client's objectives and constraints. You should also be able to communicate results to the client.

Operational Risk

This e-course is intended to help you learn how to identify, measure and manage operational risk.

For more information, visit www.soa.org, Professional Development, e-Learning. 



SOCIETY OF ACTUARIES

VALUATION ACTUARY

SYMPOSIUM

SEPT. 12-13

ORLANDO, FL

You asked for it and now it's yours. We added a second full day of in-depth discussion and hot networking opportunities.

TAKE YOUR FINANCIAL KNOWLEDGE TO THE NEXT LEVEL.

- Gain insight into principle-based valuation issues.
- Improve your ability to analyze complex situations.
- Enhance your creative problem-solving skills.
- Engage in comprehensive discussion of credibility theory, statutory reserves, equity-indexed products and much more.

Visit www.soa.org/valact for more information.



Actuaries
Risk is Opportunity.®

Disciplinary Notice

NOTICE OF DISCIPLINARY DETERMINATION

JUNE 2011

On February 16, 2011, the Society of Actuaries convened a Discipline Committee to review a matter referred by the Actuarial Board for Counseling and Discipline (“ABCD”). The matter related to the conduct of Robert S. Wagstaff, FSA, as an illustration actuary for a life insurance company during the period 1999 to 2008. The Discipline Committee determined that Mr. Wagstaff should be suspended from the Society of Actuaries for a period of five years due to material violations of certain Precepts¹ under the Code of Professional Conduct.

As an illustration actuary for his employer, Mr. Wagstaff prepared, signed and issued annual certifications that his company’s life illustrations were prepared in accordance with state regulations and in conformity with ASOP 24. During the years at issue, however, he had not performed the underlying tests required to make such certifications, or maintained the documentation to support the certifications as required by ASOP 24. The Discipline Committee determined that this conduct violated Precepts 1 and 3, which state:

- **Precept 1:** An Actuary shall act honestly, with integrity and competence, and in a manner to fulfill the profession’s responsibility to the public and to uphold the reputation of the actuarial profession.
- **Precept 3:** An Actuary shall ensure that Actuarial Services performed by or under the direction of the Actuary satisfy applicable standards of practice.

Because Mr. Wagstaff had not performed the underlying tests required to make the certifications he issued during these years, he misled the state regulators where the certifications were filed, as well as the management, agents and policyholders of his employer. Mr. Wagstaff thereby violated Precept 8, which states:

- **Precept 8:** An Actuary who performs Actuarial Services shall take reasonable steps to ensure that such services are not used to mislead other parties.

All members of the SOA are reminded of their responsibility to follow the Code of Professional Conduct. Members are encouraged to maintain familiarity with the Code and its precepts by regular review and/or participation in webcasts or professionalism sessions offered at various SOA and other actuarial conferences. In addition, in the US, the ABCD is available for counseling on matters related to professional conduct and actuarial practice.

¹ The violations of Precepts 1, 3 and 8 relate to conduct during the period 2001 to 2008. For 1999–2000, the violations relate to the predecessors of these precepts under the Code of Professional Conduct in effect prior to 2001.

JUNE 2011

On February 23, 2011, the Society of Actuaries convened a Discipline Committee to review a matter referred by the Actuarial Board for Counseling and Discipline (“ABCD”). The matter related to the conduct of Thomas M. Tolliver, ASA, and his qualifications for handling matters related to various US qualified pension plans during the period 1999 to 2008.

The Discipline Committee determined that Mr. Tolliver should be expelled from the Society of Actuaries for material violations of certain Precepts under the Code of Professional Conduct.

Precept 1 states, “An Actuary shall act honestly, with integrity and competence, and in a manner to fulfill the profession’s responsibility to the public and to uphold the reputation of the actuarial profession.” Mr. Tolliver violated Precept 1 when he failed to renew his Enrolled Actuary status and then repeatedly misrepresented himself as an Enrolled Actuary in good standing to his employer, his clients, and the Internal Revenue Service.

Precept 2 states, “An Actuary shall perform Actuarial Services only when the Actuary is qualified to do so on the basis of basic and continuing education and experience, and only when the Actuary satisfies applicable qualification standards.” Mr. Tolliver violated Precept 2 by signing Schedules B to IRS Form 5500 for several years during which he was not qualified to do so.

Precept 8 states, “An Actuary who performs Actuarial Services shall take reasonable steps to ensure that such services are not used to mislead other parties.” Mr. Tolliver violated Precept 8 by misleading various parties as he signed statements as an Enrolled Actuary while he was not qualified to do so.

Precept 14 states, “An Actuary shall respond promptly, truthfully, and fully to any request for information by, and cooperate fully with, an appropriate counseling and disciplinary body of the profession in connection with any disciplinary, counseling, or other proceeding of such body relating to the Code. The Actuary’s responsibility to respond shall be subject to applicable restrictions on Confidential Information and those imposed by Law.” Mr. Tolliver violated Precept 14 by failing to respond promptly to the ABCD during its investigation.

The violations of Precepts 1, 2 and 8 relate to conduct during the period 2001 to 2008. For the period 1999 to 2000, the violations relate to Precepts 1, 3 and 9 of the Code of Professional Conduct in effect prior to 2001.

All members of the SOA are reminded of their responsibility to follow the Code of Professional Conduct. Members are encouraged to maintain familiarity with the Code and its precepts by regular review and/or participation in webcasts or professionalism sessions offered at various SOA and other actuarial conferences. In addition, in the US, the ABCD is available for counseling on matters related to professional conduct and actuarial practice.

MAY 2011

On May 27, 2010, the Society of Actuaries convened a Discipline Committee to review a matter referred by the Actuarial Board for Counseling and Discipline (“ABCD”). The matter related to work performed by Jonathan Schwartz, ASA, as a consulting actuary on behalf of certain clients; namely, in preparing certain actuarial communications for his clients which provided estimates of the future cost of proposed legislation affecting public pension obligations.

The Discipline Committee determined to publicly reprimand Mr. Schwartz for material violations of Precepts 1, 3 and 4 of the Code of Professional Conduct. The Committee determined (as did the ABCD) that Mr. Schwartz’s communications with his clients did not satisfy applicable Actuarial Standards of Practice (ASOPs) in that:

SOCIETY OF ACTUARIES

CPD Compliance

The SOA CPD Requirement has a two-year rolling cycle. 2011 is the second year of the 2010-2011 compliance cycle. Be sure to track & earn your 2011 credits so you are ready to attest compliance as of Dec. 31, 2011.

- STEP 1:** Know your CPD compliance path.
- STEP 2:** Track and earn CPD credits.
- STEP 3:** Attest at year-end.

1-2-3

Visit SOA.org/cpd for more information on Continuing Professional Development.

Equity-Based Insurance Guarantees Conference

Nov. 13, 2011

Bridging the Gap: Filling the Black Holes in
VA Risk Management

Nov. 14-15, 2011

Equity-Based Insurance Guarantees
Conference—Chicago, IL

This seminar is designed to give professionals with limited-to-moderate experience an understanding of how to better quantify, monitor and manage the risks underlying the VA and EIA products.

Learn more at www.soa.org.

