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## PUTTING THE "PUBLIC" IN PUBLIC PLAN ACTUARIAL WORK

*By Tia Goss Sawhney*

Last October I began a learning journey into the world of public pensions. At that time I was near the conclusion of a three-year term on the Social Insurance and Public Finance Council. During those three years I had heard much about the dire state of public pension plans, but, as a health actuary, I had not yet gotten directly involved with public pension plan issues. At the end of an October call, however, I suddenly decided to get involved. My motivation extended beyond general actuarial and societal concerns and included personal motivation. I am a participant in an Illinois public pension plan, the State Employees Retirement System (SERS). SERS is one of the most underfunded large public pension plans in the country.

Like many of life's journeys, I started out on my survey of public pension plan information rather overconfidently. I was sure that if I could find the actuarial documents related to my plan and other Illinois public pension plans, I would soon figure out what was going on. After all, I am an actuary with an undergraduate degree in finance from Wharton, and I had no problem passing those long-ago exams, even with respect to pension material. I was wrong. My error was not with respect to my ability to learn the terminology and concepts sufficiently to understand public pension plan issues, but rather with respect to the insufficiency of quality actuarial information within actuarial documents.

This article is about the actuarial information that I did not find and what I would like to find in the future. It is about the actuarial information that is necessary for informed public discourse concerning our public pensions.

I have identified and will discuss four broad areas of insufficiency in these documents: (1) reliance on prescribed methods and assumptions, (2) absence of risk analysis, (3) no

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# LETTER FROM THE EDITOR

*By Jeffery M. Rykhus*

**Dear SI&PF Section,**

We forge ahead in the midst of uncertainty about health care reform, public pensions, Medicare, Medicaid, Social Security and even other, smaller, social insurance programs like flood insurance. I have no idea what the coming year will bring to any of these programs, but I do know that they will be contentious subjects in the media.

It is always challenging to publish a newsletter that covers the breadth of interests of the people in the section and which, at the same time, captures timely ideas that are important to actuaries today. In publishing this newsletter, the contributors and I wish to provoke you to think carefully, to contribute and to comment. To accomplish our goal means, sometimes, enlisting authors who risk publishing before their topics are a settled matter, who don't know whether they will be lauded or pelted with rotten fruit and run out of town. I appreciate the bravery of those authors who publish in this newsletter and who think differently than the norm.

This edition of *In The Public Interest* opens with an article by Tia Goss Sawhney, exhorting us to evaluate the role actuaries play in the public pension crisis. Fast on the heels of the Blue Ribbon Panel report, Tia's article calls for all actuaries to evaluate what actuaries do when working with public pensions and how we may better serve the public. This is a forward-looking topic that demands responses addressing the future. Please respond to me at jrykhus@gmail.com with your comments, if you wish to be included in a follow-up article of reader responses.

Rebecca Owen follows with a beautiful summary of an emerging issue regarding Hepatitis C treatment choices and cost of treatment within the Medicaid world. As she said, it is always difficult to put an article like this to rest, as there is always new information that won't become part of the article.

In "Let's Talk: Interview with an Actuary in the Public Interest," Anna Rappaport details her extensive public service and volunteer work and explains her concept of a life portfolio. Anna has done so much already and there are many different things she is still doing. Her concept of a life portfolio is really quite interesting. You would be extremely well-served to read Anna's article, even if you already know much about her.

The next article, "Forecasting & Futurism Section To Aid In Upcoming Delphi Study," is a short note about the Delphi Study technique coupled with "Land This Plane," a reprinted article from December 2013. It addresses the upcoming SI&PF Delphi Study on Social Security. Thank you, Ben Wolzenski, and thank you to the Forecasting & Futurism Section for working with the SI&PF Section to "land their plane" properly, using the Delphi method to study Social Security reform proposals.

Once again, *Living to 100* has a presence through Kai Kaufhold, from Germany, who summarizes three papers presenting state of the art research from

the most recent *Living to 100* conference. It appears that *Living to 100* will have a continuing, and quite welcome, international presence in this newsletter. So embrace it by turning to the scholarly pages of Kai's article.

For a bit more of that international flavor from north of the border, peruse Émilie Bouchard's article, where she introduces herself and describes the current state of Canadian research.

In our Actuarial Tips And Tricks corner, Greger Vigen writes "A Less Visible Path," where he discusses many of the lesser-known programs of the Affordable Care Act (ACA). Greger also puts together a mean list of resources for those inclined to follow his advice and learn more about the small bits of the ACA.

Finally, for a little light-hearted fun, Ari Halpern, *New York Times* crossword puzzle author, has designed a friendly challenge. This is modest challenge, with another more difficult puzzle on deck for next time. Let me know if you want more puzzles or have anything you wish to submit.

Thanks for trying out all the articles and for participating in my venture to invite comments, action and volunteerism. If you have any time to share your editing or writing skills, email me or SOA staff members Leslie Smith and Meg Weber, at our email addresses from the masthead.

Sincerely,

Jeffery M. Rykhus

Editor, *In The Public Interest*

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# CHAIRPERSON'S CORNER

*By Jeffery M. Rykhus*

**Jeffery M. Rykhus,** FSA, MAAA, is president of Rykhus Consulting, Los Angeles, Calif. He can be contacted at *jrykhus@gmail.com.*

The Social Insurance & Public Finance Section has been doing some exciting things over the last nine months. Our section activity has passed a few high water marks. Since last September, we have held three webinars, two on Social Security, and the other on public pensions. The first webinar ("Social Security: What Is It? What Are the Fundamental Issues? How Should It Be Funded?"), held in September, 2013, brought three past Society of Actuaries presidents together to discuss opposing viewpoints (not necessarily their own) on Social Security. This was reprised at the San Diego annual meeting for a lively session, followed by a probing question-and-answer period, which included comments and discussion with Stephen Goss, chief actuary of the Office of the Actuary for Social Security.

The second webinar was a very well-attended session in March, with Bruce Schobel and 504 attendees, titled "Social Security Benefits – When to Claim and How to Optimize." The detailed post-presentation questions, many of which Bruce answered by e-mail, demonstrated the participants' high level of interest in this subject. If you think that Social Security is a very easy topic, think again. There are many subtle points about which even the most experienced of actuaries may be unaware.

The final of these three webinar sessions will have been held by the time this newsletter is published. We are planning for an informative session on public pensions, covering the results of our first-ever section-sponsored research. If you have any interest in these three webinars, they are recorded under the Professional Development page of the Society of Actuaries' (SOA) website (http://www.soa.org/professional-development/archive/webcast-recordings.aspx).

Another benchmark this year, the culmination of several years of planning and hard work, is the completion of the section research on public pensions. We completed this research around the same time that the Blue Ribbon Panel released its study. We hope to follow up with further research on public pensions. The direction of that research will be decided in the coming months. Look for a link to the section research on the SOA website on both the research page and in our section news.

Last, but certainly not least, I'd like to welcome the 30 new section members that joined us in 2014. I invite them, as well as all section members with a strong interest in any section topics, to join us as friends of the section council and of the sub-committees. Friends of the council can work with this newsletter, plan meeting sessions for the spring health meeting and SOA annual meeting, and plan and execute both webinars and podcasts. Please bring your diverse skills to us and get down to work.

We currently have three strong sub-committees to complement the section council. We have begun a new Health Sub-committee in the Medicare, Medicaid, and health care reform areas, with project areas and foci to be defined. We will keep you posted on these activities as details emerge.

The Social Security Sub-committee, in partnership with the Forecasting and Futurism Section, is executing a Delphi study on Social Security reforms over the next 18 months. The Public Pension Sub-committee is following up their excellent research project with additional public pension research. If you have an interest in public pension issues, please first read both the results of the Blue Ribbon Panel and our own section's research report on the SOA website.

If you have an interest in any of the sub-committees, I welcome you to join in and share your passion for social insurance issues. Contact me as well as section specialist Leslie Smith to express your interest and devote some of your volunteer efforts to the section. I am looking forward to a really strong year, including additional session/webcast planning, interesting newsletters and high volunteerism. Meeting the goal of high member involvement will be contingent on attracting strong volunteers to continue and further expand the work of the section.

standard analysis, and (4) noncompliance with actuarial standards.

It is important to first note that I am going to comment on current areas of insufficiency in the context of actuarial standards that will soon be in effect. The Actuarial Standards Board (ASB) has recently adopted new Actuarial Standards of Practice (ASOPs) for Measuring Pension Obligations and Determining Pension Plan Costs or Contributions (ASOP 4, effective Dec. 31, 2014, henceforth referred to as "the new ASOP 4") and Selection of Economic Assumptions for Measuring Pension Obligations (ASOP 27, effective Sept. 30, 2014). In addition, the ASB is reviewing comments to an exposure draft of Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations (ASOP 35). Also, pension communications are subject to ASOP 41, Actuarial Communications, unless an ASOP 4 requirement conflicts with the pension ASOPs. ASOP 41 was effective May 1, 2011 and is, as of now, not being changed.

While the new standards are somewhat stronger than the current standards, I feel that they are insufficient and will not significantly close the gaps that I have identified in current actuarial work involving public pension plans.

## AREAS OF INSUFFICIENCY

**Reliance on prescribed methods and assumptions.** Prescribed methods and assumptions are methods and assumptions, set by statute, regulation, or other legally binding authority. Actuaries are often called upon to perform calculations using prescribed methods and assumptions. The prescribed methods and assumptions are established by third parties, such as a department of insurance or the Internal Revenue Service (IRS). Prescribed methods and assumptions in the public pension world, however, are often set by first parties, not third parties. The government entities responsible for the plans, plan sponsors, can and do prescribe their own methods and assumptions.

For example, Illinois has a prescribed method for setting actuarial contributions that is not consistent with any standard actuarial method and is referred to as "the Illinois Method."[1] It also, not coincidentally, extends contributions for unfunded liability further out into the future than would be acceptable under standard methods. Sponsor-prescribed methods and assumptions present two challenges. The first is the inherent conflict of interest in letting the plan sponsor set assumptions. The other is the resulting lack of comparability across public plans. In part because of sponsor-prescribed methods and assumptions there is no way to consistently evaluate the financial position of public plans.

Under current actuarial ASOPs an actuary is obliged to comment if a prescribed method or assumption "significantly conflicts" with what an actuary judges would be reasonable. Reasonable is, in turn, defined to encompass a broader range of choices than simply that method or assumption that the actuary would have independently selected. The ambiguity surrounding "significant" creates potential conflicts between the actuary and the plan sponsor concerning the outer bounds of significant conflict, with considerable pressure on the actuary to cave in to demands of plan sponsors. One alternative is for the actuary to avoid the conflict altogether. An actuary can pass on making a judgment by simply stating that he/she was unable to evaluate the reasonableness of the method or assumption. If, in the end, the actuary concludes that the method or assumption is unreasonable, a comment to that effect is sufficient to fulfill his/her actuarial obligations; there is no need for the actuary to perform alternative calculations with a reasonable method or assumptions.

Recognizing the inherent conflict of sponsoring entity prescribing methods and assumptions, the new ASOP 4 redefines prescribed methods and assumptions so that methods and assumptions set by any political entity of the plan sponsor are no longer defined as "prescribed" but as "set by another party." The impact of this definition change, however, is minimal. A qualitative comment is still sufficient with respect to methods

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While a principal may request a risk analysis or an actuary may volunteer one, the SOPs never require the public pension plan actuary to perform a quantitative risk analysis.

and assumptions that are significantly unreasonable, and the actuary can still absolve him/herself of the responsibility in making such a comment, if doing so could require a "substantial amount of additional work beyond the scope of the assignment." Therefore, if the sponsor does not request that the actuary examine the method/assumptions and substantially more, perhaps unpaid, work is required, the actuary is not obligated to examine methods and assumptions that are "set by another party" for reasonableness.

Finally, under the current and new ASOP 4, a single calculation based on one method and a single set of deterministic assumptions, often set by an inherently conflicted entity, is sufficient. I feel that regardless of who sets the method and assumptions, and the reasonableness thereof, a single set of assumptions for an analysis of a benefit stream extending decades into the future is problematic. This brings us to the next gap, the absence of risk analysis.

**Absence of risk analysis.** Our profession prides itself on being the experts in financial risk analysis. My SOA shirt says "Risk is Opportunity." I was, therefore, surprised by the absence of risk analysis in the pension reports that I examined, even with respect to clearly stressed plans with liabilities valued in the billions of dollars. A single calculation, using deterministic assumptions with respect to benefit streams extending decades into the future, should not be sufficient, especially for plans with liabilities measured in billions of dollars.

While a principal may request a risk analysis or an actuary may volunteer one, the ASOPs never require the public pension plan actuary to perform a quantitative risk analysis. Under the ASOPs, a single methodology, along with a single set of assumptions and the resulting point estimates, are sufficient, even when the methodology and assumptions are prescribed by the plan sponsor.

When an actuary discloses that he/she feels that the assumptions are unreasonable or that the contribution methodology is inconsistent with the plan accumulating adequate assets to make benefit payments when due, the actuary only has to state his/her opinion to that effect. The actuary does not have to, subsequently, perform calculations using any alternative methodology or assumptions. Even the analysis leading up to the disclosure may be nonquantitative—the actuary is instructed to form his/her opinion "based on professional judgment."[2]

The new ASOP 4 contains sections that explicitly absolve the actuary of risk analysis. For example, the first word of the section with respect to volatility is "if."

> *3.16 Volatility—If the scope of the actuary's assignment includes an analysis of the potential range of future pension obligations, periodic costs, actuarially determined contributions, or funded status, the actuary should*

*consider sources of volatility that, in the actuary's professional judgment, are significant.*

In two other sections this ASOP explicitly instructs the actuary to assume that all actuarial assumptions will be realized and contributions will be made when due.[3]

The requirements of ASOP 4 stand in contrast to other ASOPs. ASOP 7, Analysis of Life, Health, or Property/Casualty Insurer Cash Flows, provides the standards for cash flow and sensitivity testing that the National Association of Insurance Commissioners (NAIC) requires for insurance companies. ASOP 32, Social Insurance, specifically states that the actuary "should perform an analysis of the sensitivity of the program's cost or financing method under reasonable, alternative scenarios that are different from expected experience" with respect to social insurance programs. ASOP 32 goes on to require an actuary who reports on the financial adequacy of a statutory mechanism for setting the level of financing for a social insurance program to base his/her opinion on the testing of a range of assumptions.

As a result of lack of regulatory oversight and ASOPs, public pensions are exempt from the risk analysis required for insurance company retirement annuities and Social Security program benefits. (I initially wanted to believe that public pension plans were covered under the umbrella of social insurance. However, while ASOP 32 explicitly includes the Social Security program under its social insurance definition, it explicitly excludes public pensions.)

**No standard analysis content**. Whereas an actuary has to comply with actuarial standards in performing and communicating the analysis, the actuary is, generally, only obligated to perform the analysis that his/her principal requests. This has two impacts.

The first impact is that some actuarial reports are incredibly scant. For example, the state of Illinois mandates that municipal fire and police plans have an actuary annually calculate the plan's actuarial liability and required contribution for that year. Actuaries hired by the municipalities do just that. No attempt is made to provide other pertinent information, even as little as an estimate of next year's required contribution! Yet the municipal fire and police reports are, nonetheless, labeled "Annual Actuarial Valuation Report."

The second impact is that the contents of actuarial valuation reports are noncomparable. There are no actuarial or any other standards that define the components of a public pension plan actuarial valuation report, let alone the specific content within the components. Each report is a unique product of the principal and the actuary. Information that, logically, might be included in an actuarial valuation report may or may not be found elsewhere, such as in the comprehensive annual financial report, accounting statements, accounting and actuarial audit reports, legislative documents, or within reports available only by Freedom of Information Act requests.

It is, therefore, impossible (SOA volunteers and many others have tried) to systematically collect information across public pension plans and across taxing districts, or even within the multi-layered mosaic of public plans that may be associated with a single taxing district.

**Noncompliance with actuarial standards**. Whereas so far I have been noting where our standards fall short, I also need to observe that not all actuaries meet even these standards. Some appear to try, but fall somewhat short in some regard or another. That's rather human and our discipline process makes allowances for such situations. While such situations are regrettable, they are not particularly concerning. There are two other situations, however, that are concerning.

One situation is where the actuary falls substantially and systematically short of standards, including on an ongoing basis. Based on my re-

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As a result of lack of regulatory oversight and ASOPs, public pensions are exempt from the risk analysis required for insurance company retirement annuities and Social Security program benefits.

Whereas in theory our precepts and ASOPs oblige us to meet the needs of "the public," the "intended audience," "other party," and "intended user," it is the duty to the principal that seems to dominate.

view of pension work and from what I hear from pension actuaries, these are usually small-firm consulting actuaries, serving smaller plans as larger firms often have review processes. Systematically poor actuarial work reflects poorly on all actuaries.

The other situation occurs when an actuary, who is otherwise competent, deliberately chooses to ignore a standard or selects a highly favorable interpretation of a standard in order to satisfy the political aims of his/her principal. Based on my review of pension work and from what I hear from pension actuaries, these may well be actuaries working for national firms and serving large public pension plans. I have heard the word "prostitute" used with respect to such actuaries. The mere perception that plan sponsors can buy a favorable actuarial analysis reflects poorly on all actuaries.

I believe that in both situations actuaries fail to fully comply, in part, because they feel that they can get away with it. The Actuarial Board for Counseling and Discipline (ABCD) seldom recommends public action against noncompliant actuaries and, even then, it is up to the actuary's actuarial organization(s) to take the action. Until then, all ABCD action is confidential. The American Academy of Actuaries has taken public action only 27 times in the last 38 years across all actuarial disciplines.[4] No profession is as good as this disciplinary record indicates!

## IMPLICATIONS

The end effect of methods and assumptions set by plan sponsors, an absence of risk analysis, narrowly defined and nonstandardized valuation content, and, sometimes, poor or manipulative actuarial work is a paucity of information to inform the societal discourse on public pensions. Our society needs informed discourse.

On behalf of our society and profession, we can and should demand better of ourselves. The following is what I recommend.

## RECOMMENDATIONS

**Define the public as the principal.** Whereas in theory our precepts and ASOPs oblige us to meet the needs of "the public" (CPC, Precept 1), the "intended audience" (CPC, Precept 4), "other party" (CPC, Precept 8), and "intended user" (ASOP 41), it is the duty to the principal that seems to dominate. While, overall, I believe that we have given too much dominance to duty to principal, with respect to public pensions I believe that we may have misdefined principal. I assert that with respect to public pension work the principal is the public.

Whenever I have asserted this, other actuaries have said: "No, the principal is whose name is on the contract and who pays the bill." Well, not necessarily. First of all, in the world of public contracting, one might be surprised whose name is on the contract and who pays the bill. Second, there is a concept of representation. Governments are the representatives of their constituents.

I will explain using my Illinois SERS plan as an example. The SERS board of trustees hires actuarial consultants to do their valuation and other actuarial work. The consultants, then, may argue that the board of trustees is their principal. An examination of their contract,[5] however, indicates otherwise. Their contract is with the state of Illinois. Whereas they may receive work direction from SERS, the consultants are obliged to serve the interests of the state of Illinois. But who is the state of Illinois? Our state constitution starts with "We, the people …" and, as a state employee, I am continuously told I work for and am accountable to the people. Therefore, I assert that the SERS actuarial consultants also work for and are accountable to the people.

Our actuarial standards and discipline process with respect to public pension plan work should, first and foremost, serve the public. We need to make that clear.

**Decouple public and private pension plan ASOPs.** As I have engaged in my pension learning, I have heard again and again from pension actuaries that private and public pensions are very different. Actuaries doing private pension plan work have to comply with a variety of very precise requirements, set by third parties (ERISA and the IRS requirements, among others). While private pension plan actuaries may not need more actuarial oversight or requirements, public pension plans need more oversight. So, I propose that we decouple private and public pension plan actuarial standards.

**Revise the ASOPs: Act upon the Blue Ribbon Panel recommendations.** The SOA recently released the Blue Ribbon Panel Report on Public Pension Plan Funding.[6] Most of the panel participants were financially sophisticated non-actuaries. The report includes recommendations for improving actuarial analysis and reports, including recommendations with respect to risk analysis. Our intended users have spoken. We need to seriously consider the Blue Ribbon Panel recommendations and incorporate the recommendations, or variants thereof, into our standards.

**Quantify rather than disclose.** In most circumstances only actuaries engaged by plan sponsors have access to the granular plan data and also have the necessary skills and software to perform a quantitative analysis. Quantitative analysis, therefore, enters the public discourse through actuaries. Yet our ASOPs explicitly allow actuaries to make qualitative statements (disclosures) without providing supporting quantification. Furthermore, sometimes even disclosures are not required.

The new ASOP provides poignant examples concerning lack of quantification and disclosure.

1. Although the second exposure draft of the new ASOP 4 had included a requirement for the actuary to make a disclosure if the unfunded actuarial accrued liability is expected to increase at any time during the amortization period (negative amortization), the adopted standard does not require such a disclosure. The actuary is only required to describe the amortization method and disclose if the method is inconsistent with the plan accumulating adequate assets to make benefit payments when due. The actuary does not need to disclose negative amortization or to quantitatively project the amortization.[7]

2. Under the new ASOP 4, while the actuary must describe changes to assumptions and methods,[8] the actuary does not need to, similarly, describe changes to cost or contribution procedures when the changes are prescribed or set by law.[9] Simply stating that there has been a change and citing the law is sufficient. When a description of a change is required, a simple description suffices; the actuary is under no obligation to quantify, or even to generally describe, in terms of direction or magnitude, the impact of such changes.

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3. Likewise under the new ASOP 4, if the cost or contribution procedure uses the actuarial value of assets rather than the market value of assets, the actuary is only obligated to point out that using market value would change the cost or contribution. The actuary is not obligated to quantify the impact of using actuarial value instead of market value.[10]

4. As already discussed, if the actuary discloses his/her opinion that a method or assumption is unreasonable, the actuary does not need to prepare an analysis with reasonable assumptions.

5. While the actuary is required to acknowledge risk, as already discussed, the actuary is under no obligation to quantify risk.

Does anyone doubt that public pension stakeholders need quantitative information with respect to these topics? So why aren't we providing this information?

**Define "actuarial valuation report."** As already discussed, public plan actuarial valuation reports are not comparable with respect to content, methods and assumptions. Therefore, it is impossible to sum across plans to understand the total pension obligation of a taxing district or to compare the relative health of one plan to another. In addition, an actuarial valuation report can be so narrowly defined by sponsors and their actuaries as to not be worthy of the term "report."

I propose that we need a prescribed minimum standard for the content of actuarial valuation reports, and that one component of the content should be the calculation of plan assets, liabilities, normal costs and amortization, using a common set of methods and assumptions. The "common set" would exist to facilitate inter-plan comparability and not preclude plans from adopting other methods and assumptions for purposes of setting contributions or otherwise managing the plans.

I also propose that the minimum standard should include an analysis of how any unfunded liability emerged over time. Such an analysis would reveal to what extent the plan has been impacted by sponsors not making the recommended contributions and to what extent the recommended contributions have been too low as a result of systematic bias in setting assumptions.

**Put more transparency into the ABCD process.** One of the serious shortcomings of the ABCD process is that complaints are kept private unless they result in public discipline. As a result, the actuarial profession doesn't have any opportunity to learn from the vast majority of ABCD complaints that never result in public discipline. I believe that, without necessarily naming names, the ABCD should be compelled to summarize the topic of each complaint and state how the complaint was resolved, even when the complaint is resolved by counseling. This would allow the profession and individual practicing actuaries to learn from the ABCD process and to modify their individual work products and use of actuarial standards accordingly.

**Write commentaries and complaints.** If we believe that public pension plans present societal and professional risks, then all actuaries have a role in reducing that risk. We all need to make our voices and expectations heard within our profession and within the larger public pension discourse. Public plan actuaries and our actuarial institutions, such as the ASB and ABCD, need our help and support. We cannot rely upon public plan actuaries to get the job done all by themselves, as even the highest-caliber public plan actuaries, who want to do their best for our society and profession, are often conflicted with respect to their role and personal economic interests and may choose to maintain the status quo.

Because writing, as of now, is the only way to formally comment on a proposed revision to an ASOP or to file an actuarial complaint, it is one of the best ways to provide help and support.

## CONCLUSION

I urge our profession to act quickly and decisively with respect to these issues. I understand that actuaries did not cause today's public pension plan problems and that, likewise, we are not solely responsible for solving the problems. By not supplying sufficient, quality information, we are, however, complicit in the ongoing problems. Lack of sufficient, quality actuarial information helps maintain a public veneer of viability with respect to public pension plans even as they deteriorate.

Sufficient, quality actuarial information, in contrast, provides the platform for the discourse necessary to address public pension problems. While not every member of the public will be able to comprehend actuarial information, and some would prefer to cling to rhetoric rather than to substitute facts for impressions, there are numerous public pension stakeholders and public representatives who are starved for the information that our profession is not providing.

If our profession does not quickly and firmly address the quantity and quality of actuarial work with respect to public pension plans, then we will be complicit in the potential eventual meltdown of said plans. Pension plan meltdowns have far-reaching economic consequences and one of the inevitable ancillary fallouts is finger pointing, often in the form of massive lawsuits. The fingers will point to our profession.

Let's act. Now.

The opinions expressed are solely the author's. She has produced them on personal time and equipment. She is an actuary and public pension stakeholder, not a pension actuary. You may disagree. As her public pension learning continues, she will have more to say. She may even modify her views over time.

--Tia Goss Sawhney

### ENDNOTES

1. Legislation was passed in December 2013 that will soon move some Illinois plans to a more standard methodology. For unrelated reasons the legislation is being challenged in the courts.
2. New ASOP 4, section 3.17.1.
3. Sections 3.14.2 and 4.1.k.
4. http://actuary.org/content/public-discipline.
5. Obtained by a Freedom of Information Act request—one of the mechanisms that reinforce the accountability of government to the people.
6. http://www.soa.org/blueribbonpanel/.
7. See cover memo to new ASOP 4.
8. Section 4.1.s.
9. Section 4.1.t.
10. Section 4.1.s.3

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# THE EMERGING PRICING SHOCK IN THE TREATMENT FOR HEPATITIS C

*By Rebecca Owen*

In the past few months there have been headlines in the press about the expected increase in the costs of treating hepatitis C due to a new, effective, and very expensive therapy.

The rhetoric is quite hot:

> ***$1,000 per Day Medication Enrages Express-Scripts***
>
> ***How Much Should Hepatitis C Treatment Cost?***
>
> ***Lawmakers Attack Cost of New Hepatitis Drug***

The press has raised questions about pricing and which patients should receive treatment, and, certainly, they have expressed concern about the burden of this new treatment regimen under any proposed scenario. Here is a brief outline of the topic.

Hepatitis is the general term for an inflammatory condition of the liver, usually caused by a virus, although drugs, alcohol use and certain medical conditions are also causes. The most common forms of viral hepatitis are A, B and C. Hepatitis A is often associated with food contamination and is highly contagious, resulting in outbreaks that often make the evening news. Hepatitis B is usually spread through blood or body fluids, and, often, healthy adults have only mild symptoms and recover without treatment, although the symptoms can persist for life. Vaccinations for these two forms of hepatitis are usually on the list of recommendations for anyone planning adventure travel.

This article is concerned with the care and treatment of hepatitis C. A person can have hepatitis C for years with no debility, although, at the onset, there may be symptoms like nausea, fatigue or a low fever, any of which may be attributed to a number of other, more benign, causes. However, the disease does not lie dormant, but continues to damage the liver until the situation becomes critical enough to demand attention. About 75 to 85 percent of people who contract the disease develop chronic hepatitis C, which can lead to liver failure and liver cancer. Hepatitis C is usually spread through contact with infected blood. Contaminated needles, including those used to make tattoos or piercings, are the most common means of transmission—and only one point of contact is sufficient to infect someone. Since donated blood was not tested for hepatitis C, as it is now, until 1992, people who received a blood transfusion prior to that time are at risk. There is no vaccine for hepatitis C.

Hepatitis C virus (HCV) is surprisingly prevalent—it is the most common chronic viral disease in the United States and the leading cause of liver cancer and liver transplants. The CDC estimates that 3.2 million people have chronic HCV in the United States, with some other estimates even higher—up to 5 million. The rates of infection were highest in the 1970s and 1980s, and infection is highest among baby boomers; however, the CDC reports that approximately 1 out of 3 people between the ages of 18 and 30 who inject drugs have the virus. Prison inmates have a high infection rate due to a number of risk factors.

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The health implications are breathtaking, but so is the cost. … In a presentation to the CTAF on March 10 … the impact to California large group premiums was estimated at 14.1 percent.

Medical facilities that rigorously use standard precautions and infection control are considered to pose no risk of transmission.

Historically, chronic hepatitis C has been treated using a combination of drugs, with patients living for many months, and even years, taking regimens determined by the genotype of the virus. These treatments have been shown to be effective for 50 to 80 percent of patients. However, the length of treatment, coupled with side effects, meant that a large portion of patients did not stay the course. A breakthrough drug combination has shortened the treatment time to just 12 weeks, and it shows a response in 90 to 95 percent of the patients who have one of the most common and difficult HCV genotypes. (For readers who are interested in more detail about treatments and comparisons, here is a link to an excellent clinical lecture on the topic: *http://www.youtube.com/watch?v=e6-GcFxzdb4&feature=youtu.be.)*

The health implications are breathtaking, but so is the cost. One of the drugs—sofosbuvir, known by the name Sovaldi—is widely quoted as costing $84,000 per three-month treatment. Even offsetting the cost of the older, less efficacious, treatment and the costs of unchecked liver disease, this breakthrough treatment has the potential to demolish Medicaid budgets, shock unwitting self-funded plans, and erode pricing margins for insurers. In a presentation to the California Technology Assessment Forum (CTAF) on March 10 of this year, the impact to California large group premiums was estimated at 14.1 percent. The cost of Sovaldi is being discussed in rating meetings, both public and private, and the implications are being discussed heatedly—including the comparison to costs in India ($2,000 for six months) and to projected costs in Europe, which are falling somewhere between the U.S. and Indian costs.

Since it is unlikely that budgets can stretch to treat every person with the virus, there are policies being crafted to "decide how to decide" who is going to be allowed to receive Sovaldi-based treatment. The Veterans Administration has released a detailed algorithm (http://www.hepatitis.va.gov/pdf/2014hcv.pdf). Several states have released a prior authorization methodology (e.g., Texas http://www.hhsc.state.tx.us/news/meetings/2014/DUR/0410/6e.pdf), and insurance companies are forming their policies. Some companies are asking doctors to delay prescribing the regimen to patients who can wait. Frequently, the criteria are focused on restricting the treatment to persons with advanced liver disease, such as cirrhosis. CTAF estimated that if only patients with advanced liver disease are treated, the impact to costs would fall from the initial 14.1 percent projection to 4.7 percent.

For those managed care companies who accepted capitation rates for 2014 before the impact of Sovaldi was comprehended, the situation is more critical. Medicare and Medicaid plans have a larger portion of their population with HCV than commercial plans, especially in those states with expansion populations, and there is no room in the rates to absorb these additional costs. These companies are asking states to consider carving out the costs of HCV treatment from the rates or increasing reimbursements to cover the shortfall. States are carefully weighing their options, which include deciding questions of who will be covered as well as considering whether there is any room to ask for drug pricing concessions for public payers.

One of the hardest parts about writing an article on an emerging issue such as this is the speed with which the landscape is changing on the topic, but, within this rapidly changing landscape, there are some certainties to consider. The treatment is effective, and it certainly will save lives. The treatment is expensive and there are not enough resources to immediately cover the cost for all 4 million people with the virus. Finally, there are some very hard decisions to be made, and not everyone will be comfortable with the proposed solutions.

LET'S TALK

# INTERVIEW WITH AN ACTUARY IN THE PUBLIC INTEREST

*Responses by Anna Rappaport*

## WHAT ARE YOU DOING TODAY?

2013 was the 50th anniversary of my fellowship in the Society of Actuaries (SOA). I have been thinking about phased retirement for many years and have used the idea of a "life portfolio" to define my current activities. My current life portfolio is as follows:

- I view myself as a phased retiree. I have stayed very active professionally and hope to continue to do so.
- I seek consulting assignments consistent with my interests.
- Volunteering in areas that I view as important is a good way to give back, while at the same time doing something that I enjoy.
- Research, writing and speaking are all a big part of what I do.
- I am also an artist and have worked to balance my actuarial and retirement system focuses with art.
- I place a high value on family commitments and do not get involved in projects that will create difficulty with other priorities. This is a choice that someone with a regular job often can't make.
- I work regularly to maintain contacts.
- I only do projects that are of interest to me, and which I can do on my own without staff. I may partner with others and have others help me.
- Advisory group roles can fit well into what I want to do.
- I am creative, and seek to apply my creativity in both professional work and art. In my art, I have focused on several areas of innovation. My website describes what I have been doing.
- I want to feel that what I do has value.

P.S.: I believe that each of us should have a life portfolio as well as a financial portfolio. Just as a financial portfolio requires focus and management, so does a life portfolio.

## ARE THERE ANY BROAD GOALS THAT UNDERLIE YOUR ACTIVITIES?

I am still focused on the two goals that I established 20 years ago: to focus on responding to the challenges of the aging society and also to work to build better relationships between actuaries and other professionals interested in retirement security and the aging society. Much of what I do relates to serving the public well and focuses on the public interest.

I remain passionate about creating a better future for older Americans by improving the retirement system in America, and am particularly concerned about the many women who do not fare well at older ages.

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**Anna Rappaport,** FSA, MAAA, is an actuary, consultant, author, and speaker, and is a nationally and internationally recognized expert on the impact of change on retirement systems and workforce issues. She can be reached at *anna@annarappaport.com.*

… several years ago I became very concerned when I realized that the link between retirement and diability seemed to have been lost. …

## WHAT IS YOUR SPECIFIC CURRENT PROFESSIONAL ROLE AND HOW DOES IT RELATE TO THE PUBLIC?

After retiring from Mercer in 2004, I established Anna Rappaport Consulting. In my consulting business, I focus primarily on writing, speaking and research on big picture retirement issues. I seek consulting assignments consistent with my interests.

I chair the SOA Committee on Post-Retirement Needs and Risks. The committee focuses on issues related to the individual and is very focused on creating a better retirement future for the public. The committee has developed an extensive set of research on the post-retirement period. Most of the committee's projects have teams that present several disciplines. I have been working on this committee for more than 15 years. A rather long summary of the work of the committee will be published by the SOA as a paper to be included with the 2014 Living to 100 monograph. All of the work of the committee is available on the website.

I also serve on the board of the Women's Institute for a Secure Retirement (WISER). That organization is devoted to better retirements for low- and middle-income women.

In addition, I serve on the Advisory Board of the Pension Research Council, which is connected to the Wharton School. This is a multidisciplinary group devoted to leading-edge retirement issues.

I also serve on the Actuarial Foundation's Consumer Financial Education Committee, which is devoted to helping the public. I am a past chair of that committee. All of these projects are focused on the public and on responding to issues of the aging society.

## CAN YOU DESCRIBE YOUR STYLE?

I always try to do the right thing. I always try to do more than my share. In a team if everyone does 110 percent of their share, things work well. If everyone does 90 percent, it is a mess. I work hard to be collaborative and to value those I work with. Now that I have a choice, if people are too difficult, I decide to work with someone else.

I believe in networking, and in spreading the word about interesting work.

I am creative, and seek to apply my creativity in both professional work and art. In my art, I have focused on several areas of innovation. My website, www.annarappaport.com, describes what I have been doing. I want to feel that what I do has value.

## HAVE YOU SERVED ON ANY GOVERNMENT ADVISORY COMMITTEES?

Yes. Most recently I served on the Department of Labor's ERISA Advisory Council from 2010 to 2012. I currently serve on the GAO's Retirement Security Advisory Panel. I was a delegate to the 1998 and 2002 National Summits on Retirement Savings. I served on the 2003 Technical Panel of the Social Security Advisory Board. My first government advisory role was as a member of the first Advisory Committee to the Joint Board for the Enrollment of Actuaries in the 1970s. All of these roles involve serving the public.

## IS THERE A SPECIFIC ISSUE YOU WOULD LIKE TO FOCUS ON?

Yes, several years ago I became very concerned when I realized that the link between retirement and disability seemed to have been lost when companies began to provide their retirement benefits through defined-contribution plans. This is an issue where the public is poorly served today.

In my 50+ years as an actuary, I have been accustomed to thinking about a variety of risks. For many years, as a defined-benefit actuary, I normally included disability in the discussion, and most plans had the equivalent of a waiver-of-premium benefit included in the plans. That benefit provided for continued crediting of service to normal retirement age, when the pension would start. The pension was designed to work side by side with long-term disability. But when benefits are provided through a defined-contribution plan, there is no similar benefit. Saving

for retirement often stops (at disability), and the lump sum then accrued can be paid out and spent by the individual.

I started writing about this several years ago and also began talking to people whenever I could. I have made several talks on the subject. The articles are in Benefits Magazine, the Pension Section News and the Journal of Retirement.

Within a couple of years after starting down this path, I was appalled when I found out that employers who wanted to include the equivalent of a waiver-of-premium benefit with a defined-contribution plan were faced with regulatory problems and uncertainty. That intensified my interest in the subject.

I am very proud to say that the ERISA Advisory Council took up this topic in 2012. Their focus was on "Disability in an Environment of Individual Responsibility." The report of this work is on their website. As I worked on this project I learned that there were a number of other problems with disability. Only 31 percent of the civilian labor force has long-term disability coverage. There were some areas that seemed to generate misunderstandings and claim conflicts. I encourage the reader to look at the report or read my articles.

I have been talking to people about this in various settings. Recently, I did a presentation at the International Congress of Actuaries on this topic. I have contacted several people in Washington to discuss the issue. Often, people who are, otherwise, experts in benefits and retirement have not focused on these issues, and they are interested in the information. I was very pleased when I learned that the Treasury Department had issued final regulations clearing up the problem with defined contribution plans. Employers who provide disability protection that replaces the amounts saved during periods of disability will no longer be faced with regulatory uncertainty. Now it is time to shift the conversation to encourage employers to take action and to encourage financial services organizations to offer good product solutions.

I am proud to be participating in this conversation. I believe that my efforts may have helped in moving this issue forward.

## WHAT IS YOUR EDUCATIONAL BACKGROUND?

I became a fellow of the SOA in 1963.

I have an MBA from the University of Chicago. I went to high school in Louisiana. I first attended the University of Chicago as an undergraduate and a math major but did not finish. I was in the business school class of 1985, and had been part of the undergraduate class of 1960, 25 years earlier.

## WHAT IS YOUR PROFESSIONAL BACKGROUND?

I was in the life insurance industry from 1958 to 1976 and then at Mercer from 1976 to 2004. While in the life insurance industry, I was first at New York Life, then at Standard Security Life, and then at the Equitable Life Assurance Society (now AXA). Standard Security was a small life insurance company with a very innovative management. I was one of two actuaries there, and this experience offered me the chance to see how all aspects of the life insurance company fit together. I also had the chance to deal directly with agents. At Equitable, I was involved in research linked to the future of financial service products and their delivery.

I joined Mercer just as ERISA was becoming effective, and was active in employee benefit consulting from 1976 to 2004. While at Mercer, I also participated in intellectual capital development.

After retiring from Mercer in 2004, I established Anna Rappaport Consulting, where I consult on big-picture retirement issues. I do not do anything that requires staying up to date with new legislation and regulations. I do not advise plan sponsors about the funding and financial management of their plans. I wrote about my life as a phased retiree for the January 2013 SOA Pension Section News.

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My professional actuarial goal has been to make a difference, and I feel that I have been able to do that. …

Volunteer work is not new to me. I served as president of the SOA in 1997-98, was on the board in the ’60s, ’70s, ’80s and ’90s, and have been an active volunteer for most of my 50+ years as an actuary. I have participated in many committees within the SOA, and have also volunteered in the American Academy of Actuaries and the Actuarial Foundation.

## WHAT PREPARED YOU MOST FOR YOUR PROFESSIONAL ROLE?

Several things were important. My parents taught me to work very hard. My father was very focused on aging society issues and spent his professional career in government service in health and human services. My mother was a math teacher. There was a strong tradition of mathematical interest in my family. The actuarial examinations gave me a very good overview and grounding. There was only one set of examinations with no specialization when I took them. I think the examinations taught me to think through how a system worked, where the money went, and what risks were involved. I had an outstanding mentor at Standard Security. He encouraged me to volunteer and get involved in SOA activities.

## WHAT HAS BEEN IMPORTANT IN HELPING YOU FOCUS ON THE PUBLIC INTEREST?

My parents get the top billing. My father was extremely devoted to public service.

A focus on how the systems we work with affect people was second. My career and activities have helped me understand diverse stakeholder perspectives. My experience and activities provide a good understanding of a range of stakeholder perspectives. During my service at Mercer (from 1976 to 2004), I played a variety of roles. For the largest part of the time I was at Mercer my focus was on employer-provided retirement plans, where my perspective was that of an actuary and consultant for those plans. During the last few years I served the U.S.-based retirement practice and was focused on current issues and making the system better.

I also focused heavily on the perspective of the individual and have been working within the actuarial profession to understand individual perspectives and needs. I was a major contributor to and am very proud of the SOA publications “Managing Post-Retirement Risks: A Guide to Retirement Planning” and the 11 decision briefs focused on retirement decisions.

This interest in the consumer and the individual also goes back to the earlier part of my career. From 1958 to 1976, I was in the insurance industry and focused on the roles of the insurers and the people who represented them, providing advice to individuals. I also worked directly with agents, and that was very helpful. In 1974 I authored a paper “Consumerism and the Compensation of the Life Insurance Agent,” published in the *Transactions of the Society of Actuaries* (TSA, January 1974).

## WHAT ARE YOU MOST PROUD OF?

I take a lot of pride in both my art and my professional work. Some years ago, I was asked whether I color inside or outside of the box. My response was that I define my own box. One of the hallmarks of my artwork is a series of mixed media collages that focus on movement, color and texture. I photograph surfaces, plants, clouds and buildings to get interesting reflections, textures and colors, and put bits of these photographs into some of the collages. I work with watercolor, ink, oil pastel, pencil and collage. See my website for examples of my art. I participated with other actuaries in the “Artuaries” group. We pooled our art and produced greeting cards with images produced by actuarial artists. ACTEX supported the project, and we sold the cards and donated the profits to the Actuarial Foundation.

My professional actuarial goal has been to make a difference, and I feel that I have been able to do that through the work of the Committee on Post-Retirement Needs and Risks, and through the relationships I have built with a range of people. The Post-Retirement Needs and Risks work

regularly gets press coverage. I also have been able to help a number of people.

I am very proud of my writing and have a number of articles published. Some of my best articles are in *Benefits Quarterly*, a publication from the International Foundation of Employee Benefit Plans. In 2013, I was awarded the Practitioner Thought Leadership Award by the Retirement Income Industry Association for my paper "Insights to Support Better Retirement Planning: Implications of and Key Findings from Recent Society of Actuaries Research," published in *Retirement Management Journal*. I also won an award in a 2013 essay contest sponsored by the SOA Pension Section. The title of my essay is "Measuring Success to Improve Long-Term Economic Security when DC Plans are Primary." This paper has been published in the SOA *Pension Section News.*

I am also very proud of the work I have done to invite people from other professions to work with actuaries and to include them in SOA projects. For the last 15 years, the teams working on the Committee on Post-Retirement Needs and Risks' projects have been multidisciplinary. This has improved our projects greatly and given us many more ideas.

Others have also recognized my work. See my website for a discussion of several awards.

## ARE THERE ANY OTHER ACTUARIES THAT WORK DIRECTLY IN THE PUBLIC INTEREST THAT YOU ADMIRE?

Carol Bogosian and Cindy Levering have been major contributors to the Committee on Post-Retirement Needs and Risks and the Pension Section.

Steve Siegel of the SOA staff has been a major contributor to these research projects.

Steve Vernon is doing wonderful work at Stanford and in writing for the public.

## WHAT ARE SOME WAYS YOU HAVE BEEN ABLE TO STAND UP FOR THE PUBLIC INTEREST?

- I was president of the SOA in 1997-98 and served on its board for a total of 14 years, spanning four decades. During that time, I focused on being sure that pension matters were thought about from a big-picture perspective. During my presidency, I focused heavily on the aging society and how actuaries in many disciplines could contribute to building better solutions for the challenges of aging. This was a heavily public-service-oriented mission. I have continued on this mission.
- My government advisory board service and my "campaign" on disability are mentioned above.
- I have served as a member of the board of WISER.
- I have been an active member of the Joint Task Force on Issues of Women as They Age for the Chicago Bar Association and Women's Bar of Illinois.

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[As] president of the SOA … I focused heavily on the aging society and how actuaries … could contribute to building better solutions for the challenges of aging.

There is an opportunity to have an impact by picking an issue or two and then focusing on them, and spreading the word.

- While serving on the Actuarial Foundation Consumer Financial Education Committee, I made the initial contacts that enabled the Actuarial Foundation to work with the Department of Labor in Taking the Mystery Out of Retirement Planning, and I was a very active participant in that project.
- I have given presentations on women's retirement issues to various groups in my local community and nationally.
- I have participated in several Capitol Hill briefings, working with the American Academy of Actuaries. The briefings on SOA research were organized by the Academy and sponsored jointly by the Academy and the SOA.
- I have served on several American Academy of Actuaries task forces or committees, including one focused on public retirement plan issues.
- Prior to serving on the ERISA Advisory Council, I testified at the council in 2007, 2008 and 2009.
- I was a delegate to the 1998 and 2002 National Summit on Retirement Savings.
- I previously served on the boards of the Actuarial Foundation, the National Academy of Social Insurance, the Profit Sharing Council of America, the SOA, the Metropolitan Chicago Information Center, the Chicago Network, and the American Academy of Actuaries.

## WHAT WAS YOUR MOST REWARDING JOB?

Each job had features that made it rewarding. During my tenure at New York Life, I passed my exams and got into the actuarial profession. At Standard Security I had a chance to understand how the total insurance enterprise fit together, and I learned to work with a wide variety of people. I learned a great deal there. At the Equitable, I had the opportunity to focus on big-picture issues that would affect the future of financial services. My interest in the aging society has strong roots in the time I spent at the Equitable.

At Mercer, I got to work on a variety of different projects with great people and clients. I had the chance to influence my job responsibilities and projects.

I would not pick one as "most" rewarding.

## DO YOU HAVE ANY THOUGHTS TO SHARE WITH CURRENT AND FUTURE ACTUARIES WORKING IN PROFESSIONAL ROLES HAVING A DIRECT IMPACT ON THE PUBLIC?

For me, women's issues have become important in recent years. In spite of women's growing role in the workforce, there are still huge differences in retirement security by gender. There is an opportunity to have an impact by picking an issue or two and then focusing on them, and spreading the word.

I think for most people it is a good idea to balance a focus on the big picture with a focus on details in a specialized area.

The issues related to the aging society are growing more important each year. This is a big opportunity for actuaries. A multidisciplinary focus is best.

My public service focus has mostly been through my volunteer work and not through my day jobs.

# FORECASTING & FUTURISM SECTION TO AID IN UPCOMING DELPHI STUDY

By Ben Wolzenski

This note was written as the Social Insurance and Public Finance Section was considering a Delphi study regarding Social Security. What is a Delphi study and what kind of results might it produce? In brief, the Delphi method is an iterative forecasting method that uses a panel of experts and a moderator. The panelists anonymously submit responses to a series of questions; the moderator feeds all responses back to the panelists (again, anonymously); the next "round" begins: Panelists are asked if they wish to revise their answers in light of what they have learned from others' responses. The process continues for a pre-determined number of "rounds" or until results stabilize.

Members from the Forecasting and Futurism Section, acting as methodology experts, work within the section to co-sponsor Delphi studies with other sections, whose members act as subject matter experts. The 2005 "Study of the Use of the Delphi Method … Forecasting Selected U.S. Economic Variables and Determining Rationales for Judgments" was co-sponsored by the Investment Section; the 2009 "Blue Ocean Strategies in Technology for Business Acquisition by the Life insurance Industry" was co-sponsored by the Technology Section and the Marketing and Distribution Section. Most recently, "Land This Plane—A Delphi Study about Long-Term Care in the United States" was co-sponsored by the Long Term Care Think Tank and was published in April 2014. A reprint of that article follows this note. It is a leading example of the kind of results that a Delphi study might produce.

**"Land This Plane"—A Delphi Study about Long-Term Care in the United States**

By Ben Wolzenski

This article first appeared in the December 2013 issue of *Forecasting & Futurism* and is reprinted here with permission.

## ABSTRACT

Many Americans will need long term care (LTC) in future years, yet only 10 percent of those 50 and over have LTC insurance (LTCI), and public programs are not funded to provide care for all who need it. The Long Term Care Section and the Forecasting and Futurism Section have co-sponsored a Delphi study,[1] code named "Land This Plane," with a lofty objective: to create a vision for how America ought to deal with the impending LTC crisis. This article describes the results of the study that were available at the time this article was written.

## BACKGROUND

On Jan. 2, 2013, the "fiscal cliff" legislation formally repealed the Community Living Assistance Services and Supports (CLASS) Act and established a federal Commission on Long Term Care. The Sept. 18, 2013, pre-publication edition of that commission's report states the crisis. "A dramatic projected increase in the need for LTSS [long-term services and support] in the coming decades will confront significant constraints in the resources available to provide LTSS." Increasing numbers of elderly Americans who need care, combined with fewer caregivers and lower personal savings rates, will place even greater pressure on Medicaid and already stressed state and federal budgets.

On Jan. 4, 2013, members of the Long Term Care Think Tank invited Forecasting and Futurism Section Council members to join them in a discussion of a potential Delphi study.[2] The objective was no less than producing a consensus about how America should deal with the pending LTC crisis with a comprehensive, integrated solution. What would be the number and makeup of panelists, what would the questions cover, how would the logistics be handled, and could we move fast enough to provide input to the federal commission? A diverse panel of 50 experts was assembled: insurance executives and marketers; regulators and public policy advocates; and, of course, actuaries.

The questions were formulated, debated, finalized and sent to the panelists on February 1 with a reply requested by February 18. Replies were compiled, analyzed and discussed at the LTC

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Think Tank meeting in Dallas on March 3. The responses covered over 100 pages of text, and the work team concluded that the best way to conduct a second round was to consolidate the first round input into six major principles, under which specific questions were posed. The second round went out on May 15, with replies due in early June. The third round had a similar format and mostly the same questions, and was primarily aimed at giving panelists a chance to review their co-panelists' replies and give their final answers. It went out on August 14 with an extended deadline for reply of September 20. The final report was due to be presented at the Society of Actuaries (SOA) Annual Meeting on October 22, well after the date when this article was submitted. Along the way, however, interim results were shared with the Commission on Long Term Care, and it appears that some (but not all) of our conclusions found their way into the commission's report, although the commission may have reached the same conclusions independently.

Here, then, are the six principles drawn from responses to the study, the nearly complete tabulation of the extent of panelists' agreement with each principle, and some of the specific concepts underneath each principle. The full report of the study should be available online on the SOA website by the time this newsletter is released.

## PRINCIPLE 1: A ROBUST AND EFFICIENT LTC SYSTEM

All aspects of the LTC financing system need to incentivize family and household participation, responsible planning and behavior, and the most efficient use of LTC resources. An all-encompassing system should include incentives to plan for the future, purchase appropriate products, use appropriate care settings, and adopt healthy lifestyles to mitigate the need for LTC services.

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|---|---|
| Need a robust and efficient LTC system | **88 percent agreed** |
| Private insurance should be part of solution | **100 percent agreed** |
| System should incent: | |
| Responsible LTC planning | **100 percent agreed** |
| Healthy lifestyles | **75 percent agreed** |
| Household and family participation | **84 percent agreed** |

## PRINCIPLE 2: SOCIAL INSURANCE

There is a need for the government to take an active role establishing or encouraging a limited LTC social insurance program to help finance care for people who can't purchase private LTCI due to either cost or underwriting issues. It will be open to all, but designed to meet the specific needs of the "middle class." It would be part of a public-private combination approach to LTC financing but not the single standalone solution.

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| Social insurance is a necessary part of the solution | **88 percent agreed** |

## PRINCIPLE 3: CHANGES TO MEDICAID

Medicaid needs to be changed to tighten eligibility by closing loopholes, strengthening eligibility requirements, and enforcing the rules strictly. At the same time, it also needs to be modernized to enable care on a national basis in the full range of settings. This includes home- and community-based care if appropriate and cost-effective.

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| Need Medicaid reform—tighten eligibility | **79 percent agreed** |
| Need modernization—home- and community-based care | **83 percent agreed** |

## PRINCIPLE 4: CHANGES TO REGULATIONS AND LEGISLATION

In order to successfully promote the availability of LTCI in a robust and competitive market, regulations and legislation including the NAIC Model Act need to be substantially modified to take account of a new business paradigm for LTCI. The new LTCI business paradigm will entail re-engineering the overall product so that carriers will be able to balance acceptable risk levels with the need to offer meaningful consumer benefits at affordable premiums. The Model Act and other federal and state regulation and legislative revisions will need to take account of these new business realities while maintaining appropriate consumer protections.

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| Allow LTCI products with shorter benefit periods | **61 percent agreed** |
| Allow adult day care as option vs. required | **68 percent agreed** |
| Agree with term plus side fund concept | **45 percent agreed** |

## PRINCIPLE 5: AN ACTIVE GOVERNMENT ROLE

The government must take an active role developing and implementing the LTC financing solution. Federal and state governments should actively "promote the general welfare" for the benefit of their citizenry as well as their own fiscal health. They should do this by educating and influencing people to promote responsible planning and healthy behaviors related to their future LTC needs.

| | |
|---|---|
| Need an active government role | **95 percent agreed** |
| Need government-sponsored public awareness | **92 percent agreed** |
| Less restrictive partnership regulations | **85 percent agreed** |
| Tax incentives for LTC protection | **75 percent agreed** |
| Modify rules on tax-deferred savings (401(k), etc.) | **71 percent agreed** |
| National reinsurance plan | **59 percent agreed** |

## PRINCIPLE 6: IMPROVED MARKETING AND SALES

The way LTCI is marketed and sold needs to be improved by "mainstreaming the message" that LTC represents a significant and largely unplanned-for financial risk that needs to be addressed by consumers.

| | |
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| Improve LTCI training | **83 percent agreed** |
| LTCI knowledge should be core to CE designations | **75 percent agreed** |

I have now participated on the work team of two completed research studies sponsored by the SOA using the Delphi technique, and I have studied three other SOA-sponsored Delphi studies. I believe that this Delphi study is a new high-water mark in the quality of the Delphi panel and in the potential impact of an SOA-sponsored Delphi study, and I look forward to their future use by the Forecasting and Futurism Section in collaboration with other SOA sections.

### ENDNOTES

1. For background on the Delphi technique, see "The Delphi Method" by Scott McInturff in the September 2009 issue of the *Forecasting and Futurism Newsletter,* available at http://www.soa.org/library/newsletters/forecasting-futurism/2009/september/ffn-2009-iss1-mcinturff.aspx.

2. The project team included Roger Loomis, Ron Hagelman, John O'Leary, Jason Bushey, John Cutler, Amy Pahl and Steve Schoonveld from the LTC Think Tank; Brian Grossmiller, Clark Ramsey and Ben Wolzenski from the Forecasting and Futurism Section Council; and Steve Siegel of the SOA staff.

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LIVING TO 100

# INNOVATIONS IN RETIREMENT

*By Kai Kaufhold*

The triennial Living to 100 Symposium is a great source of inspiration and ideas across a range of actuarial practice areas, scientific disciplines and industries. The fifth Living to 100 Symposium was hosted by the SOA this January in Orlando, with a record-breaking number of participants from numerous countries around the globe. I would like to report on three innovative papers presented at Living to 100, which deal with three different views on retirement and longevity risk: an individual's, a life company's and a whole-sale risk management view.

## DAVID BLANCHETT: ESTIMATING THE TRUE COST OF RETIREMENT

Let's start with real people. When you or I are trying to figure out how much we have to save for retirement, we have to consider three things: what will I spend during retirement, how much income will my savings earn and how long do I expect to live. Financial planners typically use some very basic assumptions to answer these questions. In his paper, David Blanchett of Morningstar demonstrates how some additional thought on these fundamental questions leads to different answers and—a rarity for investigators on retirement issues—there is actually some good news!

Tackling the first question about retirement expenditure, Blanchett notes that current models typically assume a target replacement rate, i.e. required post-retirement income as a percentage of pre-retirement income. This simplistic assumption does not take into account the fact that pre-retirement income typically increases with age throughout a person's work life. Furthermore, the Department of Labor's Current Population Survey shows that there are pronounced differences in age-related income patterns depending on level of education. Households with different levels of income also, typically, have different percentages of pre-retirement expenses dropping away after retirement. So, even the denominator in the replacement ratio is not easy to define.

Based on the Consumer Expenditure Survey of the Bureau for Labor Statistics, post-retirement consumption profiles vary significantly by age, where the most pronounced shift is the relative increase in healthcare costs at older ages. As a consequence, retirees are also subject to a different inflation risk than the general population, because medical inflation has, historically, by far outpaced the Consumer Price Index. Bringing this information together with longitudinal data from the RAND Health and Retirement Study (RAND HRS), the author is able to calculate the actual real change in consumption for retirees, by age, showing a pattern which he describes as the "retirement smile." Refer to Figure 1 below, which shows the year-on-year rates of change in total household expenditures against age. Immediately after retirement, consumption net of inflation sharply declines. Between ages 70 and 75, the rate of decline slows down but on average consumption still continues to decrease with age. This is where the good news comes in: assuming constant expenditure after retirement is too cautious. A more accurate model would show real post-retirement consumption going down.

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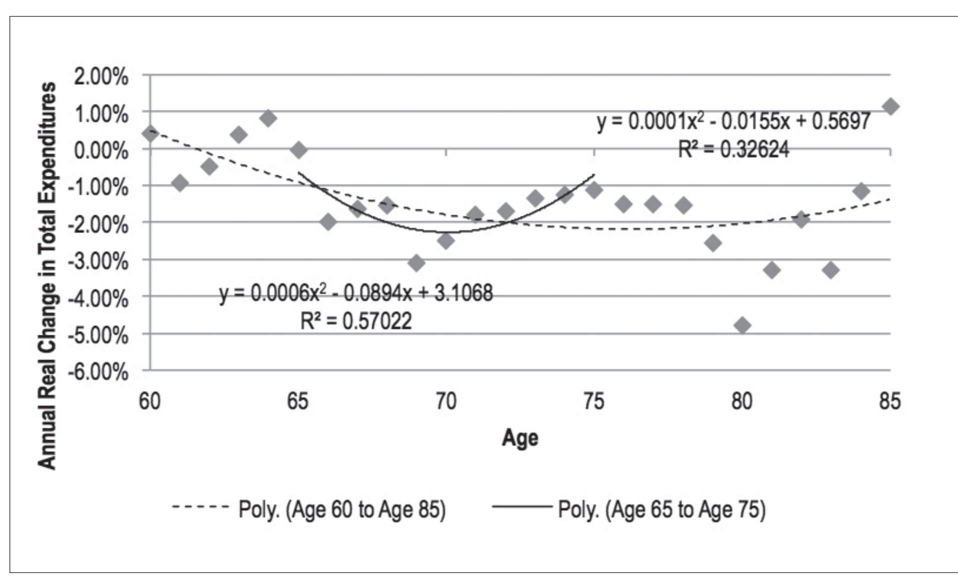
**Figure 1:** Changes in total household expenditure against age.




*Source: RAND Health and Retirement Study.*

CONTINUED ON PAGE 26

To me, the greatest merit of the paper is that it shows how important and worthwhile it is to apply actuarial principles to the question of retirement planning.

Further investigation shows that this general pattern applies in a different way to different socio-economic groups. Blanchett differentiates between high- and low-net worth households, and also between high- and low-spending households. For instance, households with a relatively low income, which spend a relatively high portion of their income pre-retirement, will likely see a much stronger reduction in post-retirement consumption. The data is not conclusive about whether this is simply because these households run out of funds after retirement, or whether their pre-retirement spending behaviour was especially high for reasons which ceased to be relevant after retirement. Another group of households are those with high net worth but low pre-retirement spending. These households apparently increase their post-retirement consumption at rates in excess of inflation. This may be driven by availability of funds or possibly also by more available time, which is likely to have been a scarcer resource for many affluent individuals before they retired.

Bringing everything together in a model combining the retirement spending curve with stochastic mortality and asset performance models, Blanchett estimates a safe withdrawal rate, relative to an individual's risk aversion. Overall, he finds that traditional simple models are likely to overstate the required target retirement savings by up to 25 percent.

To me, the greatest merit of the paper is that it shows how important and worthwhile it is to apply actuarial principles to the question of retirement planning, from the individual consumer's perspective, because the needs of retirees vary across different parts of the population.

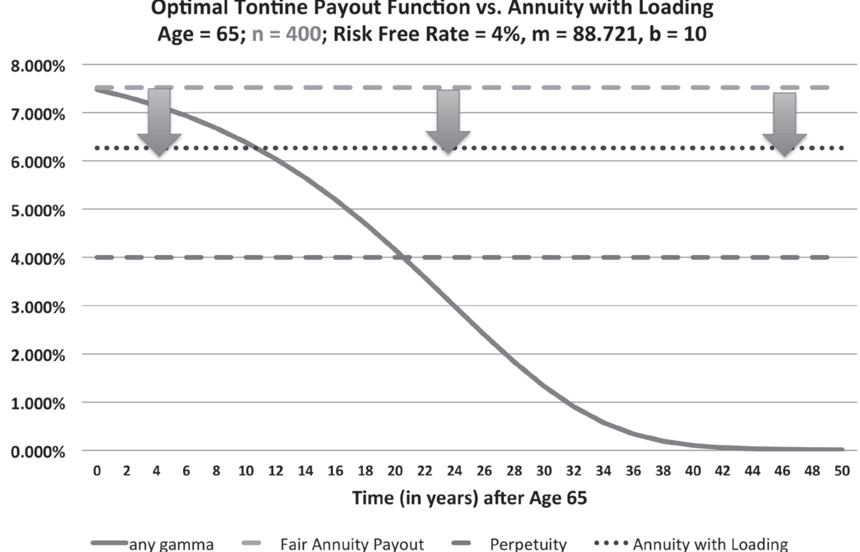
## MILEVSKY, SALISBURY: OPTIMAL RETIREMENT TONTINES FOR THE 21ST CENTURY

A tontine annuity is an investment where the proceeds are shared among the surviving members of a pool of investors. If you are an investor and unlucky enough to die earlier than the others, your share is distributed among the other investors. If, on the other hand, you are the lucky person who outlives everyone else in the pool, you get all remaining funds. Tontines are named after their inventor, an Italian banker in the 17th century called Lorenzo Tonti. Since around 1910, tontines have been banned in the United States. A less well-known historical fact is that at the beginning of the 20th century nearly every second U.S. household owned a tontine insurance policy to support the household members through retirement. The authors give an historical overview of the tontine product concept, explaining its merits and how it fell into disrepute. They then apply economic utility theory to compare life annuities and tontines, and derive optimal payout profiles for an annuity and a tontine. Their findings make intuitive sense: without inflation, the optimal annuity structure is a constant payout rate, while the optimal tontine payout profile has a decreasing structure, which is somewhat in line with the decreasing survival curve. The optimal tontine payout structure, however, depends on the size of the pool of lives on which the tontine is based and also on the individual's aversion to longevity risk. The more risk an individual investor is willing to take, the more a tontine payout profile can be back-loaded. Expressed in a different way: The more an investor believes that he or she will outlive the other members of the tontine pool of lives, the more he or she will be willing to back-load the tontine payout profile.

Comparing the utility of a life annuity and a structured optimal tontine, the traditional fixed annuity usually wins out, as long as one does not factor in the frictional cost of capital, which the insurance company has to hold in the case of an annuity. The authors give a theoretical framework for this frictional cost, the indifference annuity loading, which one can view as the amount which a rational policyholder would be willing to pay for the longevity guarantee embedded within an annuity. Figure 2 illustrates the relationship between a payout annuity, an optimal tontine and a payout annuity with guarantee loading.

This paper is a useful and illustrative example of applying modern economic theory to insurance product design. ...

**Figure 2:** Comparison between payout annuity, payout annuity with guarantee loading and Optimal Tontine: annual rate of return against policy duration.




This paper is a useful and illustrative example of applying modern economic theory to insurance product design, especially because the authors introduce the concept of subjective survivorship, the influence of an insured's self-assessment of personal health (or information advantage) on the optimal product structure. By the way, this kind of anti-selection risk for life insurers selling annuities exists in an even more pronounced form in the United Kingdom, where some specialist companies offer higher annuity benefits to applicants with a record of poor health. This leaves other companies with healthier-than-average insured annuitants, whose life expectancies may be higher than what was originally priced.

Milevsky and Salisbury argue that tontines with appropriate payout structures should once more be allowed as a complementary retirement savings product, along with annuities. While the issuer of a life annuity provides the policyholder protection against longevity risk, the issuer of a tontine provides only the infrastructure for policyholders to pool their individual longevity risks, without guarantees. These two products could be seen as two ends of a continuous spectrum, along which there are products for every flavor of risk appetite.

## LI, CHAN & LI: THE CBD MORTALITY INDICES—MODELLING AND APPLICATIONS

Switching gears from retirement product design to the field of mortality projection models, the next paper is relevant to companies and institutions who are concerned about wholesale longevity risk. For years, the feasibility of hedging longevity risk with standardized financial instruments has been discussed through various initiatives and numerous academic papers. Longevity risk is only slowly emerging as an asset class in the capital markets, because there is, still, a lack of transparency for investors and hedgers alike. Professor Li and his co-authors make an important, potentially game-changing contribution to this discussion.

CONTINUED ON PAGE 28

The authors propose a model-based mortality index framework, akin to the VIX implied volatility indices on the Chicago Board of Options Exchange, and identify criteria which the underlying mortality model needs to meet. One of the key criteria is invariance with respect to new data, which is met by the original Cairns-Blake-Dowd[1] ("CBD") model. This model, which has been studied widely in actuarial literature, also has the advantages of being both simple and intuitive.

The CBD model applies a logit transform to the mortality probability $q_{x,t}$ :

$$q_{x,t} \longmapsto \text{logit}(q_{x,t}) \coloneqq \ln\left(\frac{q_{x,t}}{1-q_{x,t}}\right)$$

and models the logistic mortality rate logit $(q_{x,t})$ as a linear function of age.

$$\ln\left(\frac{q_{x,t}}{1-q_{x,t}}\right) = \kappa_t^{(1)} + \kappa_t^{(2)}(x-\bar{x})$$

The formula shown above contains two time-dependent parameters, $\kappa_t^{(1)}$, $\kappa_t^{(2)}$. $\bar{x}$ is the average age in the data set used to calibrate the mortality projection model. In most countries, this linear age model for period mortality is a reasonable approximation over the age range of interest for annuities and pensions, i.e. 60 to 95 years. $\kappa_t^{(1)}$ describes the level of mortality in time period $t$ and $\kappa_t^{(2)}$ measures how steep the mortality curve is in the same year.

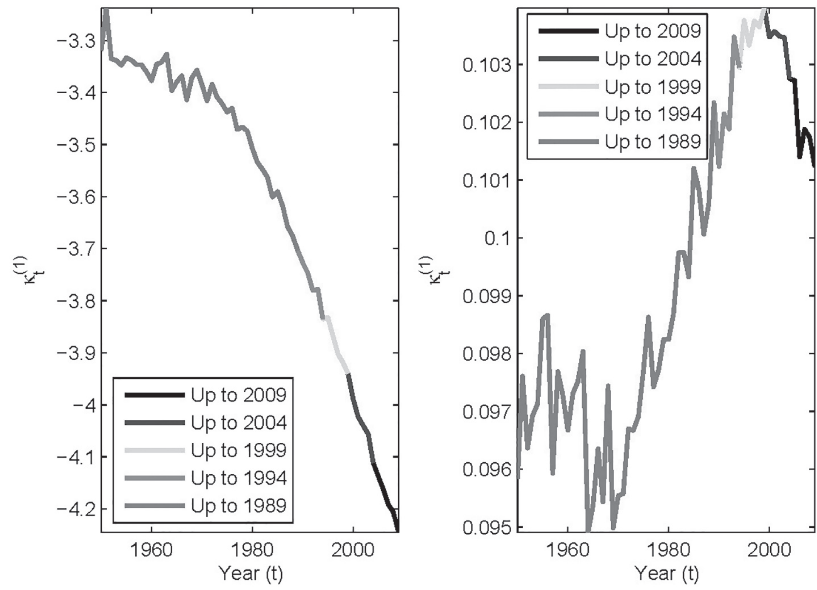
A reduction in the level of mortality as described by $\kappa_t^{(1)}$ equates to an improvement in mortality across all ages. An increase in the slope of the mortality curve, by contrast, is a reduction in mortality for younger ages paired with an increase for older ages.

The following chart shows results obtained for $\kappa_t^{(1)}$ and $\kappa_t^{(2)}$ applied to population mortality statistics for males in England and Wales.

The left chart in Figure 3 shows that over the entire time period from 1950 until 2009 the level of male mortality was generally decreasing in England and Wales, and at an accelerated pace since the mid-1970's. The right-hand chart shows that, since the mid-1970's, the mortality curve has become steeper and steeper, which means that mortality has been increasing more rapidly at younger ages than at older ages.

The authors use the intuition behind the two CBD indices to illustrate the sensitivity of a given population or portfolio to the level of mortality and the slope of the mortality curve. As illustrated in Figure 4, right, pension plans and companies selling life insurance are exposed to mortality trend risk in different ways. While faster mortality improvements increase the financial burden for pension plans and their sponsors, the opposite is true for life insurers, who profit from reductions in mortality rates on their life insurance book. For both types of institutions, older ages are more likely to have a greater financial impact than younger ages, because greater amounts of insurance are likely to be held by older poli-

**Figure 3:** CBD-Model estimates for time-varying parameters $\kappa_t^{(1)}$ and $\kappa_t^{(2)}$. Data: English and Welsh males. Sample periods: 1950 to 1989, 1994, 1999, 2004 and 2009.



cyholders and pension plans typically have a weighted average age between 70 and 75. That is why the lower half of the diagram shown in Figure 4 is most important.

Continuing from this intuition, the authors introduce the concept of joint prediction regions as a graphical measure for longevity and mortality risk. This makes it easy to compare the exposures in different countries, as shown in the following charts.

Comparing England and Wales population mortality to Canadian mortality, the spread of joint prediction regions for Canadian mortality is much narrower than for English and Welsh men. This means that the uncertainty around the level of mortality improvement appears to be less in Canada. However, there is a greater uncertainty with respect to the slope of mortality. This uncertainty will also make valuation of life insurance and pension risk difficult.

Based on the findings illustrated in Figure 5 and Figure 6, Canadian life insurers would be more at risk of overestimating mortality improvements than Canadian pension plans are of underestimating them, assuming they used a stochastic mortality projection model to estimate the improvements in the first place. This is because the joint prediction regions are tilted upper left to lower right.

The three articles summarized here will appear in the 2014 Living to 100 Symposium V Monograph, which will be published this summer. The innovations described by the authors demonstrate how much thought and creativity is necessary to understand longevity risk from the different perspectives of the individual, the insurance company and the risk manager. These three perspectives cover a whole "pyramid of retirement risk." The base of this retirement risk pyramid is formed by the financial needs of individuals after retirement. Building upon understanding

**Figure 4:** Interpretation of K1 and K2 risks

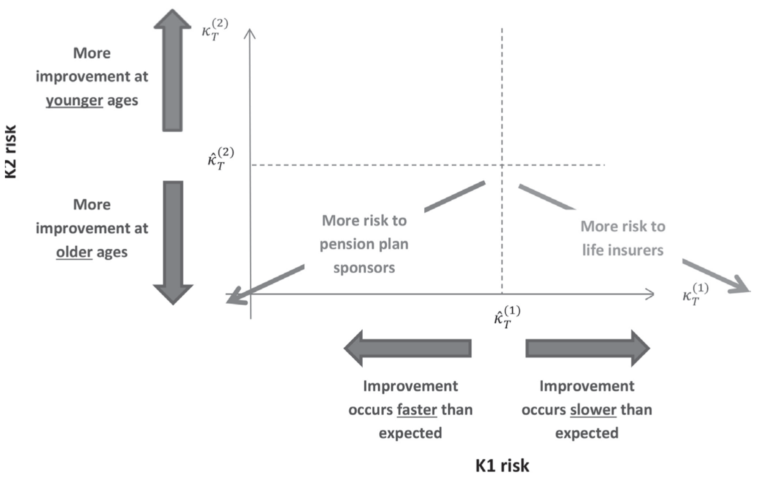



**Figure 5:** Two-dimensional plot of $\kappa_t^{(1)}$ and $\kappa_t^{(2)}$. Data from England and Wales, male mortality projected to 2022, 2032 and 2042. Stochastic projections of CBD indices using VARIMA(5,1,0) time series process.

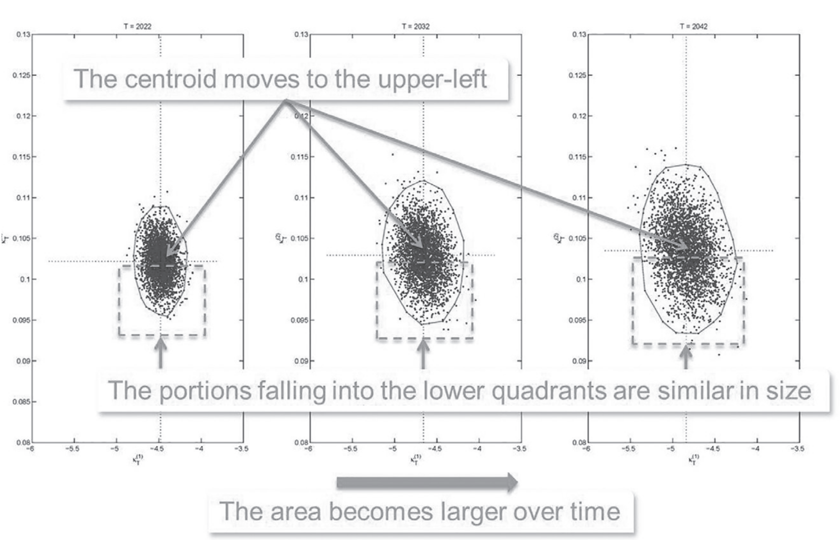



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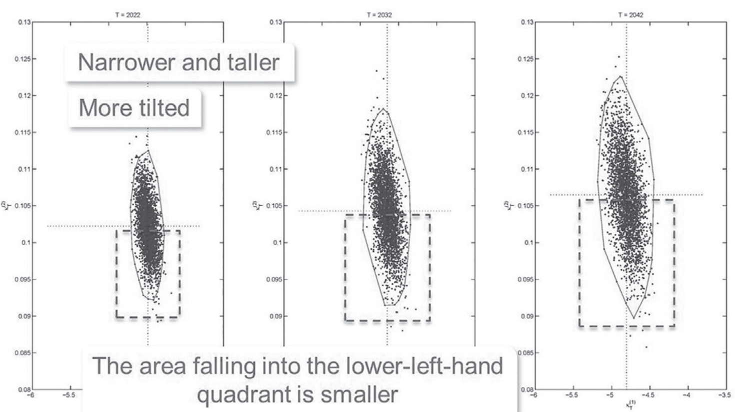
**Figure 6:** Two-dimensional plot of $\kappa_t^{(1)}$ and $\kappa_t^{(2)}$. Data from Canada, male mortality projected to 2022, 2032 and 2042. Stochastic projection of CBD indices using VARIMA(3,1,0) process.




these needs, we must offer products and solutions which cater to a range of socio-economic groups and risk appetites. In order to sustain such products over the many decades that our stakeholders require, the longevity risk which companies, employers and government institutions cover has to be understood and, ideally, actively managed.

## ENDNOTES

[1] Cairns, A. J. G., Blake, D. and Dowd, K. (2006). A two-factor model for stochastic mortality with parameter uncertainty: theory and calibration, *Journal of Risk and Insurance*, **73**, 687-718.

# SOA AND CIA PARTNERING IN CANADA TO CONDUCT RESEARCH

*PROJECTS INCLUDE A REVIEW OF THE SUSTAINABILITY OF THE CANADIAN HEALTH CARE SYSTEM AND RETIREMENT SYSTEM RESEARCH*

*By Émilie Bouchard*

Several years ago, the Society of Actuaries (SOA) launched an initiative to better support its Canadian members. Our goal is to ensure that the SOA provides good value to its members in Canada, in a way that is complementary to the services the Canadian Institute of Actuaries (CIA) delivers. To support this initiative, the SOA hired me last October as a liaison dedicated to Canadian membership. Part of my role is to help identify relevant research projects and promote them within the SOA to obtain funding and support. I work closely with Dale Hall, managing director of research at the SOA; Ian Genno, chair of the SOA Research Executive Committee; Dave Dickson, chair of the CIA Research Committee; and key representatives within the CIA to advance Canadian research.

I am really excited to be part of the actuarial community, since I believe that our profession equips us to contribute to the world by bringing some peace of mind to people in all areas of risk. I believe that the world needs leaders with high integrity now, more than ever. As actuaries, we certainly have the skills to provide unbiased information on current societal issues. In fact, as the SOA and CIA collaborate on relevant Canadian-themed research, they enhance Canadian actuaries' ability to inform the public.

Two examples of such collaborative initiatives are 1) the review of the sustainability of the health care system, and 2) the upcoming in-house retirement research:

- The SOA and the CIA jointly sponsored a research project on the Canadian health care system. The report was released in the fall of 2013 and indicates that the Canadian health care system may not be sustainable in its current form.
- A member announcement issued jointly by the SOA and the CIA in February stated that they will bring in-house retirement research to Canada. Similar to what was done in the United States, the research will measure the impact of different influences on the retirement system as a whole.

Details on these initiatives follow.

## SUSTAINABILITY OF THE CANADIAN HEALTH CARE SYSTEM

Health care in Canada is delivered mainly through a publicly funded system and is mostly free at the point of use. The Canadian health care system delivery is considered a provincial jurisdiction. While Canadian provinces and territories are predominantly responsible for their own health care delivery, the federal government sets national standards and provides funding support (through the Canada Health Transfer (CHT)), provided certain standards are met. These standards relate to insured health care services, namely physician and hospital services, and they include criteria on comprehensiveness, universality, accessibility, portability and public administration.

The CHT currently funds 21 percent of provincial and territorial health care expenditures. Late in 2011, the federal government announced its intention to modify the CHT calculation, with an effective date of April 1, 2014. The study found that the revised formula would lead to a decrease in the future share paid by the federal government which, under the revised formula, is projected to drop to 14 percent by 2037.

According to the report, the objectives of the research were to project future health care costs, to assess the sustainability of the system over a 25-year horizon, and to analyze the implications of the changes to the CHT proposed by the federal

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**Émilie Bouchard,** FSA, FCIA, is staff fellow—Canadian Membership for the Society of Actuaries. She can be reached at ebouchard@soa.org.

government. "Unlike several previous forecasts on the future costs of the Canadian health care system, this report's methodology applies actuarial techniques to directly capture the increasing health care costs associated with Canada's aging population," explains Stéphane Levert, FSA, FCIA, the report's lead researcher.

As highlighted in the research, if health care expenditures continue to increase at current rates, costs will eventually represent the major part of the provinces' and territories' budgets, making it almost impossible to service their debts and fund programs related to education, social welfare and infrastructure. The growth of health care costs as a share of budgets is due to the real growth in health care expenditures, largely due to the aging population, and to the reduced growth in GDP as the population ages and the percentage of working Canadians declines.

The report states that, assuming that the current CHT formula is maintained, the proportion of total revenues available to provinces and territories and needed for health care expenditures (44 percent in 2012) would equal 65 percent by 2037. Proposed changes to the CHT would, while reducing the federal government share, of course, amplify the problem for the provinces and territories.

In summary, the research shows that to ensure the sustainability of the Canadian health care system, significant intervention is required.

To access the full report, "*Sustainability of the Canadian Health Care System and Impact of the 2014 Revision to the Canada Health Transfer,*" visit **http://www.soa.org/Canadian-Health-Care-Sustainability**.

## CANADIAN RETIREMENT SYSTEMS

This new research initiative will bring timely actuarial insight on key retirement issues and will allow actuaries to demonstrate their expertise in discussions with key stakeholders. Initial efforts will include the development of a dedicated database, modeling tool and research team to analyze the impact of various influences and potential scenarios on Canadian employer-sponsored retirement plans. Such influences include changes in policy and legislation (like funding relief measures), changes in economic conditions, and changes in demographics.

I am confident that, even though Social Security and other retirement systems face great challenges, actuaries can greatly assist in informing the public with respect to the sustainability of such programs and, hopefully, also be agents of change in our communities. Thank you to the vibrant community of engaged Canadian actuaries who connect, share and advance the profession!

## REFERENCES

Member announcement jointly issued by the SOA and the CIA "CIA and SOA Partnering in Applied Actuarial Research Aimed at Providing Timely Perspectives on Key Retirement Issues," Feb. 27, 2014.

News release jointly issued by the SOA and the CIA "Canada's Current Health Care System is Not Sustainable; Action Needed to Maintain the System's Survival," Sept. 17, 2013.

"Sustainability of the Canadian Health Care System and Impact of the 2014 Revision to the Canada Health Transfer," September 2013. Sponsored by the SOA and the CIA, and prepared by Stéphane Levert, FSA, FCIA, president of Stephane Levert Consulting Services Inc.

ACTUARIAL TIPS AND TRICKS

# A LESS VISIBLE PATH

## A PRIMER FOR CARE, PAYMENT AND QUALITY HEALTH INITIATIVES

*By Greger Vigen*

Various forces across the health care industry and the Patient Protection and Affordable Care Act (ACA) are driving major changes within the health care industry. Much of the public discussion has focused on the current programs arising from the ACA, such as exchanges, Medicaid expansion, and the related tax impacts. However, much is happening behind the scenes, particularly with topics covered in Title III of the ACA. This article provides a brief overview of the many programs and initiatives that have been somewhat less visible. Deeper background material is available through various references, which you can find listed at the end of this article.

As actuaries working under health care reform, we need to understand:

- The impact on current results (added administrative costs and, possibly, lower trends).
- Available public material lets us become better educated relatively quickly.
- Some new initiatives have the potential for major performance improvements.
- Performance on specific quality initiatives has often been strong; performance on cost initiatives, generally, has been very uneven.
- As a result our professional expertise is essential to improving financial performance within the broader goals.

These new programs and initiatives impact millions of people in the public sector under Medicare and Medicaid.

## GOAL—THE "THREE-PART AIM"

Let's start with a broad statement of goals: a "Three-Part Aim" has been extensively presented by the government and, nationally, by many thought leaders in the health care industry. The goals of this effort, also known as the Triple Aim, are:

1. better care for individuals,
2. better health for populations, and
3. lower growth in expenditures.

CONTINUED ON PAGE 34

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In short, the Triple Aim can be summarized by "Care/Health/Cost." There are major opportunities for improvement; in some parts of the country, there is already strong performance, but in many areas there is not. Consequently, there are huge opportunities to spread the successful underlying initiatives to the rest of the country.

The third part of this goal, the cost element, is driving major actions to move to a pay-for-value health system and to align payment programs across various buyers.

## SUMMARY OF MAJOR ACTIONS

To support the Triple Aim, actions are happening at multiple levels.

The health reform statute, the ACA, creates extensive changes in direction for both Medicare and Medicaid. Some changes are mandatory; others are voluntary. For example, the readmissions reduction program is mandatory. On the other hand, many providers are voluntarily participating in new federal initiatives such as accountable care organizations (ACOs), which are optional.

The ACA also gives authority to the Centers for Medicare and Medicaid Services (CMS) to test and to expand successful pilot programs into broader initiatives.

Many Medicaid changes are being proposed and implemented at the state level, including major waivers, quality initiatives, patient-centered medical homes (PCMHs), bundled payments and primary care physician payment reform.

However, it is crucial to understand this is not merely about a legislative initiative. There are strong business issues driving the transformation of the health industry. Budgets are tight across all sectors. The combination of financial pressures and extensive new capabilities creates transformation and the potential for substantial improvements. Public sector actions are reinforcing private sector actions and effecting change within the industry. As a key example, the provider community (such as hospitals and primary care physicians) is actively and voluntarily driving these initiatives—often across all lines of business (Medicare, Medicaid and commercial).

This health industry transformation is outlined in my *Health Watch* article for May 2013.[1]

These new developments offer challenges and, also, a wealth of opportunities.

## FEDERAL AND STATE PROGRAMS

This article focuses primarily on common elements across both Medicare and Medicaid. However, the populations, payment systems, health system and regulatory requirements for both programs are very different. References at the end of the article provide more detail on various populations.

## FEDERAL PROGRAMS THROUGH CMS

CMS is the federal agency responsible for administering Medicare, Medicaid and other insurance programs. CMS—and its new Center for Medicare and Medicaid Innovation (CMMI)—has been very active.

One major part of the ACA is the move to "value-based-payment," such as readmission reduction and the effort to reduce hospital-acquired infections. These programs have been very visible in the industry. Early reported results have indicated that the change in payment methods under the ACA has improved quality and reduced readmissions and other adverse events.

## OTHER MAJOR NEW FEDERAL PROGRAMS

- ACOs (including both the Pioneer and Shared Savings ACOs)[2]
- Bundled payment[3]
- Comprehensive Primary Care (CPC) initiative[4]
- State demonstrations to integrate care for dual-eligible individuals (beneficiaries with both Medicare and Medicaid)[5]
- Physician Quality Reporting System (PQRS)

- Web-based comparative tools such as Hospital Compare
- Innovation grants

These programs have had high participation. For example, more than 4 million beneficiaries will be receiving care from several hundred providers participating in Medicare shared savings initiatives through ACOs.

In addition to the direct links, a summary of these and other programs is available in the Society of Actuaries (SOA) report "Measurement and Performance—Health Care Quality and Efficiency: Resources for Health Care Professionals (Third Edition)" (Section 5.1.2) and related Inventory.

## STATE PROGRAMS

Fiscal problems, plus powerful new technology, Web capabilities and increasing focus on health care costs are driving major action. However, the state programs are very diverse, with differences depending on sponsor and purpose. Some are working through waivers, some through Managed Medicaid, and others are running new dual demonstration projects. Some of these programs are of long-standing tenure and, often, have substantial public information available on their websites.

In the past, it was often difficult to track state-by-state programs. However, this is now much easier to do. The National Academy for State Health Policy (NASHP) and the Medicaid and Children's Health Insurance Program (CHIP) Learning Collaboratives (MAC Collaboratives) have websites with extensive summaries of state-level programs. There are also more than a dozen programs summarized in the SOA measurement report (Section 5.1.3) and related SOA Inventory.

At one level, the wide variations in pilot program approaches by state make understanding and comparisons difficult. However, these multiple pilot programs will, eventually, offer insights into which actions work to improve performance.

## THE DUAL CHALLENGES—ALTERNATIVE SOLUTIONS

Many initiatives are underway; each major type of initiative has a specific purpose. For example, PCMHs focus on the potential for enhanced primary care to improve patient outcomes. The financial incentives for the primary care physician are increased and aligned with his or her new responsibilities.

Underlying the many initiatives and pilot programs are dual challenges: (1) a fragmented U.S. health system; and (2) a payment system focused on production while not being accountable for results. Three fundamental questions and principles underlie most initiatives.

| | |
|---|---|
| **Who should act?** | A more responsible **health system** is needed. An entity (provider-based organization or individual provider) should be identified to accept financial and quality responsibility for patients. |
| **How should providers be paid?** | Modernize the **payment system** and align financial incentives for quality and efficiency. Also, offer incentives to reduce waste. |
| **How should system and payment be linked?** | Most initiatives offer an improved payment structure to providers in exchange for additional responsibility. These payments fund improvements in quality and financial results. |

CONTINUED ON PAGE 36

Fiscal problems, plus powerful new technology, Web capabilities and increasing focus on health care costs are driving major action.

## EXAMPLES OF "WHO"

For example, an ACO (hospital and/or physician group) is an organization that accepts accountability for quality and efficiency in their communities. As another example, PCMHs often focus on primary care and pediatric physicians.

These examples build on the various high-performance networks already available for certain individuals in a few parts of the country (for example, the networks behind some Medicare Advantage programs).

## EXAMPLES OF "HOW TO PAY"

New payment ideas often include explicit payments for quality—typically based on formal, generally accepted metrics. For example, the CMS ACO program has chosen 33 major metrics for its final standards—half of the number originally proposed.

Other financial arrangements range from small per-member payments to payments that can be tied to the total cost of care, such as shared savings programs or total capitation. Other options include bundled payments, capitation/salaried, global payments, pay for performance, or primary care payment reform.

In addition, there are mandatory programs such as the CMS initiatives on readmissions or hospital-acquired complications, and "never events." Often, multiple programs are used in combination.

## SUMMARY

In conclusion, we are seeing extraordinary times in the health industry. These new developments create challenges for everyone but also create a wealth of opportunities for you and your organizations. Individuals with financial and risk management expertise are essential to creating an improved and financially sustainable health care system for ourselves, our friends, and our communities.

## REFERENCES


**SOA References:**

Society of Actuaries Medicaid Listserv (also currently have ongoing conference calls)—the "Health Medicaid" listserv is near the bottom of the page

*http://www.soa.org/News-and-Publications/Listservs/list-public-listservs.aspx*

Measurement and Performance—Health Care Quality and Efficiency: Resources for Health Care Professionals (Third Edition)

Sections 5.1.2 and 5.1.3 are focused on social programs.

*http://www.soa.org/Files/Research/Projects/research-quality-efficiency-report-2010-update.pdf*

Measurement and Performance: Inventory (many examples from key websites)

*http://www.soa.org/Files/Research/Projects/research-quality-efficiency-inventory-2010-update.pdf*

**Other References**:

- *Health Affairs*
  - *http://www.healthaffairs.org/*
  - Monthly peer-reviewed articles focused on changes in the health system—typically has several articles focused on measurement and performance.
  - *Health Affairs* requires a subscription (it is free to Health Section members).
- Agency for Healthcare Research and Quality's (AHRQ's) Innovations Exchange

- *http://www.innovations.ahrq.gov/*
- National database and ongoing education tool about major innovations with significant pre-screened material.

- National Cardiovascular Data Registry (NCDR) from the American College of Cardiology (ACC)
  - *https://www.ncdr.com/webncdr/*
  - National disease registry with deep clinical references, supporting educational goals and created by a specialty society.
- State of Arkansas—Provider Payment Initiative
  - *http://www.paymentinitiative.org/Pages/default.aspx*
  - A statewide program across Medicaid and commercial programs to reward providers for quality care at appropriate cost on selected episodes of care.
- Medicare Payment Advisory Committee (MedPAC)
  - *http://www.medpac.gov/*
  - Supports Congress on Medicare topics.
- Medicaid and CHIP Payment and Access Commission (MACPAC)
  - *http://www.macpac.gov/*
  - Supports Congress on Medicaid topics.
- The National Academy for State Health Policy (NASHP)
  - *www.nashp.org/*
  - Background material and summaries of state-level programs.
- Medicaid and Children's Health Insurance Program (CHIP) Learning Collaboratives (MAC Collaboratives)
  - *http://www.medicaid.gov/State-Resource-Center/MAC-Learning-Collaboratives/Medicaid-and-CHIP-Learning-Collab.*
  - Summaries of state-level programs.

Editor's note: As of the printing date of this article, some of the listed links were not working. Please Google the relevant information, or contact the author for assistance. Thank you for understanding.

## ENDNOTES

1 Greger Vigen, "Health Care 2.0—Massive Implications of System Transformation," *Health Watch 72* (May 2013): 2, www.soa.org/Library/Newsletters/Health-Watch-Newsletter/2013/may/hsn-2013-iss72.pdf.

2 Centers for Medicare and Medicaid Services, "Accountable Care Organizations," accessed August 2013: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/index.html?redirect=/ACO/.

3 Ibid., "Bundled Payments for Care Improvement," accessed September 2013: http://innovation.cms.gov/initiatives/bundled-payments/.

4 Ibid., "Comprehensive Primary Care Initiative," accessed September 2013: http://www.innovations.cms.gov/initiatives/Comprehensive-Primary-Care-Initiative/index.html.

5 Ibid., "State Demonstrations to Integrate Care for DualEligibleIndividuals,"accessedSeptember2013: http://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/StateDemonstrationstoIntegrateCareforDualEligible-Individuals.html.

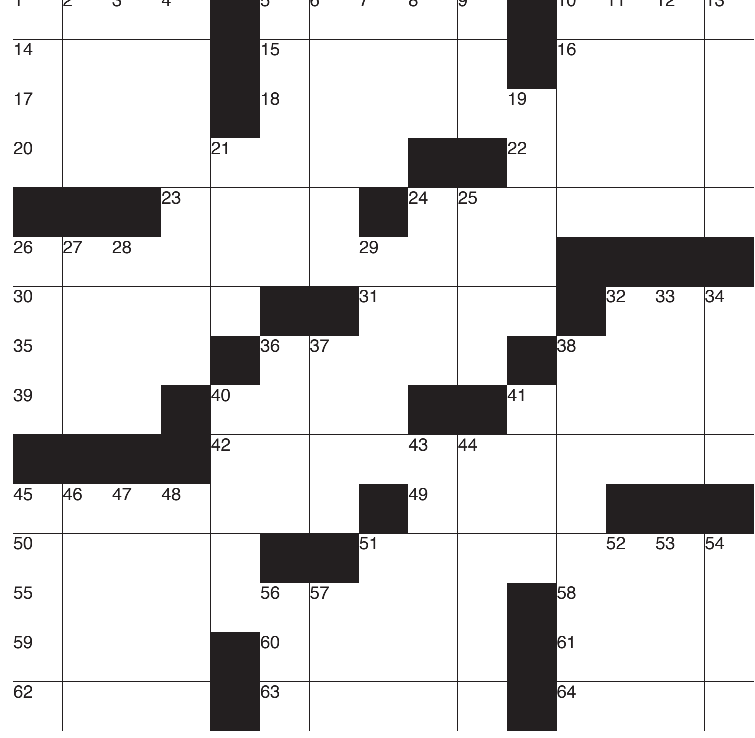
# PUZZLE CORNER

*By Ari Halpern*

**Ari Halpern** is a graduate of Johns Hopkins University and now works in tv production. Previously, he has had crossword puzzles published in *The New York Times*.

## ACROSS

1. Stereotypical name for a French poodle
5. Musical conclusions
10. Guys' companions
14. College founded by King Henry VI in 1440
15. Signs, at times
16. Lake with 871 miles of shoreline
17. Gulf missile
18. Make it to remember
20. Withers
22. Directed
23. Political party?
24. Emerges out of thin air
26. Cast that famously includes a duck, a pig, and a bunny
30. What only a married person may have
31. Zip
32. Recipe amt.
35. Laurel in films
36. Response from an unable sort
38. Baylor University town
39. Woody or Buzz Lightyear in a movie
40. At any time
41. "The Incredibles" studio
42. Issues popular with children
45. Brief movie description
49. Latvian capital
50. Tax time
51. Forked
55. Leader at the Battle of Little Bighorn
58. Jumped head first
59. Polynesian potable
60. Like a coveted circle
61. Deli orders



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62. "__ All That," 1999 Freddie Prinze Jr. movie
63. Unskilled workers
64. Reb opponent

## DOWN

1. Admit, with up
2. Desire
3. Number seen near GHI
4. Letterman or Lee Roth, by birth
5. "Airplane" genre
6. Denver-style breakfast plate
7. Lions' lairs
8. Worker on the hill?
9. Welfare org.
10. Legendary lamp denizen
11. Baking delight
12. See 57-Down
13. Idea beginnings
19. Error, as in judgment
21. High-rise-living attraction
24. Author of much poetry, Abbr.
25. Cooped (up)
26. It can be a to-do
27. More than suspecting
28. Oil of __
29. Take a piece from?
32. It is hailed
33. Visual examination
34. 28-Down target
36. Terrible guy?
37. Surrender
38. Potter's main course
40. Post with articles?
41. Mall call
43. Gotten up
44. Donors
45. Does not have
46. Program that ended its 25-year run in 2011, familiarly
47. Dead zone?
48. "__ at The Palace...!," 2008 concert
51. First Bond film for Sean Connery
52. "Saturn Devouring His Son" artist
53. Tied
54. It's often found in front of a pupil
56. With the times
57. With 12-Down, the equivalent of 33.814 fluid ounces

## PUZZLE ANSWER

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