



- 1** Is There Currently an Underwriting Cycle?
By Mark E. Shaw
- 2** Letter from the Editor
By Mary van der Heijde
- 3** Chairperson's Corner
By Kevin Law
- 10** Assessing the Impact of Cost Sharing on the Induced Demand for Prescription Drugs to Support Part D Medicare Pricing
By Kevin Pedlow
- 14** Enterprise Risk Management: One Size Does Not Fit All
By Mark Whitford
- 25** Soundbites from the American Academy of Actuaries' Health Practice Council
By Heather Jerbi and Tim Mahony
- 30** SOA 2012 Health Meeting Highlights
By T.J. Gray, Warren Cohen, Nathan Eshelman and Joy McDonald
- 36** SOA 2012 Health Meeting Interview with Chairperson Daniel Bailey
- 40** SOA 2012 Health Meeting Interview with Mary Milla
By T.J. Gray and Doug Norris
- 44** SOA 2012 Health Meeting Interview with Paul Ginsburg
By T.J. Gray and Doug Norris
- 46** REX Pool Open for Business!
By Steven Siegel
- 48** Medicare Advantage Hierarchical Condition Categories: Updated Study Results
By Corey Berger and Eric Goetsch

ISSUE 70 OCTOBER 2012

Health Watch

Is There Currently an Underwriting Cycle?

By Mark E. Shaw

Several actuarial models exist for determining appropriate levels of capital and surplus (collectively “surplus” herein) for Blue Cross & Blue Shield (Blues) affiliate companies. These models have as an outcome a range of risk-based capital (RBC) ratios that purport to establish a surplus level consistent with a 99 percent probability of maintaining the company surplus level above a 200 percent RBC ratio and at least a 90 percent probability of maintaining the company surplus level above a 375 percent RBC ratio (the level at which the BCBS Association becomes concerned about, and begins monitoring, company surplus).

Each of the models has a foundational assumption of an underwriting cycle—an alternating period of underwriting gains and losses—which significantly drives the results of the model. The existence of an underwriting cycle was demonstrably true from the late 1970s to the early 1990s, but it has received very little analytic attention in the actuarial literature in at least a decade. The underwriting cycle theory adopts the view that competitors cyclically adjust prices based on industry profitability (or the lack thereof) so as to produce approximately a sine-wave pattern of profitability, with several years of industry profitability followed by several years of industry losses before returning again to a period of profitability. Many cycle theorists use underwriting gain or loss as their profitability measure, but some use net income, which ultimately correlates better with changes in surplus and is arguably the better measure.

Underwriting cycles are a market-level concept, not a company-level concept. The typical explanation for an underwriting cycle is that, when industry profitability rises to a level such

CONTINUED ON PAGE 6

Letter from the Editor

By Mary van der Heijde



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Considering that our vocation is fundamentally focused on impartiality and objectivity, I think it's striking how much our work and political dynamics have become intertwined. The fact that we're waiting with baited breath for news from the Supreme Court, and are delving into both our federal and state-level politics to help gain bearings about our daily work, shows how much our market has changed. In "Soundbites from the Academy," Heather Jerbi and Tim Mahony describe the recent ongoing efforts the American Academy of Actuaries' Health Practice Council has taken on related to health care reform. It is interesting yet not surprising to note the wide range of various topics they have been tackling in this regard. Their article includes links to the actual letters they have submitted to entities such as the U.S. Department of Health and Human Services (HHS) or the Internal Revenue Service (IRS). These letters walk an impressive line between giving useful guidance while remaining fully non-partisan.

In this issue's "Chairperson's Corner" feature, Kevin Law discusses recent Health Section Council activities and projects. There are a significant number of SOA members who identify "health" as their primary area of practice, but who are not members of the Health Section. Kevin provides more information about this issue.

The 2012 SOA Health Meeting was held in New Orleans in June. This issue includes a recap of the highlights of the meeting and an interview with the chairperson of the meeting, Dan Bailey. As well, we have included interviews with Mary Milla and Dr. Paul Ginsburg, both keynote speakers at this year's meeting.

Mark Whitford has contributed an article about enterprise risk management (ERM), including information about both increased pressures companies are facing, and how various attributes can affect ERM. Also in this issue, Corey Berger and Eric Goetsch discuss updated study results related to Medicare Advantage Hierarchical Condition Category research, and Kevin Pedlow discusses the impact that cost sharing could have on induced demand for prescription drugs within the context of Part D pricing.

The concept of an underwriting cycle (that is, alternating periods of underwriting gains and losses) is a commonly discussed factor when evaluating market-level trends. Mark Shaw delves deeper into this topic, to investigate recent evidence on whether these underwriting cycles still exist. In a previous issue, Steve Siegel discussed the new strategy the SOA has adopted for sponsoring research. The Research Expanding Boundaries Pool, or REX Pool, has now been implemented. In this issue, Steve outlines the process by which ideas may be funded by the REX Pool. Please feel free to contact him directly with any research ideas you have, or with any questions about this process.

After three years in this role, this will be my final issue as the editor-in-chief of *Health Watch*. I will be transitioning this role to Kurt Wrobel, because I am taking on a new responsibility as chair of the Health Section Research Committee. I have enjoyed my role with *Health Watch*, and have recognized the responsibility that I and the other editorial members have to you, our fellow members of the Health Section. I know that Kurt will treat this role with the same diligence and respect.

In my role as editor-in-chief, I have greatly appreciated the assistance and support of our editorial board. I would like to personally thank Karin Swenson-Moore, Pat Kinney and Jeff Miller for their enthusiastic and thoughtful review and input. I would like to extend my appreciation to the members of the Health Section Council, the publication department within the SOA, and to others who have assisted us with finding and refining content for *Health Watch*. We have been fortunate to have some of the best in the industry contribute articles to this publication.

Kurt has made valuable contributions as a volunteer with the SOA, and I'm confident he will bring that same leadership and insightfulness into the role of editor-in-chief of *Health Watch*.

We hope that you find the content in this issue to be interesting and relevant, and welcome any thoughts or comments you have. ■



Chairperson's Corner

By Kevin Law

Recap of the Health '12 Meeting

The Society of Actuaries (SOA) Health '12 Meeting in New Orleans was a great success with 869 attendees. While the Health Section has the leadership role in organizing the meeting content, there were 12 other SOA sections that collaborated with us to meet the educational needs of health actuaries. This meeting is one of the Health Section's most important responsibilities, as we designed and recruited speakers for more than 50 sessions.

Tom Davenport, the general session speaker, focused on business analytics, which was a theme throughout the meeting. One of the highlights was our luncheon keynote speaker, Mary Milla, who delivered a lively, informative and practical session on effective business presentations. Attendees enjoyed numerous networking opportunities, including a ghost tour.

While the aggregate rating by the attendees of the sessions' quality was high, we are always looking to improve, and we will analyze feedback to determine recommendations to further enhance future health meetings.

Many thanks to **Dan Bailey**, the Health '12 Meeting chairperson, **Karl Volkmar**, the vice-chair, and **Kerri Leo**, the Professional Development manager at the SOA. Kerri handles many logistical aspects and without her dedication and focus, the meeting could not happen. Dan and Karl did a wonderful job recruiting session coordinators and planning out our topics.

Upcoming SOA Meetings with Health Content

At October's SOA annual meeting, the Health Section will be sponsoring our maximum available allotment of 15 sessions. Several sessions will cover various topics related to health care reform, but there will also be sessions addressing public policy, reserving, financial reporting, trend, quality, comparative effective-

ness, accountable care organizations, patient-centered medical homes, business analytics and professionalism.

I would like to thank **Dewayne Ullsperger** and **Valerie Nelson** for their leadership in the development and organization of the health sessions at the annual meeting. The meeting will be Oct. 14–17, 2012 at National Harbor, Md., and I hope you will join us there.

The Health Section's annual "boot camp" will be held Nov. 5–9, 2012 at the Vdara Hotel & Spa in Las Vegas, Nev. The structure of the boot camp allows for material to be covered at a much greater depth than is possible during the typical 90-minute meeting session. Topics this year include:

- Health pricing, both Medicare & commercial
- Medical school for actuaries
- Ethics and professionalism for actuaries
- Three R's of the Affordable Care Act (ACA): risk adjustment, risk corridors and reinsurance
- Predictive modeling.

Thanks to **Pat Kinney** and **Nancy Hubler** for their efforts to organize our boot camp.

Health Section Council (HSC) Activities and Projects

The HSC is finalizing strategic and tactical plans for the Health Section. These plans are created in recognition of the extraordinary times we face, due to the large scale changes occurring as we implement the Affordable Care Act. There is great potential for expansion of the health actuarial role and new employment possibilities, but we must be proactive and visible on the national health care reform stage in order to take advantage of many of these opportunities.

At the same time, we are striving to develop a closer relationship with Canadian health actuaries, and to make the Health Section more relevant for them. **Maureen Premdas** recently



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To join the section, SOA members and non-members can locate a membership form on the Health Section Web page at <http://www.soa.org/health/>

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CONTINUED ON PAGE 4

accepted the new role of Canadian liaison to the HSC. In this role, she will identify opportunities and promote Canadian SOA member involvement in section activities and content, plus provide updates on health developments in Canada. One of the early results of this initiative is a webcast this fall, covering North American biological and specialty drugs, which is intended to be of interest to both U.S. and Canadian health actuaries.

In the prior issue of *Health Watch*, I described the various benefits of belonging to the Health Section, and I mentioned our concern that a significant percentage of SOA members (36 percent) identify “health” as their primary area of practice, but do not belong to the Health Section. These 1,500+ health actuaries have the following demographic characteristics:

- Primarily concentrated at both ends of age spectrum, that is, younger than 35 or older than 64, or
- Work outside the United States, or
- ASA, as opposed to an FSA, or
- Less than five years of experience, or
- Belong to industry such as banking, investments or government.

Table 1
If the ACA is upheld, annual health care coverage costs will:

	Decrease	Increase ≤ 5%	5% ≤ Increase ≤ 10%	Increase ≥ 10%
Large group employers, (both fully insured & self-funded)	6%	27%	40%	27%
Currently insurable persons in the individual health insurance market	10%	11%	16%	63%

None of these attributes is surprising. Any suggestions on steps the HSC can take to publicize and/or enhance the value of the Health Section to these actuaries will be appreciated.

On the positive side, in recent years the Health Section has been either in first place, or very close to the top, compared to other SOA sections with respect to our rate of membership retention, indicating that our current members are perceiving value. However, we would like to improve our value to those who are not joining the section, because the efforts that our volunteers make and memberships fund are so valuable to us all.

Affordable Care Act

One of the issues discussed frequently at Health '12 was the pending ruling by the Supreme Court on the constitutionality of the ACA. We now know the decision that the legislation was substantially upheld, with the primary exception being that the federal government cannot force the states to expand the Medicaid program as was specified in the legislation by withholding funding.

A poll taken at one of the Health '12 general sessions, consisting of about 140 respondents, produced the not surprising results shown in Table 1—actuaries expect health care costs to increase due to the ACA.

Only about 15 months remain until the implementation date of several significant provisions in the ACA, including the exchange markets for the purchase of health insurance. Health plans, employer, and government entities will likely accelerate the pace of preparations to be in compliance by Jan. 1, 2014.

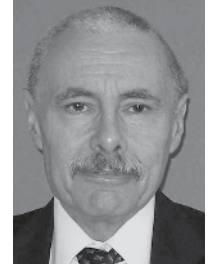
Thanks and Best Wishes

By the time this issue of *Health Watch* is published, five new members will have been elected to the HSC. Four will have three-year terms, while the fifth will have a one-year stint to fill the remaining term of **Kristi Bohn**, who had to vacate her seat earlier this year when she became the Health Fellow

at the SOA. Fortunately, we did not lose Kristi's participation and support as she continues to work enthusiastically with the HSC.

I would like to express my sincere thanks to the three HSC members who are rotating off of the HSC with me this fall: **Sudha Shenoy**, **Ross Winkelman** and **Jon Hendrickson**. All three have made significant contributions and their efforts are very much appreciated.

A special thanks to **Jill Leprich**, Section Specialist at the SOA, who provides ongoing invaluable support and keeps the HSC functioning. Finally, best wishes for a successful and productive year to the incoming chairperson, **Pat Kinney**, and the new Health Section Council who will begin work in October. ■



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The SOA ERM Exam Committee is looking for volunteers.

Help educate the next generation of actuaries specializing in the ERM field and seeking a CERA designation. In addition to your philanthropic contribution to the profession and the networking opportunity this exam committee offers, the time spent researching exam material counts towards many of your continuing education credit requirements.

Our primary needs are in question writing and development. Also, we are looking for help in enhancing the new Case Study.

The ERM Exam encompasses six distinct tracks and we are interested in volunteers of any background. However, we are particularly short of volunteers in the health track. Specifically, health actuarial volunteers would design appropriate health-related case study questions and ensure the appropriateness of core health questions based upon the curricula.

The qualified volunteer needs to meet certain deadlines, though the timing of this work is otherwise very flexible. We would prefer volunteers who will commit to multiple exam sessions in order to maintain committee continuity and groom volunteers for future committee leadership roles. The SOA provides training. If you are interested, please contact Sean Conrad at 704-731-6382 or sean.conrad@hlamerica.com.

In total, more than 200 total years of data are analyzed and presented in this paper.

that some competitors are willing to take a lower profit to gain market share, they begin cutting prices. To retain market share, competitor companies cut their prices until market prices spiral down to where companies begin losing money. When losses exceed a company's comfort level, it begins raising prices to recover profitability, allowing competitor companies to also begin raising prices, and a reverse spiral occurs until once again industry profits reach a point where some competitors become willing to accept lower margins to gain market share, lower their prices, and the cycle restarts.

In recent years, actual company operating results do not seem consistent with an underwriting cycle. As an example, in a presentation made at the June 2012 Society of Actuaries meeting, Ed Cymerys, the chief actuary for Blue Shield of California, indicated that his company had consistently achieved an annual net income of between 2 and 7 percent in each year since 2000. He went on to explain an approach his company has adopted to limit the company's annual net income to 2 percent of revenue, an income level at which his company's RBC ratio would be stable over time.

There are a number of reasons that the underwriting cycle may no longer exist:

- In the late 1980s and early 1990s, state insurance regulators, through the National Association of Insurance Commissioners (NAIC), developed a uniform solvency system, introducing "risk-focused" processes into the supervisory system and creating the RBC tool to replace fixed capital requirements that did not vary by company size or risk exposure.
- Companies developed better risk management processes. Most well-run medical insurers monitor actual-to-expected claims on a number of rating variables on a monthly basis and are quick to make changes if unfavorable trends begin to emerge. Data warehouses have allowed carriers to drill into a much finer level of detail to identify problems as they first develop, rather than waiting until they are evident and worse. Administrative systems now allow for expeditious and versatile implementation of rate

increases within a couple of months of decision and approval; in general, rate increases can be completed in virtually all policies within 18 months of the first emergence of a negative trend.

- U.S. regulators have made continuous improvements to the financial regulatory system over the past two decades, with many enhancements such as the model audit rule, risk-focused financial analysis and examination, and uniform statutory accounting practices and procedures. Today, an enhanced risk-focused surveillance process in every state focuses on the insurer's risks, the mitigation of those risks, and prospective risk analysis.
- The NAIC conducts additional regulatory monitoring through surveillance processes such as the Financial Analysis Solvency Tools (FAST) and the Financial Analysis Working Group.
- Regulators are processing rate increases more quickly. Many insurance departments have received substantial federal grants under the Affordable Care Act (ACA) to enhance their rate review procedures. States are changing their laws and regulations to reflect best practices, and developing more sophisticated technology and expertise for reviewing rates. The net effect of these enhancements is to reduce the time required for regulatory approvals.
- Many health insurance markets have become oligopolistic. Market share is more concentrated among a few insurers with more disciplined reactions to competitor pricing, and there are fewer aggressive newcomers to pressure the prices of more established insurers.

While there are many reasons to believe that the historic underwriting cycle is no longer today's reality, the purpose of this paper is to look for empirical evidence of an underwriting cycle in the statutory results of Blues affiliates of a certain size over the last decade-plus. Related to the purposes of a separate project, evaluating the surplus of a particular Blues plan with a little less than \$3 billion in net premiums written in 2010, this paper examines the experience of all Blues affiliates with \$1.8 to \$3.8 billion of net premiums written in 2010. There were 17 such Blues affiliates in this premium range, as follows:

BlueCross BlueShield of TN Inc.
 Group Hospitalization & Medical Svcs.
 Blue Cross Blue Shield of MN
 BCBS of GA Inc.
 HealthNow NY Inc.
 Premera Blue Cross
 BCBS of MA Inc.
 Regence BlueShield
 Horizon Healthcare of New Jersey, Inc.
 QCC Insurance Co.
 Anthem Health Plans Inc.
 Wellmark Inc.
 Anthem Health of VA
 BCBS of SC
 Regence BlueCross BlueShield of OR
 CareFirst of MD Inc.
 LA Health Service & Indemnity Co.

Exhibit 1
Comparison of 17 Blues Plans - Profit by Calendar Year

Year	Total Co	# w/ Pos		Net Inc as		U/W G/L as			
		Net Inc	% w/ Pos	% of Tot	Std Dev Net	U/W	% w/ Pos	% of Tot	Std Dev
2011	17	16	94%	3.1%	2.4%	12	71%	2.5%	3.5%
2010	17	16	94%	4.3%	2.8%	14	82%	3.1%	4.0%
2009	17	13	76%	2.2%	2.5%	9	53%	1.6%	4.2%
2008	17	12	71%	2.2%	4.4%	13	76%	2.6%	4.3%
2007	17	16	94%	4.3%	2.9%	13	76%	3.0%	4.4%
2006	17	17	100%	4.9%	2.9%	16	94%	4.1%	4.1%
2005	17	17	100%	5.3%	2.2%	16	94%	5.0%	3.3%
2004	16	16	100%	4.1%	3.1%	14	88%	4.1%	3.5%
2003	16	15	94%	3.6%	2.8%	14	88%	3.5%	2.7%
2002	15	14	93%	3.5%	2.9%	12	80%	3.3%	3.1%
2001	15	13	87%	3.3%	3.2%	14	93%	2.0%	2.0%
2000	15	15	100%	3.2%	2.1%	10	67%	1.3%	2.6%
1999	15	13	87%	2.3%	2.1%	8	53%	0.2%	2.3%
All	211	193				165			
Unweighted Averages Across Years:			91%	3.6%	1.0%		78%	2.8%	1.3%

I obtained the five-year history pages of these 17 plans' annual statement filings in 2011, 2007 and 2003 from the NAIC. Thirteen years of data were obtained on each company, from 1999 to 2011, as they were available; data were available for all companies from 2005 forward. In total, more than 200 total years of data are analyzed and presented in this paper.

Experience by Calendar Year

Exhibit 1 summarizes the data by calendar year, probing for evidence of an alternating pattern of industry profitability. Two common profitability measures are used: net income and underwriting gain/loss, both expressed as a percentage of the companies' total revenue.

Measured as the companies' net income experience, at least 12 of the 17 companies (71 percent to 100 percent, and 91 percent on average) were profitable in any given year. Moreover, there was little variability in average annual profitability: the companies' net income averaged 3.6 percent of total revenue, with a standard deviation on average annual profitability of 1.0 percent. There were no years

in which average profitability was negative, and there does not appear to be anything approaching a traditional underwriting cycle defined as a repeating series of several years of industry gains followed by several years of industry losses. Instead, seven years of increasing gains in net income were followed by six years of significant but fluctuating gains. There is no hint of an industry loss period: based on the annual average net income and standard deviation observed over the past decade-plus (1999–2011), the chance of industry-average net income being less than 0.6 percent in any year was less than 0.13 percent—a far lower likelihood than was targeted by the aforementioned actuarial models.

Analysis of the companies' underwriting gain/loss experience yields similar conclusions. In any given year, 53 to 94 percent (on average, 78 percent) of the 17 companies had an underwriting gain, and there were no years where the average industry underwriting result was a loss. Again, there appears to be no evidence supporting a traditional underwriting cycle. The relative variability in underwriting gain/loss (a standard deviation on average annual profitability of 1.3 percent relative to a 2.8 percent mean) was greater than the variability of net income, but based on these 13 years of experience, there is nevertheless just a 2.1 percent chance that the industry would ever have a year where the average

CONTINUED ON PAGE 8

underwriting gain/loss was as low as 0.2 percent (as it did in 1999).

Experience by Total Revenue

To explore whether companies with different levels of total revenue might have different net income and underwriting gain/loss experience, Exhibit 2 summarizes net income and underwriting gains/losses as a percentage of total revenue for the 17 companies from 1999 to 2011, within total revenue categories.

In each total revenue category, 89 to 97 percent of the 17 companies (on average, 91 percent) were profitable in any given year. The variability in profitability in mean net income by annual revenue was very small in each total revenue category: average net income was 3.8 percent with a standard deviation

for the mean net income across the various revenue categories of 0.6 percent. Average profitability in each revenue category was at least 2.7 percent, suggesting that neither smaller nor larger companies experienced a traditional underwriting cycle.

Looking at the companies' underwriting gain/loss experience yields the same conclusion. From 56 to 94 percent (on average, 78 percent) of the 17 companies had an underwriting gain in any given year. The variability in mean underwriting gain/loss by annual revenue was small: with a 3.0 percent mean underwriting gain/loss across the various revenue categories, the standard deviation on the annual averages was 1.5 percent. In no annual revenue size category was the average underwriting gain less than 1.4 percent. Thus, regardless of the level of total revenue, there is no evidence that these companies experienced an underwriting cycle.

Exhibit 2
Comparison of 17 Blues Plans - Profit by Annual Total Revenue
Aggregated results from 1999-2011

Total Revenue	# of Occurrences	# w/ Pos Net Inc	% w/ Pos Net Inc	Mean Net Inc	Std Dev Net Inc	# w/ Pos U/W	% w/ Pos U/W	Mean	Std Dev
								U/W G/L	U/W G/L
\$2.8+ billion	33	30	91%	4.6%	3.1%	31	94%	5.6%	4.7%
\$2.4 - 2.799 billion	29	28	97%	4.0%	2.9%	25	86%	3.7%	3.5%
\$2.0 - 2.399 billion	47	42	89%	2.7%	2.8%	34	72%	1.8%	3.0%
\$1.6 - 1.999 billion	41	38	93%	3.9%	2.5%	32	78%	2.8%	2.9%
\$1.2 - 1.599 billion	36	32	89%	3.9%	3.1%	29	81%	2.8%	3.0%
\$1.199 billion <	25	23	92%	3.9%	3.2%	14	56%	1.4%	3.3%
All	211	193				165			
Unweighted Averages Across Categories			91%	3.8%	0.6%		78%	3.0%	1.5%

Experience by Company

Finally, to investigate whether each company's results might be driven by factors unique to that company, Exhibit 3 displays the companies' net income and underwriting gain/loss experience as a percent of total revenue by company.

Between 69 and 100 percent (on average, 91 percent) of the companies had a positive net income in any given year. Eight of the 17 companies were profitable in every year, and all but three companies were profitable in at least 85 percent of the years. The variability in profitability in mean net income by company was substantial: with a variance across average company results of 2.2 percent. While no companies experienced average profitability below 1.3 percent, six companies averaged net income that was less than or equal to 2.5 percent of total revenue, and four experienced average net incomes above 6 percent of total revenue. This wide variation suggests that company-specific factors drove variances in net income profitability.

Exhibit 3
Comparison of 17 Blues Plans - Profitability by Company 1999-2011

Company (NAIC #)	Total Years	# w/ Pos NI	% w/ Pos NI	Std Dev		# w/ Pos U/W	% w/ Pos U/W	Mean		Std Dev
				NI	NI			U/W G/L	U/W G/L	
Premera Blue Cross (47570)	13	13	100%	2.7%	1.6%	13	100%	2.0%	1.2%	
Group Hospitalization & Med Svcs (53007)	13	13	100%	2.9%	1.2%	12	92%	1.7%	1.1%	
Regence BlueShield (53902)	13	11	85%	2.5%	2.7%	7	54%	0.9%	3.1%	
BCBS of TN Inc (54518)	13	13	100%	4.7%	1.9%	13	100%	4.8%	2.6%	
BCBS of GA Inc (54801)	13	13	100%	6.8%	1.8%	11	85%	5.9%	3.4%	
Regence BCBS of OR (54933)	13	11	85%	1.3%	2.2%	4	31%	-0.5%	2.2%	
Wellmark Inc (88848)	9	7	78%	2.4%	4.8%	6	67%	1.2%	3.7%	
Anthem Health of VA (71835)	7	7	100%	8.8%	1.3%	7	100%	12.4%	1.9%	
Anthem Health Inc (60217)	13	12	92%	6.2%	2.7%	12	92%	7.6%	3.6%	
BCBSM Inc (55026)	13	10	77%	1.8%	2.4%	8	62%	0.9%	2.7%	
QCC Ins Co (93688)	13	11	85%	2.8%	2.7%	11	85%	2.6%	2.2%	
Horizon Hlthcare of NJ Inc (95529)	13	13	100%	3.1%	0.7%	13	100%	2.6%	1.0%	
Louisiana Health Services (81200)	13	12	92%	2.9%	2.0%	5	38%	0.1%	1.9%	
Health Now of NY Inc (55204)	13	13	100%	2.4%	1.3%	11	85%	1.7%	1.4%	
Carefirst of MD Inc (47058)	13	9	69%	1.4%	2.4%	9	69%	0.5%	1.5%	
BCBS of SC (38520)	13	13	100%	6.7%	2.2%	13	100%	5.4%	2.6%	
BCBS of MA Inc (53228)	13	12	92%	3.6%	2.6%	10	77%	2.1%	2.1%	
All	211	193				165				
Unweighted Average Company Results:			91%	3.7%	2.2%		78%	3.1%	3.3%	

Again, these results are consistent with those that derive from reviewing the companies' underwriting gain/loss experience. While there was significant variability in underwriting results across companies in any given year, on average, 78 percent of compa-

nies experienced an underwriting gain in any given year. Moreover, 11 of the 17 companies had an underwriting gain in at least 77 percent of calendar years, and only two companies had an underwriting gain in less than half of the calendar years. Again, the variability in mean underwriting gain/loss by company was substantial, suggesting that company-specific factors drove variances in underwriting gain/loss: five companies had average underwriting gains that were less than 1.0 percent of total revenue; seven companies had average underwriting gains between 1.2 and 2.6 percent of total revenue; and five companies had average underwriting gains that were at least 4.8 percent of total revenue.

While underwriting cycles are, as described above, an industry-level phenomenon, it is of some interest that loss years at neither the industry nor company level occurred in anything resembling a sine-wave pattern. As reported in the following table, even among the three companies with the lowest average underwriting gain from 1999 to 2011 (highlighted in Exhibit 3), each company's underwriting results appear to be random fluctuations around a very low mean underwriting gain.

As illustrated in Exhibit 4 there is no common pattern to the above annual results, and the results do not correlate to a recognizable underwriting gain/loss cycle. There is some convergence in the tallest peak (2005) for LA Health and Regence OR, but this appears to be an unusual coincidence, as there is no convergence of peaks in any other year.

Conclusions

It should be noted that this paper's scope is limited to the question of whether an underwriting cycle currently exists and does not address the appropriateness of current RBC formula calculations. The author is aware that there are ongoing discussions about whether and how to adjust such formulas for certain risks and given the current health care environment.

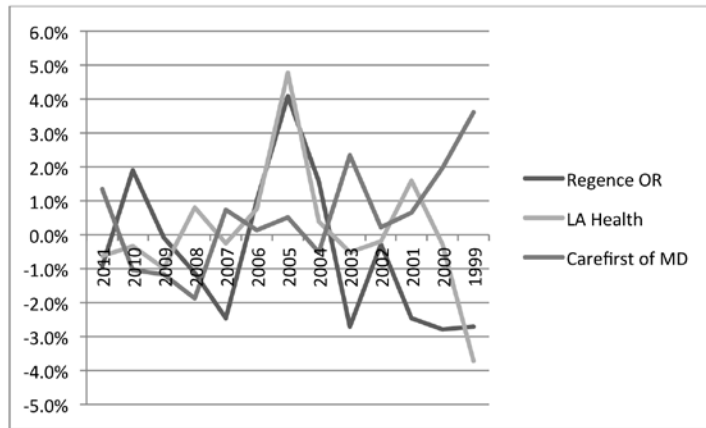
This analysis considers the 1999–2011 profitability of all mid-sized Blues-affiliated companies—that is, those with \$1.8 to \$3.8 billion of net premiums written in 2010. The experience of these companies

Exhibit 4

Results for 3 Companies with Lowest Average Underwriting Gain 1999-2011

Underwriting Gain/Loss as % of Total Revenue by Calendar Year

	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
Regence OR	-0.9%	1.9%	-0.1%	-1.1%	-2.5%	1.0%	4.1%	1.6%	-2.7%	-0.3%	-2.5%	-2.8%	-2.7%
LA Health	-0.6%	-0.3%	-1.0%	0.8%	-0.2%	0.8%	4.8%	0.4%	-0.5%	-0.2%	1.6%	-0.3%	-3.7%
Carefirst of MD	1.4%	-1.0%	-1.2%	-1.9%	0.7%	0.1%	0.5%	-0.5%	2.4%	0.2%	0.7%	2.0%	3.6%



does not support the contention that an industry underwriting cycle has occurred during the last 13 years. While these companies' net income and underwriting gains did vary from year to year as a percent of total revenue, in the aggregate, the Blues-affiliated plans enjoyed 13 years of uninterrupted profitability. Factors unique to the particular companies, not industry conditions, appear to account for variability in profit.

These findings strongly indicate that actuarial models seeking to establish appropriate target surplus levels for health insurers should not assume an underwriting cycle exists. Abandoning this assumption in line with actual industry experience, all else equal, would reduce the surplus targets for the companies considered in this analysis and, presuming the results hold more broadly, for all companies. This in turn could allow some companies—those that currently hold very high surplus—to reduce their surplus without sacrificing sought-after high probabilities of maintaining surplus above threshold RBC ratios. ■



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Assessing the Impact of Cost Sharing on the Induced Demand for Prescription Drugs to Support Part D Medicare Pricing

By Kevin Pedlow



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Medicare Part D pricing actuaries are challenged by many forecast assumptions that affect the final developed member premium. Not only are pharmacy costs forecast, but the Centers for Medicare & Medicaid Services (CMS) revenues and benchmarks must also be forecast. The multitude of Bid Pricing Tool entries, complex benefit designs and full disclosure of every assumption place a significant responsibility on the actuary. The large amount of analysis and assumptions involved in bid development and the integration of each issue further adds to the complexity.

Within all of this work is an assessment of the induced prescription drug use resulting from the cost sharing of enhanced alternative benefit designs. Many actuaries find this forecasting to be difficult to develop and support, and struggle to find a sound basis for developing induced demand factors for drug pricing. Bid desk review and audit do not allow for an explanation that assigns these factors based purely on “actuarial judgment,” but require that judgment to be supported with consideration of data and research.

Fortunately, there are studies that provide all of the necessary information to formulate prescription drug induced demand models. These studies provide a wide variety of insight and can help with the development of models that may be unique to different populations and to the cost controls of different plan sponsors and plan types.

Key Information for Developing an Induced Demand Slope

A substantial resource for induced demand information is the AARP Public Policy Institute Research Report from April 2008, titled *How Prescription Drug Use Affects Health Care Utilization and Spending by Older Americans: A Review of the Literature*, by Cindy Parks Thomas, Ph.D. (AARP Research Report). The AARP Research Report is most valuable as it summarizes the results of a wide set of studies and presents consensus findings from these studies.

The key goal of pricing for the induced demand is assessing the slope of the demand relative to the changes in cost-sharing levels. The AARP Research Report presents a consensus finding that a 10 percent increase in drug cost sharing is associated with a 1 to 6 percent decrease in drug use. This is a wide range of results, and it is important that the actuary selects the demand slope that best represents the population considered for pricing. Fortunately, the AARP Research Report provides insight to help narrow this range and select an appropriate slope.

Measuring the impact of induced demand for a population due to varying the cost-sharing amount is extremely difficult, separate from the attraction of higher utilizing members to richer benefit designs. This is mentioned in the AARP Research Report, and it is noted that not all studies have used adequate controls for these unobserved factors. This suggests that true demand for a fixed population leans to the lower side of the reported range, as the larger changes may include the effect of attracting a less healthy population.

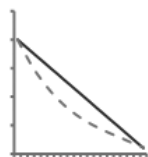
As noted in the AARP Research Report, managed care populations use drugs differently than other populations, and the effects of cost sharing may be lower than those for the other populations. This gives guidance for selecting the slope of demand for the prescription drug (PD) portion of an MA-PD

➤ AVAILABLE RESEARCH

AARP PUBLIC POLICY INSTITUTE RESEARCH REPORT



CHANDRA, GRUBER & MCKNIGHT



STUDY CAN BE INTERPRETTED SUCH THAT DEMAND ELASTICITY IS MORE LINEAR TO COPAYS THAN COINSURANCE

plan separately from the prescription drug plan only (PDP Only) plan designs.

While demand for both essential and non-essential drugs is impacted by cost-sharing levels, the non-essential drug use is more responsive to cost-sharing levels.

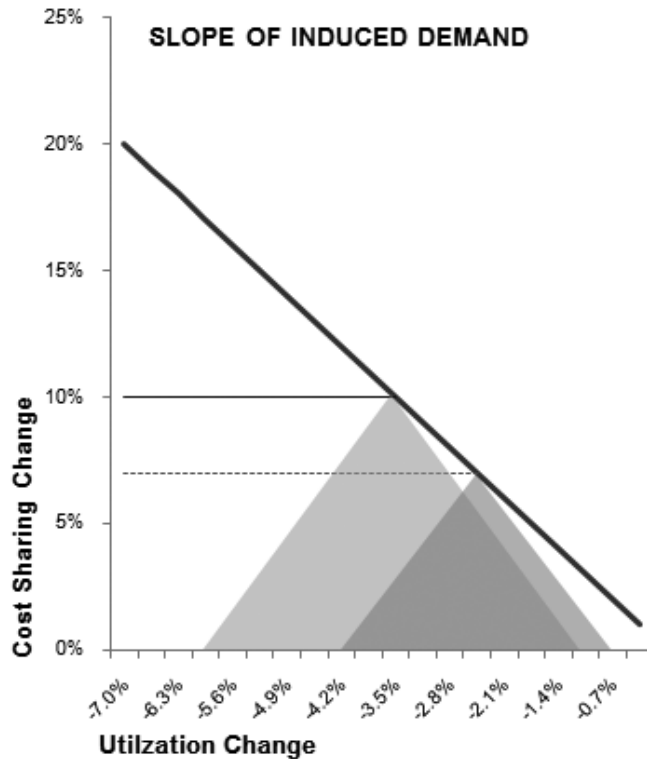
Benefit limits of all kinds decrease prescription drug use. This information is particularly important when considering the benefits, as most Part D plan designs apply only to cost below the Initial Coverage Limit (ICL).

Considerations for Developing an Induced Demand Model

The actuary will give consideration to whether induced prescription drug demand will be priced as linear with respect to a fixed dollar copay change or a fixed percent coinsurance change. This consideration has not been analyzed by any of the studies, and there does not appear to be substantial evidence that demand is more closely linked to either. The separate study *Patient Cost-Sharing, Hospitalization Offsets, and the Design of Optimal Health Insurance for the Elderly*, by Amitabh Chandra, Jonathan Gruber and Robin McKnight in March 2007, provides some data that can be used, but even this is a matter of interpretation. Each actuary's own experience, and the experience of the client, may enter into the decision regarding this assumption.

The studies find that benefit limits of any kind affect drug use. The slope of the demand curve should consider the portion of drugs that are subject to the cost-sharing benefit being evaluated. In most instances, the cost-sharing benefit is limited to the drugs applicable below the ICL. It will be important to understand the portion of total drug costs applicable to amounts below the ICL in order to develop the induced demand model.

Essential drugs have demand that is less influenced by cost sharing than non-essential drugs. The actuary must consider which drugs may be considered



essential and whether or not a reduced impact, or even no impact, should be considered for these drugs. The actuary may solicit help from the plan sponsor's pharmacist in identifying the essential drugs and understanding the potential for induced demand.

When developing factors, consideration must be given to the maximum impact to be applied for any given cost-sharing tier. The literature notes that having prescription drug coverage can lead to as much as a 20 percent increase in overall drug utilization. This provides an upper bound for demand; however, this is measured against having no insurance. Therefore, induced demand impacts measured as relative to the Defined Standard Part D benefit design should be more limited.

Separate from any alternative copay and or coinsurance structure change, there may be a change to the deductible. An induced demand impact of

CONTINUED ON PAGE 12

Collectively, all of this information can be used to develop an induced demand model for Part D pricing.

a deductible change must also be developed. To support this, an effective overall cost sharing of the deductible will be necessary. This can be measured as the portion of overall drug costs that fall below the deductible.

Based on the considerations and assumptions above, the actuary can produce a range of induced demand changes for copay, coinsurance and deductible benefit changes by adapting the study results of 1 to 6 percent change in utilization for each 10 percent change in cost sharing to all of these assumptions. The resulting updated range will require a final step—to select the demand slope from within this range. When making that selection, the following considerations may be applied:

- The AARP Research Report does denote that, separate from the underlying utilization of a given population, the richer benefits of a lower cost-sharing level will attract higher users, and this may be influencing the measured demand in some of the studies. The report further raises the concern that the studies have not used adequate controls for all unobserved factors. This gives a reason to consider demand at the lower range of these studies' results.
- The AARP Research Report states that managed care populations use drugs differently than others, and the effects of cost sharing may be lower for the managed care population than with other populations. This may lead to a lower selection for the PD portion of an MA-PD plan than the selection for a PDP Only plan design, as a PDP Only plan is offered to Medicare fee-for-service (FFS) members who are not a part of a managed care plan.
- Any particular plan sponsor may have a variety of drug utilization controls in place. Such controls may serve to dampen the impact to induced demand expected from reduced cost sharing.
- Consideration must be given to the availability and copayment for professional office visit coverage, as the studies indicate that having insurance for physician visits is critical to using a drug benefit.

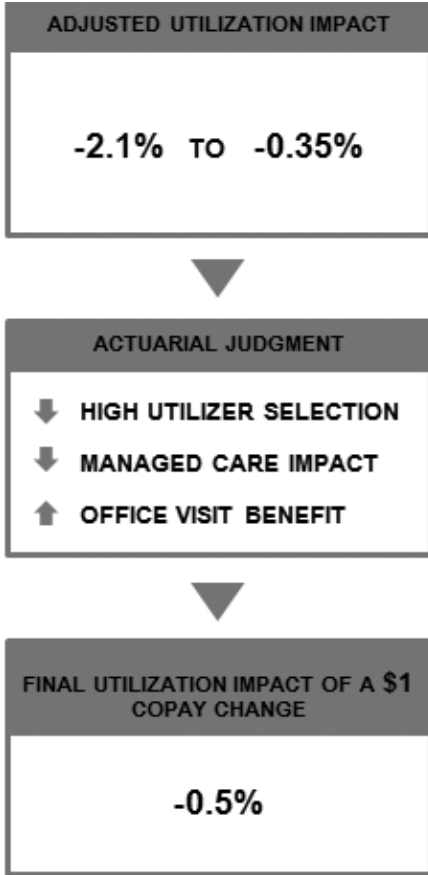
The induced demand model will be developed in a manner that integrates with the capabilities of the overall drug pricing model. For example, if the drug pricing model applies averages of drug use for each member without regard for being below and above the ICL, then developing factors that apply to only costs below the ICL will not easily integrate with the pricing model. It may be preferable to develop factors applicable to all drug costs, and those factors are developed with a level of dampening that considers there is no benefit change for drug use above the ICL.

Additional consideration for the model structure may include a model with “fixed factors” for a set of copay amounts (or coinsurance amounts). This structure would be different from defining a model which measures changes in the effective copay from that of the Defined Standard benefit and then calculates an impact to demand resulting from the “difference from” the Defined Standard benefit amount per dollar copay.

“Fixed Factor” Model—Such a model will contain a chart that has assigned factors for induced demand for each copay amount. As an example, the \$10 copay factor may be 0.950 and the \$15 copay may provide a 0.925 factor. The impact of moving from a \$15 copay to a \$10 copay would induce $0.950 / 0.925 = 1.027$ (or 2.7%) additional prescription drug use.

“Difference From” Model—Such a model would be a mathematical formula that denotes for each \$1 decrease in copay will result in, for example, 0.5 percent increase to prescription drug utilization. The impact of moving from a \$15 copay to a \$10 copay would induce $(\$15 - \$10) \times 0.5\% = 2.5\%$ additional prescription drug use.

Other than very small mathematical differences, these two model designs have structural difference from the application of the maximum induced demand change—the “fixed factors” model will limit the demand change within a defined set of copay amounts in the chart, while the “difference from” model will limit the demand change calculated from the Defined Standard benefit design.



Conclusion

There is a great amount of information available concerning the induced demand for prescription drug use resulting from cost-sharing changes. Studies available do have some shortcomings, but understanding them is useful for helping to narrow the induced demand slope ranges for pricing.

Considerations for physician office visit benefits, managed care controls, limits to total impact, benefit limits (e.g., the ICL) and impact differences for essential and non-essential drugs must be considered. All of this information plays a role in the development of induced demand.

Collectively, all of this information can be used to develop an induced demand model for Part D pricing. This model may be unique to any population, drug cost management controls and plan type.

A full copy of the Susquehanna Actuarial Consulting Informational Report, which describes in more detail the development of induced demand models, is available on our website at <http://www.sacactuaries.com/WhitePapers/Medicare%20Part%20D%20Rx%20Induced.pdf>. ■

Enterprise Risk Management: One Size Does Not Fit All

By Mark Whitford



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The current operating environment is presenting numerous challenges for health insurance companies to navigate. Increasing competition within the industry along with expected regulatory changes are creating significant pressure on margins and profitability. However, an analysis of existing investment portfolio allocations indicates that a meaningful opportunity exists to enhance investment income by selectively increasing risk tolerance levels. While such a shift in the invested asset base can be a daunting task, enterprise risk management (ERM) solutions can provide valuable insight and a path toward implementation. By employing a holistic view and analyzing both the asset and liability sides of the balance sheet, ERM seeks to determine optimal investment strategies to meet the demands of an evolving operating climate. The health insurance industry should consider the benefits of ERM, as companies look to enhance profitability and meet the financial and regulatory challenges that lie ahead.

Risk-Based Capital

An initial review of risk-based capital (RBC) serves as the foundation for our ERM analysis of risk tolerance levels across health insurers. The importance of the RBC ratio is twofold, as insurance companies must maintain a minimum amount of capital on the balance sheet to remain in business and avoid increased regulatory scrutiny. However, also of note is that a comparison of RBC

ratios across a competitive set provides a measure of risk tolerance, particularly when evaluating a company relative to other insurers of similar size or type.

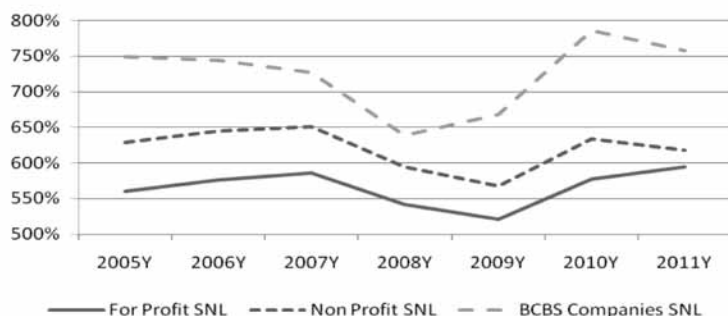
The analysis shown in Exhibit 1 indicates that, as of Dec. 31, 2011, the industry has, on average, returned to pre-2008 RBC ratio levels. Comparing these ratios by company type, we find that BCBS companies (both “for-profit and “not-for-profit” Blues) are targeting the highest amount of RBC, followed by non-profit and for-profit companies. Additionally, this analysis indicates that RBC ratios vary by company size, which we define by the invested asset base. Larger for-profit and non-profit companies have higher RBC ratios than smaller companies, while BCBS companies have roughly the same RBC ratios regardless of size.

With respect to the relative contribution of the components of RBC required capital after covariance, examining the 2010 NAIC RBC results for health insurers reveals the following:

H0 Affiliate Asset Risk	13.89%
H1 Invested Asset Risk	4.31%
H2 Underwriting Risk	79.39%
H3 Credit Risk	0.27%
H4 Business Risk	2.14%
Total Risk	100.00%

While it is not surprising that underwriting risk is the largest component, it is intriguing to find that investment risk, which accounts for a significant portion of total income, accounts for such a small amount of total RBC required capital. We were further surprised by the breakdown of contribution to H1 Invested Asset Risk, which is 0.99 percent for fixed income, 1.62 percent for common stock and 1.70 percent for “other” assets. We note that fixed income, which accounts for the majority of invested assets, accounts for less than 1 percent of RBC required capital. There would appear to be ample room to increase income levels by selectively adding risk to investment portfolios. However, before we further analyze risk tolerance levels across the industry, we should consider the liability side of the balance sheet and possible implications for the invested asset base.

Exhibit 1
RBC Ratio's by Year



Source: Brookfield Analysis on SNL Data

On the Liability Side

Our examination of risk management activity related to liabilities focuses upon medical loss ratios (MLRs). From an ERM perspective, a higher MLR indicates lower underwriting margins and, therefore, may indicate greater reliance on investment income for profitability (or pressure to lower administrative expenses). In turn, this enhanced reliance on investment income may lead to a higher probability of writing business at a loss, which can lead to increased liquidity and operational risks. Therefore, a comparative review of MLRs provides insight into the risk tolerance levels across the health insurance industry.

In Exhibit 2, we compare the MLR of for-profit, non-profit and BCBS companies of various sizes over the past seven years. For the majority of companies surveyed, the MLR for 2010 and 2011 were lower than the previous five year average.

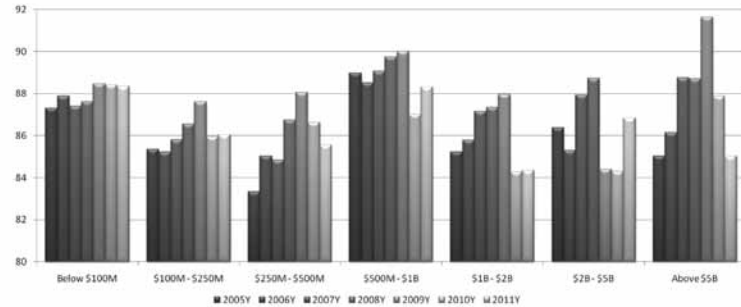
Our analysis indicates that the MLR differs by the type of company, as well as by company size. Focusing on company type, we observe that for-profits average an 86 percent MLR, while non-profits average 92 percent and BCBS companies average 88 percent. Additionally, our analysis demonstrates that MLRs differ by company size. The non-profit MLRs tend to increase with company size, while BCBS MLRs tend to decrease with company size. Our review did not reveal any clear trend with for-profit companies.

Looking forward, the impact of the Affordable Care Act (ACA) on MLRs will need to be considered. With minimum MLR requirements going into effect in 2011, there is now additional pressure on companies to devise methods to offset the loss in underwriting margins and mitigate the increased risks associated with higher MLRs. As a result, a greater reliance on investment income will likely emerge, leading to an enhanced need to evaluate the composition and risk level of investment portfolios.

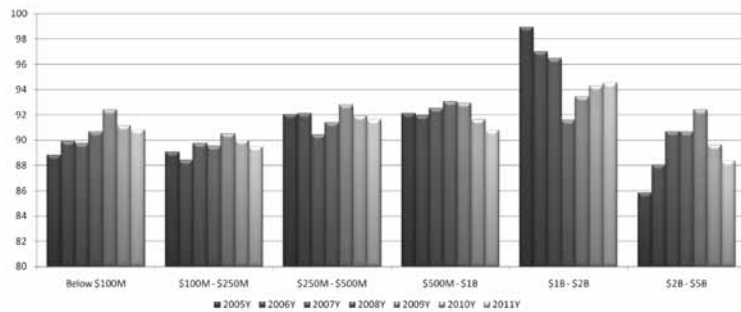
Our evaluation has thus far indicated that companies tend to price at different MLRs, resulting in varying levels of risk tolerance. Importantly, we also observe a meaningful difference in the level of business that

Exhibit 2

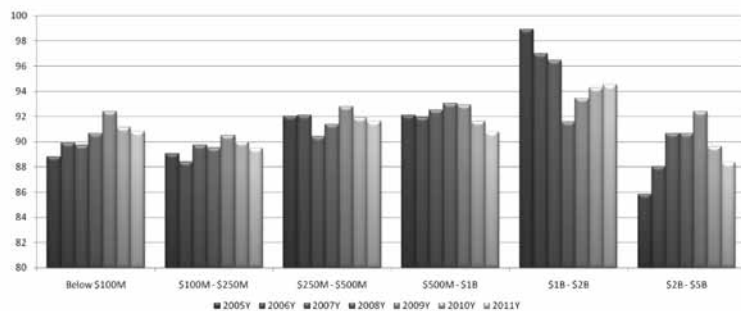
Medical Loss Ratio (%) - For Profit



Medical Loss Ratio (%) - Non Profit



Medical Loss Ratio (%) - BC/BS Companies



Source: Brookfield Analysis on SNL Data

companies are willing to underwrite or generate for a given level of capital and surplus. Exhibit 3 demonstrates that liabilities, which primarily consist of claim reserves related to the amount of business a company has written, range from 77 to 106 percent of capital and surplus. For example, a company with \$100 million in assets and \$50 million of liabilities for every \$50 million of capital and surplus has a

CONTINUED ON PAGE 16

ratio of 100 percent. Generally, smaller companies have lower ratios, and larger companies have higher ratios. Smaller companies tend to have ratios near 80 percent, meaning that for every dollar of capital on balance sheet, they maintain 80 cents in liabilities. We note that larger companies with ratios near 105 percent are assuming additional risk, as for every \$1 of capital and surplus, they have \$1.05 in liabilities. Larger companies appear to be more comfortable writing a greater amount of business and holding less capital to protect themselves from adverse deviations in claim experience.

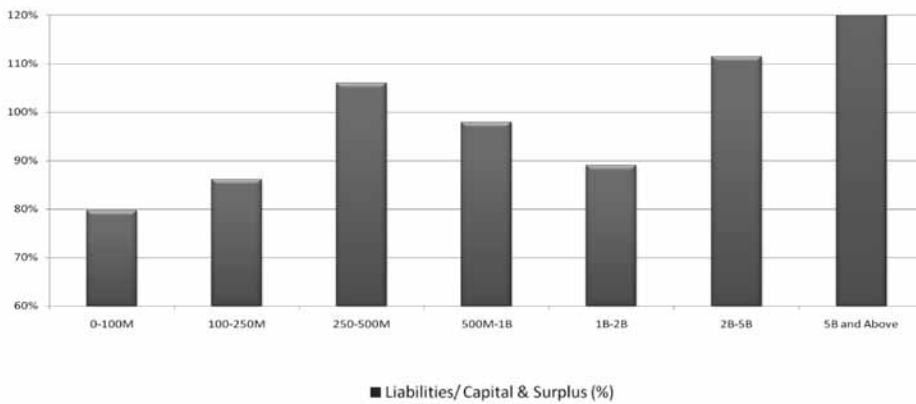
Our analysis of the liability side of the balance sheet has indicated that MLR and RBC ratios vary by

company size and type. Additionally, there appears to be a meaningful relationship between company size and the amount of liabilities written for a given level of surplus. As this is only a sample of the risks to consider in the ERM process, we now turn our attention to the asset side of the balance sheet to search for similar trends.

On the Asset Side

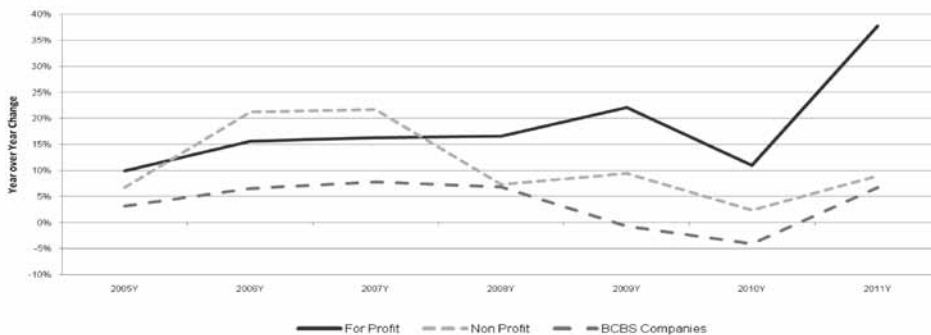
Our comparative ERM analysis of risk tolerance levels on the asset side of the balance sheet focuses on the risks inherent in investment portfolios. These risks include liquidity and credit characteristics, as well as the composition of the invested asset base.

Exhibit 3
Liabilities/Capital & Surplus



Source: Brookfield Analysis on SNL Data

Exhibit 4
Claim & CAE Reserve Growth (%)



Source: Brookfield Analysis on SNL Data

Liquidity Risk

Liquidity risk measures the ability of a company to pay liabilities in a timely manner. Liquidity risks will differ depending upon the type of business a company writes (health, life, or property and casualty (P&C)). Health care is considered a short-tailed line of business, with underwriting liability durations typically between one and three months. Health care companies also tend to have two portfolios—an operating portfolio, which handles day-to-day cash needs and manages liquidity, and an investment portfolio. The former typically has an asset duration of three months, while the latter has a typical asset duration of three to four years.

There are several factors to consider when measuring liquidity risk for a health company. The first factor is the type of business the health company writes, as HMO claims settle much more quickly than PPO and POS claims. Another area to observe is the growth in claim reserves. Typically, claim reserves grow on an annual basis, as demonstrated in Exhibit 4. This is due, in part, to annual medical rate increases and population growth. There will be monthly fluctuations in claim reserves, leading to declines in reserves during some months, as deductibles and out-of-pocket maximums are being satisfied. However, companies that grow reserves year-over-year tend to have lower liquidity needs, as cash inflows to pay future claims generally surpass cash outflows.

An evaluation of risk tolerance levels related to liquidity reveals an important relationship with

company size. Exhibit 5 demonstrates that larger companies tend to have lower current liquidity ratios, calculated as cash and liquid assets as a percent of liabilities, than smaller companies. As such, it would appear that larger companies have a greater tolerance for holding more illiquid assets.

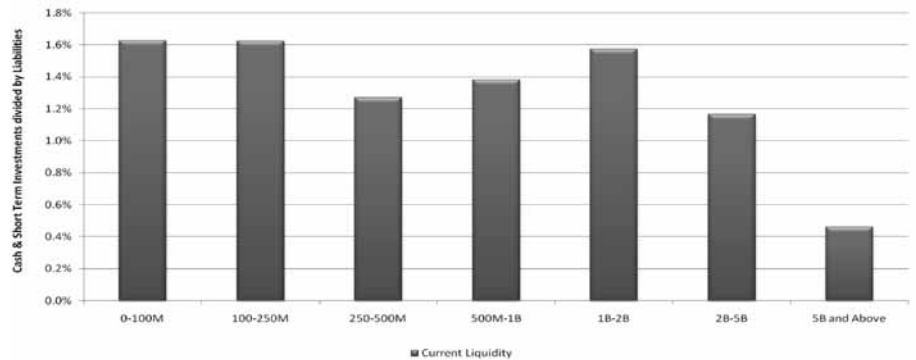
The Role of Credit Risk

Credit risk is the risk of loss caused by a counterparty's failure to fulfill a promised disbursement. In 2008, at the height of the global financial crisis, credit risk was a major factor impacting overall net investment income for health insurers. When considering credit risk, it is important to remember that for-profit, non-profit and BCBS companies base their investment strategies partially on the objectives of their stakeholders. For-profit companies tend to consider their shareholders and stock analysts, who prefer companies with steady growth in net income and low earnings volatility. As a result, for-profit companies are likely to invest a greater proportion of their asset base in cash and bonds rather than equities. Conversely, non-profit and BCBS companies do not need to consider shareholder preferences and can tolerate more earnings volatility. Additionally, they tend to have higher RBC ratios (see Exhibit 1) and are able to put more capital at risk, leading non-profit and BCBS companies to invest in riskier asset classes relative to for-profit companies.

We categorize risky asset classes as high-yield bonds, common stock, real estate and other investments which typically include amounts invested in hedge funds and private equity companies. The analysis in Exhibit 6 compares the percent of surplus that health care companies invest in these riskier asset classes. Our evaluation indicates this percentage is indeed larger for non-profit and BCBS companies for the aforementioned reasons. Additionally, this analysis demonstrates that for-profit and non-profit companies tend to increase their allocation to riskier asset classes as they grow in size.

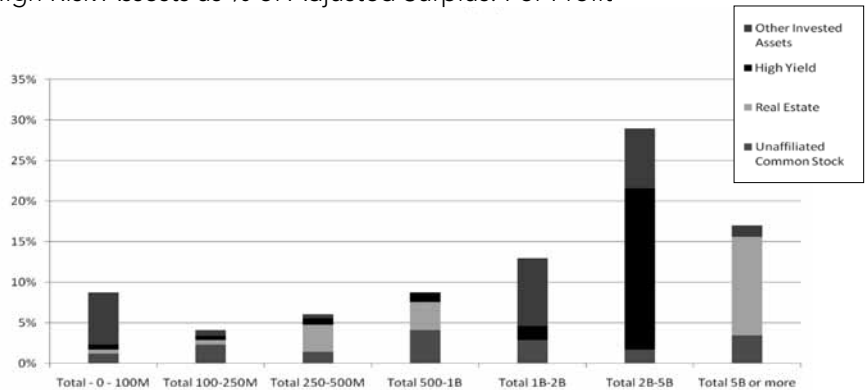
Interestingly, the composition of risky asset investments appears to differ by the type of company. Non-profits tend to invest in owner-occupied real estate, while BCBS companies tend to invest in

Exhibit 5
Current Liquidity

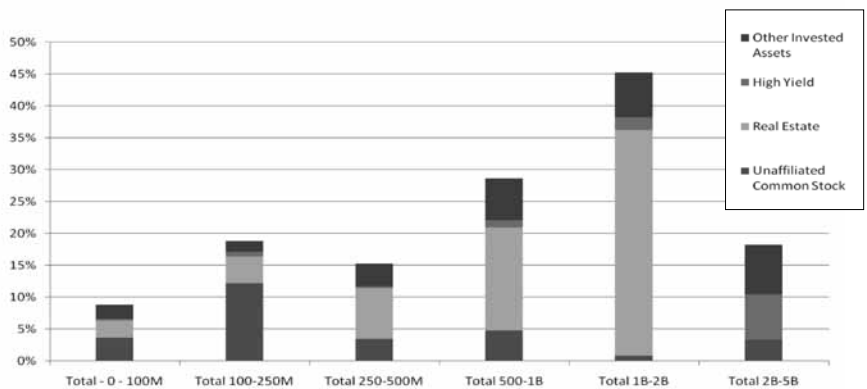


Source: Brookfield Analysis on SNL Data

Exhibit 6
High Risk Assets as % of Adjusted Surplus: For Profit



High Risk Assets as % of Adjusted Surplus: Non-Profit

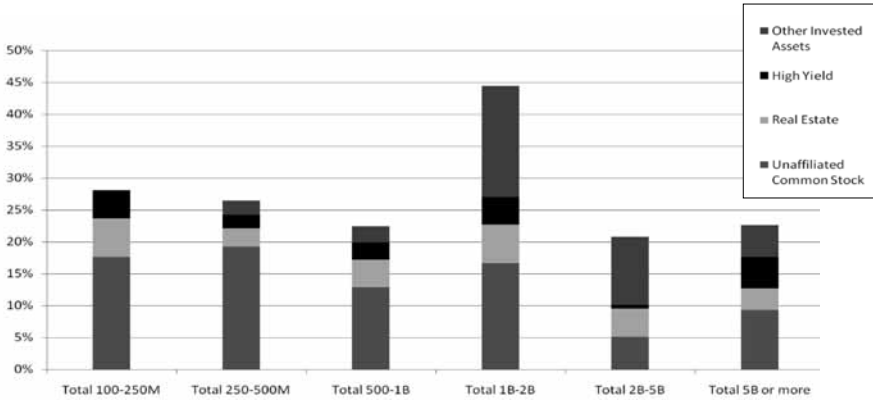


Source: Brookfield Analysis on SNL Data

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Exhibit 6 continued

High Risk Assets as % of Adjusted Surplus: BCBS Companies



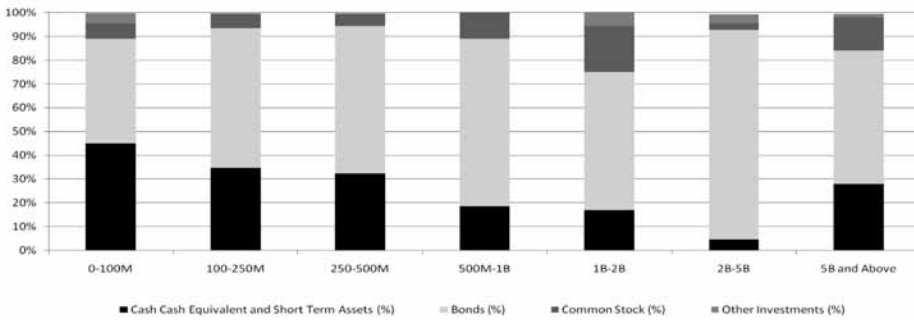
equities. There does not appear to be a preferred asset class among for-profit companies.

Investment Risk Comparison

In addition to an evaluation of liquidity and credit risks, a review of investment portfolio composition also reveals several interesting themes. Exhibit 7 compares the asset allocation decisions of health insurance companies by size. Across all company types, it appears that as the invested asset base increases, there tends to be a corresponding increase in allocations to riskier asset classes and a decrease in investment in cash and bonds.

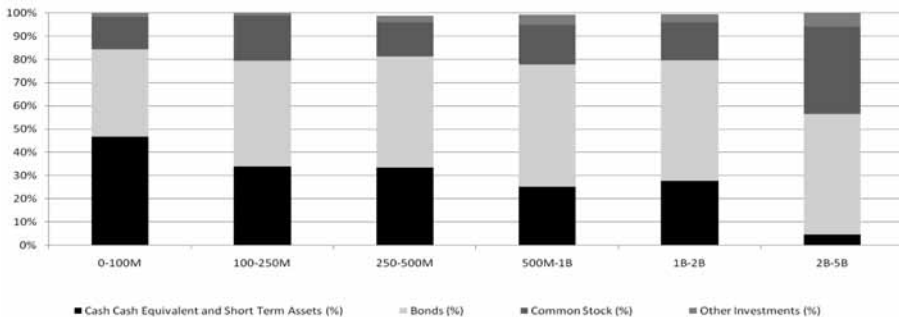
Exhibit 7

Asset Allocation (%) - For Profit



This analysis indicates that as the invested asset base grows, for-profit companies typically invest primarily in bonds, followed by a move into equities and other investments. Non-profit companies, regardless of asset level, follow this pattern as well, but tend to hold a higher percentage of common stock. In fact, non-profit companies with an invested asset base of \$5 billion or larger actually maintained negative cash holdings at year-end. This phenomenon is not entirely uncommon, as we do witness companies borrowing from bank lines on a short-term basis, leading to negative cash on hand. Our analysis also indicates that BCBS companies tend to hold less cash and maintain larger allocations to common stock than the other company types.

Asset Allocation (%) - Non Profit



Further evidence of the relationship between risk tolerance and invested asset base can be found through an examination of bond portfolios in isolation. Such an analysis reveals that, as the invested asset base increases, the average portfolio rating tends to decrease. In Exhibit 8, we observe that as the invested asset base increases, the allocation to NAIC 1 rated bonds (AAA-A) declines, while the allocation to NAIC 2 (BBB) and NAIC 3-6 (high-yield) bonds rises.

A review of the maturity profile of the asset portfolio also reveals several interesting themes (Exhibit 9). Knowing the average duration of a health care

company's liability portfolio is one to two months and the average maturity of the asset portfolio ranges from three to six years, it would appear that health care companies are comfortable with investment horizons longer than liability durations (ALM mismatch). Additionally, we also note that larger BCBS companies have longer maturity portfolios than smaller BCBS companies, although there is no clear trend with for-profit and non-profit companies.

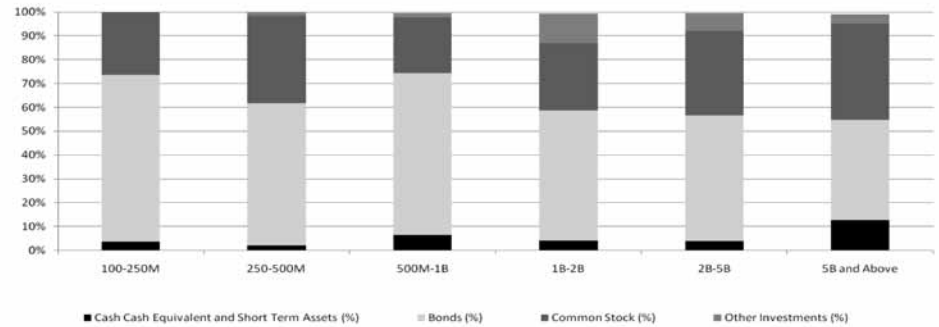
Interestingly, recent capital market trends may drive further changes in asset allocation decisions and risk tolerance levels, as the opportunities to invest for yield have diminished. As demonstrated in Exhibit 10, bond yields have declined meaningfully over the last decade, with the exception of the 2008 crisis period. Prior to 2008, a AAA-rated security yielded approximately 4 percent, whereas, today, that same security would yield closer to 2 percent. Due to this trend, investment income levels have declined and will continue to do so unless risk tolerance levels are re-evaluated, and the credit quality of investment portfolios is adjusted accordingly.

Companies seeking to enhance investment income in an environment of diminishing yields may benefit from a shift in asset allocation to higher-yielding opportunities, including high-yield corporate bonds, securitized mortgage investments, or income-producing equity securities, such as listed infrastructure companies or real estate securities (REITs). With yields ranging from 3.5 to over 7 percent, investment in these asset classes may represent an attractive option for improving current income while remaining within a company's targeted risk spectrum.

Risk Tolerance and Profitability

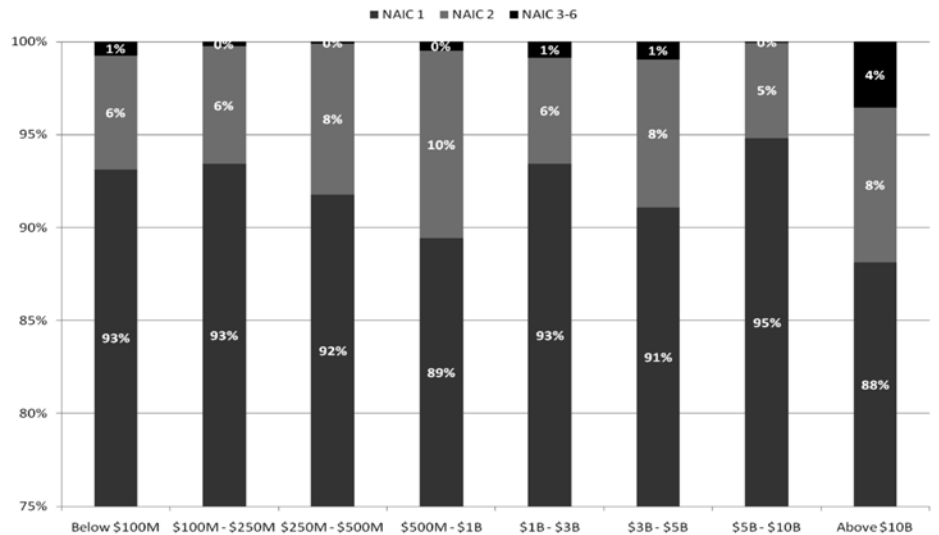
This holistic ERM approach to understanding risk tolerance on both the asset and liability sides of the balance sheet can lead to enhanced strategies for improving overall profitability. Importantly, the source of health care company profitability has evolved over time. As Exhibit 11 demonstrates, underwriting margins (as a percent of premium) were declining for all company types prior to 2009. However, they have rebounded over the past few years due in part to lower-than-expected medical inflation.

Exhibit 7 continued
Asset Allocation (%) - BCBS Companies



Source: Brookfield Analysis on SNL Data

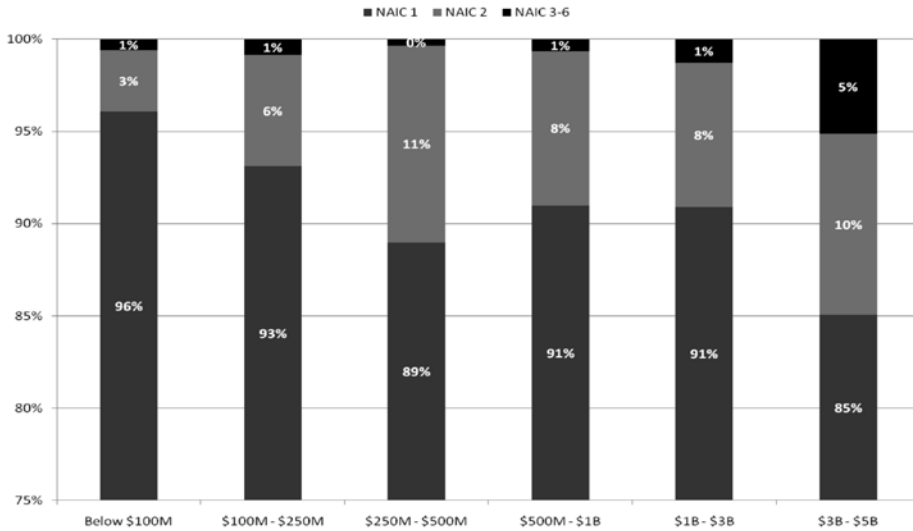
Exhibit 8
2011 - Bond rating Distribution (For - Profit)



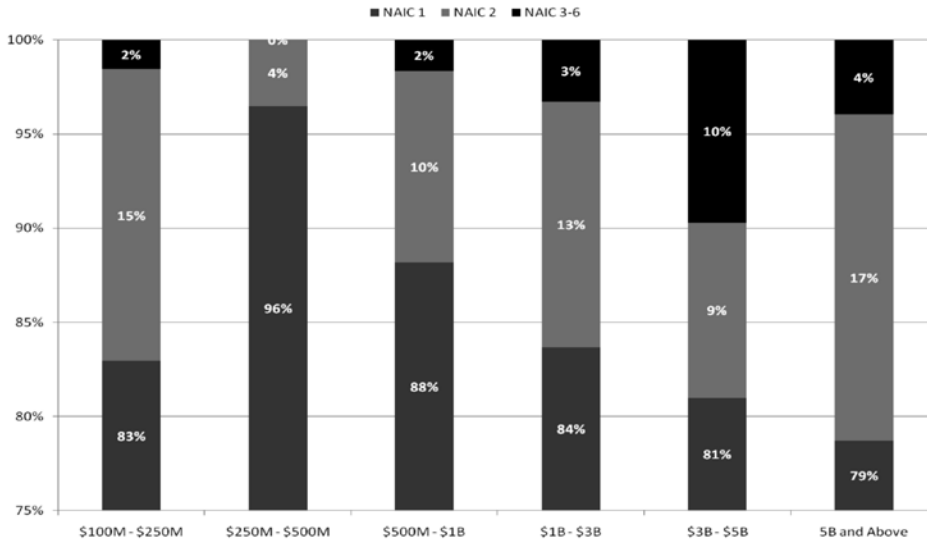
Source: Brookfield Analysis on SNL Data

CONTINUED ON PAGE 20

Exhibit 8 continued
2011 - Bond Rating Distribution (Non - Profit)



2011 - Bond Rating Distribution (Blue)



At the same time, investment income has been decreasing over the last few years and is now running less than 1 percent for non-profit and for-profit companies (see Exhibit 12). With the expectation of increased pressure on underwriting margins due to competition and regulatory changes (that is, the ACA), companies should examine their investment strategy as a way to offset the potential decline in underwriting gains. As previously demonstrated, investment risk currently comprises a small portion of the overall risk of the firm, providing the opportunity to increase profitability by selectively adding risk to the investment portfolio.

Exhibit 9
Portfolio Maturity

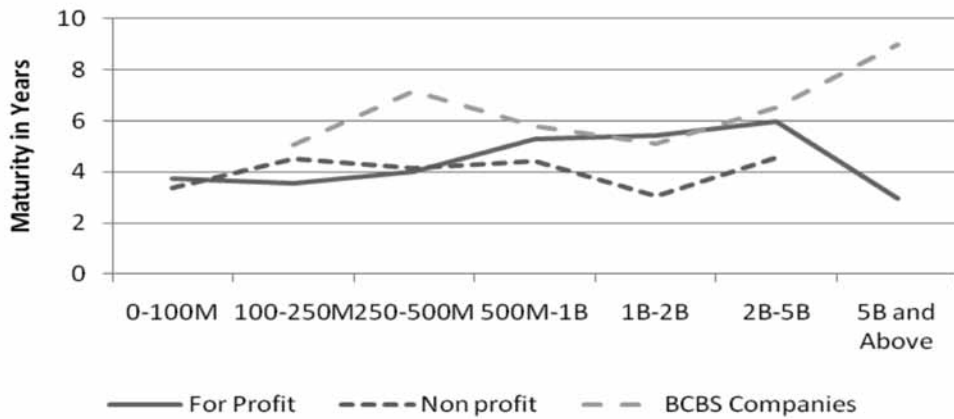
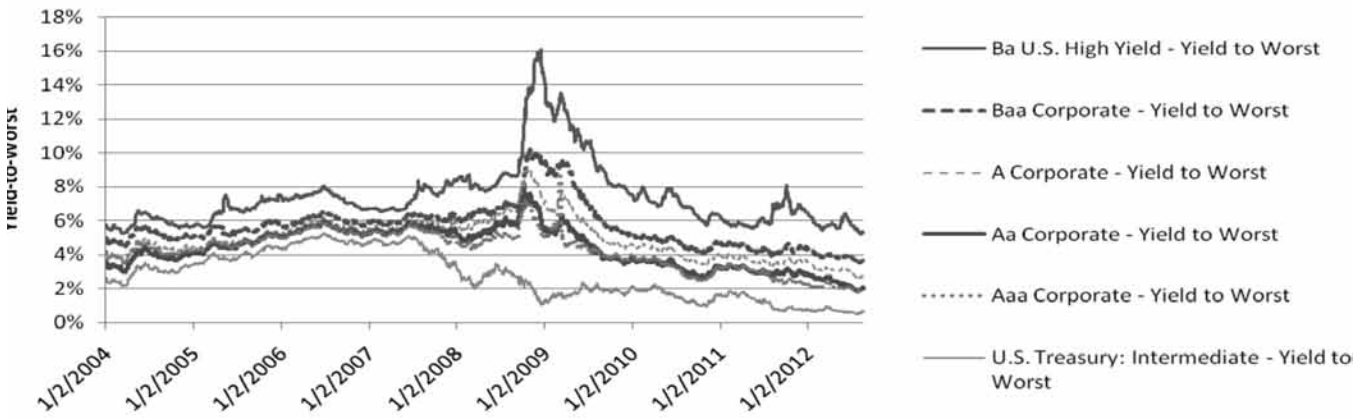


Exhibit 10



CONTINUED ON PAGE 22

Exhibit 11
Net Underwriting Gains as a % of Net Premiums Earned

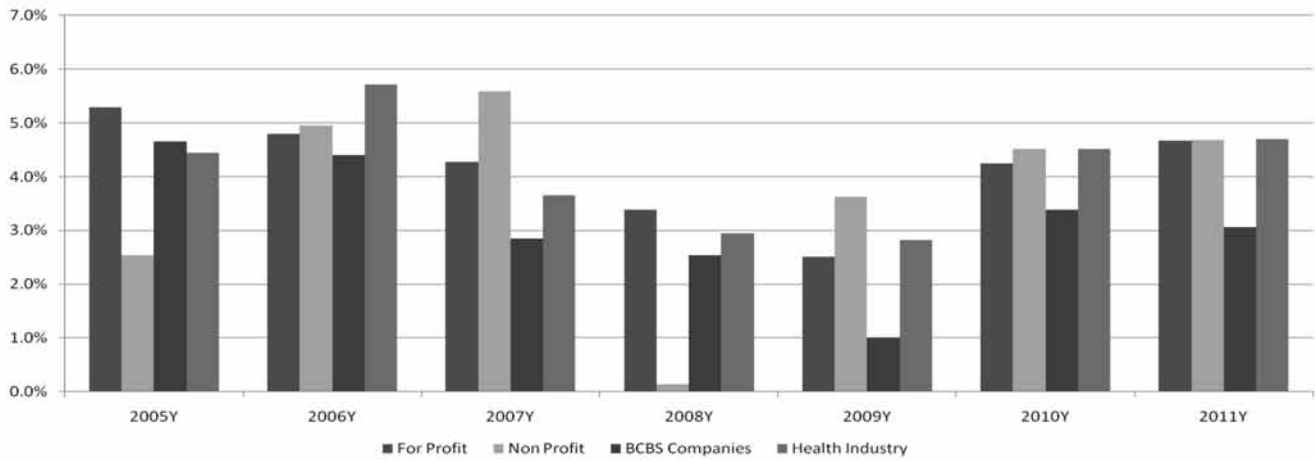
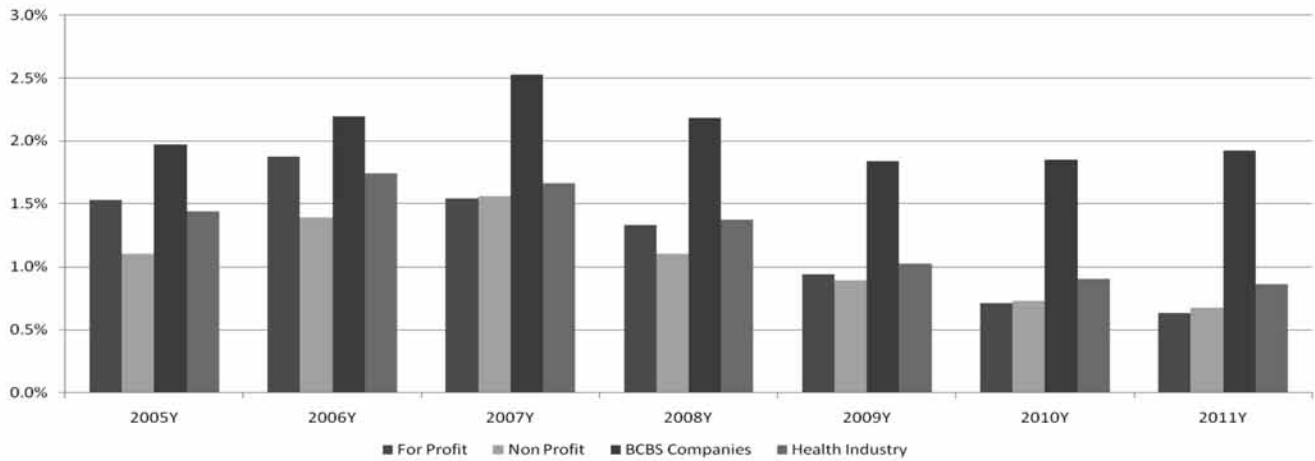


Exhibit 12
Net Investment Income Earns as a % of Net Premiums Earned



Conclusions

Against the backdrop of increasing pressures on profitability due to competition and regulatory changes, health insurance companies are facing the challenging task of improving margins while maintaining appropriate liability coverage and capital ratios. As demonstrated by our extensive analysis, one promising approach would involve selectively increasing risk levels in the invested asset base. This process can be difficult, requiring attention to balance the drivers of both assets and liabilities. ERM solutions can provide a path forward. Utilizing a holistic view, ERM supports the evolving needs of a growing company, particularly in a dynamic financial and regulatory environment. By analyzing the opportunities available on the asset side of the balance sheet and considering the requirements of the liability side, ERM can help design optimal investment strategies to improve profitability.

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Utilizing a holistic view, ERM supports the evolving needs of a growing company, particularly in a dynamic financial and regulatory environment.

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Soundbites from the American Academy of Actuaries' Health Practice Council

By Heather Jerbi and Tim Mahony



What's New

In the midst of an already heated election season, on June 28 the Supreme Court of the United States (SCOTUS) handed down its highly anticipated and highly speculated decision on the Affordable Care Act (ACA). For the Obama administration and many congressional Democrats, the court's decision to keep the ACA largely intact was hailed as an unequivocal signal that the ACA should move forward. For many congressional Republicans, the decision only heightened their determination to repeal (and possibly replace) ACA after the November election. So, implementation continues but not without an ongoing air of uncertainty.

On July 11, actuaries from more than 1,800 registered sites and all practice areas tuned into the American Academy of Actuaries' Health Practice Council (HPC) webinar¹, featuring an analysis of the court's decision to uphold the individual mandate, a core but controversial provision in the ACA, and a look at next steps in the federal and state implementation process. The panelists noted that states are in the process of considering whether and how to create exchanges, and indicated that additional guidance on several key provisions is expected in the fall, including essential health benefits, actuarial value and the three risk-sharing mechanisms.

Even as implementation continues in light of the SCOTUS decision, according to HPC Vice President Tom Wildsmith, the profession also has a responsibility to step up its efforts to tackle the issue of rising health care costs. In a press release following the SCOTUS decision, Cori Uccello, the Academy's senior health fellow, said, "Unless we are successful in reducing the long-term cost of health care, the effectiveness of the ACA will be undermined and increasing strains will be placed on household, state and federal budgets." During the webinar, Wildsmith announced that the HPC has created a new work group dedicated to the issue of educating policymakers and the public on the challenges of rising health care costs and potential short- and long-term solutions to help bend the cost curve.

While dedicating additional resources to the cost issue, the HPC continues to work with the Department of Health and Human Services (HHS), the Centers for Medicare & Medicaid Services (CMS) and the National Association of Insurance Commissioners (NAIC) on issues related to ACA implementation, as well as to develop new voters' guides to ensure policymakers, candidates and the public have the basic information necessary to understand health-care-related policy

CONTINUED ON PAGE 26

discussions and debates leading up to the 2012 elections. Recent voters' guides include: *Making Health Care Reform Work: Why Broad Participation Is Necessary* and *What Voters Should Know About Medicare*². Additionally, the following publications represent a sampling of some of our most recent (as of the time this article was written) communications to Capitol Hill, HHS, CMS and the NAIC, as well as other relevant issue areas/projects on which the HPC is working.

Actuarial Value

On June 11, the Actuarial Value Subgroup submitted comments³ to the IRS on Notice 2012-31, *Minimum Value of an Employer-Sponsored Health Plan*. The letter addresses how to account for non-core benefits and non-standard plan features, as well as other considerations related to the treatment of health savings account (HSA) contributions.

On May 16, the Actuarial Value Subgroup sent a letter⁴ to the Center for Consumer Information and Insurance Oversight (CCIIO) offering comments on its *Actuarial Value and Cost-Sharing Reduction* bulletin, specifically addressing the proposed actuarial value calculator. The letter supplements comments⁵ submitted on April 2 on the cost-sharing inputs for the calculator, incorporation of induced demand, number of geographic pricing tiers, and incorporation of multiple network tiers.

Actuarial Standards of Practice

In July, the Joint Committee on Retiree Health submitted a comment letter⁶ to the Actuarial Standards Board (ASB) on the exposure draft for ASOP 6, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Costs or Contributions*.

On May 31, the Joint Committee on Retiree Health submitted two comment letters to the ASB. The first letter⁷ was on the exposure draft of ASOP 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, requesting clarification on the implications for retiree group benefits. The second letter⁸ was on the exposure draft for ASOP 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, regarding the implication for retiree group benefits.

On May 15, the Health Practice Financial Reporting Committee submitted comments⁹ to the ASB on revisions to ASOPs 22, *Statements of Opinion Based on Asset Adequacy Analysis by Actuaries for Life and Health Insurers*, and 28, *Statements of Actuarial Opinion Regarding Health Insurance Liabilities and Assets*.

Long-Term Care

In June, the Academy hosted its second roundtable—National Conversation on Long-Term Care Financing. As with the first roundtable in March, about 20 stakeholders with different perspectives on long-term care financing and services met to discuss policy options to address long-term care (LTC) needs and risks for various segments of the population. During this meeting, attendees helped refine criteria that could be used to evaluate different financing systems; at the next quarterly meeting, the group is expected to look at various reform options in more detail based on the criteria established. The attendees included experts in LTC with backgrounds in public policy, actuarial work, research, government, sales and financial planning, and retirement.

In early June, the Long-Term Care Practice Note Work Group extended the exposure period on the revision of the 2003 practice note, *Long-Term Care Insurance Compliance with the National Association of Insurance Commissioners Long-Term Care Insurance Model Regulation Relating to Rate Stability*,¹⁰ to July 8.

On April 27, the Federal Long-Term Care Task Force sent a letter¹¹ to the National Conference of Insurance Legislators in response to a request for information on strategies to reduce costs related to LTC coverage. The task force highlights a number of general approaches that would address both LTC costs and effectiveness.

Medicaid

On June 11, the Medicaid Work Group submitted comments¹² to CMS on a proposed rule regarding payments for Medicaid primary care services. Under the ACA, Medicaid fee-for-service and managed care programs must reimburse primary care providers for these services at rates equal

to Medicare. The work group suggested various approaches for identifying the increment to capitation payments attributable to the increased provider rates.

Medicare

In May, the Medicare Steering Committee updated its annual issue brief, *Medicare's Financial Condition: Beyond Actuarial Balance*,¹³ that offers an actuarial perspective on Medicare's financial condition and outlines public policy options to address the program's long-term financial challenges.

In March, the Academy's Medicare Steering Committee released a new issue brief, *Revising Medicare's Fee-For-Service Benefit Structure*.¹⁴ This issue brief expands on the committee's initial analysis of potential changes to Medicare's benefit design included in *An Actuarial Perspective on Proposals to Improve Medicare's Financial Condition*. The issue brief also includes a discussion of value-based insurance design.

In a March 21 letter to the U.S. House of Representatives leadership, the Academy's HPC commented¹⁵ on legislation that included a provision that would repeal the Independent Payment Advisory Board (IPAB), which was created under the ACA to provide recommendations to reduce growth in Medicare expenditures if spending exceeds a certain growth rate. While not taking a position on whether the IPAB should be repealed or expanded, the HPC's letter provided an overview of the IPAB's function as designed by the ACA and reaffirmed the need to address Medicare's long-term financing challenges.

MLR

On May 2, the Medical Loss Ratio Work Group sent a letter¹⁶ to CMS offering comments on the revised annual reporting form, specifically on the definition of premiums, contract reserves and the definition of pre-tax underwriting gain/(loss).

NAIC Activities

On July 6, the Group Long-Term Disability Work Group submitted a report¹⁷ online to the NAIC's Health Actuarial Task Force regarding a valuation

proposal for a new group long-term disability table. This was a follow-up to the update¹⁸ the group provided during the NAIC's spring meeting (March 2).

On April 30, the Academy submitted comments¹⁹ to the NAIC on its draft white paper on the Solvency Modernization Initiative and insurance regulation offering suggestions encompassing risk-based capital (RBC), Own Risk Solvency Assessment (ORSA) and NAIC model laws.

Rate Review

On July 23, the Academy's Rate Review Practice Note Work Group released an exposure draft²⁰ of a new practice note on the preparation and review of rate filings under the ACA. After public comments are considered and addressed, a final version of *Actuarial Practices Relating to Preparing, Reviewing, and Commenting on Rate Filings Prepared in Accordance with the Affordable Care Act* will be posted on the Academy's website.

Risk Adjustment

The Academy's HPC and the Society of Actuaries (SOA) jointly released a research brief²¹ in June that summarizes the key findings and policy implications of a study, conducted by Milliman and sponsored by the SOA, of the risk mitigation programs under the ACA—risk adjustment, reinsurance and risk corridors.

Stop-Loss Insurance

On June 29, the Stop-Loss Work Group submitted comments²² to the Employee Benefits Security Administration on small employers' use of stop-loss insurance and how this affects the market for fully insured small health coverage under the ACA.

Ongoing Activities

The Academy's Health Practice Council has many ongoing activities. Below is a snapshot of some current projects.

Health Practice Financial Reporting Committee (Laurel Kastrup, chairperson)—The committee has

CONTINUED ON PAGE 28

reviewed the list of Academy health-related practice notes that need updating and is currently updating the Large Group Medical Business Practice Note and will be updating the 1995 Long-Term Care Insurance practice note in 2012.

Medicare Steering Committee (Ed Husted, chairperson)—The committee is developing a series of public statements related to specific Medicare-related provisions included in recent deficit reduction proposals.

Academy/SOA Cancer Claims Cost Tables Work Group (Brad Spenny, chairperson)—The work group has been charged with evaluating and updating the 1985 cancer claims cost tables. The work group has administered a survey to companies that write cancer insurance to get their opinions about the table. Survey results are due by the end of August.

Group Long-Term Disability Work Group (Darrell Knapp, Roger Martin, co-chairpersons)—This work group has been charged with developing a valuation table for group long-term disability insurance. The work group expects to complete the table by September 2012.

Health Practice International Task Force (April Choi, chairperson)—The task force has created two subgroups, one focusing on long-term care systems in foreign countries and one on types of wellness initiatives in foreign countries. The long-term care subgroup has published an article on international long-term care challenges in the March/April 2012 issue of *Contingencies*. The wellness subgroup is publishing an article on international wellness programs in the Nov./Dec. issue of *Contingencies*.

Health Receivables Factors Work Group (Kevin Russell, chairperson)—This work group is reviewing current health care receivables factors for the NAIC's Health RBC Working Group and providing guidance.

Long-Term Care Principles-Based Work Group (Al Schmitz, chairperson)—This work group is looking at the implications of a principle-based approach on long-term care insurance. The work

group is developing and testing a prototype model used to examine the impact of stochastic analysis on LTC for PBA purposes.

Long-Term Care Valuation Work Group (Bob Yee, chairperson)—This is a joint work group with the Society of Actuaries and is tasked with developing and recommending valuation morbidity tables for long-term care insurance. The work group is working with the Medical Information Bureau (MIB) to finalize the data and will construct the tables in the last part of 2012 and compile a draft report by mid-2013.

Medicaid Work Group (Mike Nordstrom, chairperson)—The ASB has approved the work group's request to have the 2005 Medicaid Managed Care practice note developed into an ASOP and has formed a task force to complete this task.

Medicare Part D RBC Subgroup (Brian Collender, chairperson)—This subgroup is recommending changes to Medicare Part D RBC formula and has asked the NAIC's Health RBC Working Group to assist with administering a survey of companies that write Medicare Part D business. The subgroup is awaiting further guidance from the NAIC.

Medicare Supplement Work Group (Ken Clark, chairperson)—This work group has submitted recommended changes to the Medicare Supplement Refund Formula to the NAIC's Medicare Supplement Refund Formula Subgroup. The NAIC has compiled a database of selected states for this project, and the work group is deciding on how to move forward.

Health Solvency Work Group (Donna Novak, chairperson)—The work group continues to evaluate the current health RBC covariance calculation for potential changes to the calculation or methodology and the impact of health reform on the health RBC formula. The work group will be predominantly focused this year on the NAIC's Solvency Modernization Initiative (SMI). The report was submitted on Jan. 31. The work group has been asked by the NAIC's Health RBC Working Group to look at various missing health risks related to the RBC formula, in particular the potential impact of industry concentration risk.

Stop-Loss Work Group (Eric Smithback, chairperson)—This work group is continuing to update a 1994 report to the NAIC on stop-loss factors.

of the Academy's Health Practice Council, contact Heather Jerbi at Jerbi@actuary.org or Tim Mahony at mahony@actuary.org. ■

If you want to participate in any of these activities, or if you want more information about the work

END NOTES

- ¹ <http://www.actuary.org/content/webinar-health-care-reform-after-supreme-court%E2%80%9494-actuarial-perspective-0>
- ² http://www.actuary.org/files/Campaign_2012_Risk_Pool_FINAL_062812.pdf
- ³ http://www.actuary.org/files/AAA_comment_letter_on_Notice_2012-31_061112.pdf
- ⁴ <http://www.actuary.org/files/publications/AV%20comment%20letter%2005%2016%202012%20final.pdf>
- ⁵ <http://www.actuary.org/files/publications/AV%20calculator%20q%20and%20a%204%2002%202012.pdf>
- ⁶ http://www.actuary.org/files/JCRH_ASOP_6_letter_071412_final.pdf
- ⁷ <http://www.actuary.org/files/publications/AV%20calculator%20q%20and%20a%204%2002%202012.pdf>
- ⁸ http://www.actuary.org/files/JCRH_ASOP27_ED_letter_053112_final.pdf
- ⁹ http://www.actuarialstandardsboard.org/comments/asop22and28revision_comments/Comment_2.pdf
- ¹⁰ http://www.actuary.org/files/publications/Long_Term_Care_Rate_Stability_Practice_Note_2012.pdf
- ¹¹ <http://www.actuary.org/files/publications/LTC%20letter%20to%20NCOIL%20042712%20final.pdf>
- ¹² http://www.actuary.org/files/American_Academy_of_Actuaries_Comment_Letter_CMS_2370_P_Medicaid.pdf
- ¹³ http://www.actuary.org/files/Medicare_Trustees_IB_FINAL_05_21_12.pdf
- ¹⁴ <http://www.actuary.org/files/publications/Medicare%20FFS%20Design%20Issue%20Brief%20030712%20final.pdf>
- ¹⁵ <http://www.actuary.org/files/publications/IPAB%20comment%20letter%203%2021%202012.pdf>
- ¹⁶ <http://www.actuary.org/files/publications/AAA%20MLR%20Reporting%20Form%20Comments%20final%20050212.pdf>
- ¹⁷ <http://actuary.org/files/Final%20Academy%20GLTDWG%20Proposal%20Outline.pdf>
- ¹⁸ http://www.actuary.org/files/publications/GLTDWG_Update_to_HATF_at_2012_Spring_Meeting_0.pdf
- ¹⁹ <http://www.actuary.org/files/publications/NAIC%20SMI%20White%20Paper%20response.pdf>
- ²⁰ http://www.actuary.org/files/RRPN_072312_exposure_draft_0.pdf
- ²¹ http://www.actuary.org/files/AAA-SOA_research_brief_on_3Rs_060412.pdf
- ²² http://www.actuary.org/files/Academy_Stop_Loss_Comments_06_29_2012.pdf

SOA 2012 Health Meeting Highlights

By T.J. Gray, Warren Cohen, Nathan Eshelman and Joy McDonald



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The Health Section of the Society of Actuaries (SOA) conducted its annual meeting June 13–15 at the New Orleans Marriott in the Big Easy. Topics on everyone’s minds were far from “easy,” however, as the gathering of actuaries awaited news from the Supreme Court on the constitutionality of the Affordable Care Act (ACA). In addition to good food and ample networking opportunities, attendees enjoyed 94 insightful and thought-provoking breakout sessions and some top-of-the-line keynote presenters. Although not covering all the sessions, this article gives a high-level perspective on the meeting events from the eyes of a sample attendee.

SOA President Brad Smith opened the meeting on Wednesday by discussing the SOA’s decision to add a general insurance track. Smith discussed the emergence of an urban middle class in international markets and highlighted the growing number of international actuaries in the SOA’s talent pool (70 percent of the SOA membership is from the United States, compared with only 53 percent of pre-ASA exam takers). He reminded us that the single most valuable personal asset we have is our SOA credential.

Following Smith’s remarks, SOA Health Meeting Chair Dan Bailey conducted an informal survey of the audience on the expected results of the Supreme Court’s decision on ACA’s constitutionality and future trends in the individual, group and uninsured marketplaces. Bailey then introduced keynote speaker Thomas Davenport, distinguished professor at Babson College, and thought leader in the field of business analytics.

Davenport’s remarks focused on business analytics as applied to the health care industry. Quoting Charles Dickens, Davenport conveyed that it is the best of times (checklists, automation and behavioral economics), and it is the worst of times (high costs, too many errors and little accountability) for health care. He reminded actuaries that “[we] are in the profession of helping to make better decisions about health care costs.” He suggested the following as areas where actuaries could implement analytics to improve results in health care businesses: disease management, disease identification,

evidence-based medicine, pay-for-performance programs and retention.

Davenport pointed out that as actuaries we are good analytical thinkers, and we need a broader set of methods in our tool bags. He highlighted the DELTA method as a way to improve business analytics:

- Data
- Enterprise
- Leadership
- Targets
- Analysts

In the same way that casinos count smiles, actuaries should be “shooting data,” and tying all our decisions to the types of data available to us and analytics that we can perform.

Session 10, “Public Sector Disability Plans,” featured Barry Petruzzi and Dan Skwire describing the unique aspects of the public sector disability market, which includes public administration and education. Petruzzi focused on insured programs, while Skwire discussed self-insured plans.

Petruzzi opened by emphasizing the need for dedicated cross-functional resources to manage and monitor this business. He commented that marketing often begins at public plan conferences, and it can take years to build the relationships needed to be successful. Companies in this market need to be prepared to deal with situations such as sealed bids, complex RFPs for larger groups and consortiums.

Petruzzi continued to outline special considerations for pricing and underwriting public sector plans, including the need for a thorough understanding of the various state teacher and public employee retirement plans, incorporating sick pay and salary continuance into pricing and experience analysis, evaluating older/unusual plan design provisions, evaluating the risks associated with line-of-duty employees, and understanding the impact of collective bargaining on claim decisions.

Petruzzi commented on how the current economic environment is putting pressure on these plans, especially with respect to accumulated sick time.



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Also, there is a trend toward supplemental voluntary plans.

Skwire provided commentary on the unique characteristics of the self-insured market. He emphasized that there are more stakeholders and external influences than private sector plans. With respect to plan design, he commented that unlimited mental and nervous benefits are more common; long-term disability (LTD) benefits are often linked to other benefits (e.g., medical and dental premiums waived while on disability); and complex short-term disability (STD) plans with benefits tied to years of service. He also noted that inertia has limited the movement from self-insured to fully insured plans.

The lunch speaker on Wednesday was Mary Milla of What's Your Point? Training and Presentations. Milla's presentation on how to give an effective presentation was straightforward, yet entertaining. She pointed out that the risk of failure and the risk of rejection are most often not realistic when giving a speech, and that the most realistic risk a speaker faces is usually the risk of an apathetic audience. To connect with audiences, Milla stressed the three P's of presenting: making sure you have a **point** and that you communicate it up front, showing your **personality**, and devoting enough time to **practice**. She asked the audience "What's your point?" and stressed that we communicate our key messages up front, in a true, short, memorable and persuasive fashion.

To illustrate her point, Milla presented two key metaphorical concepts: a triangle and a box of brownies. First, the triangle: presenters should start with their points (the tip of the triangle), and then support their point with reasoning and proof (the base of the triangle). Then, they should stop talking. Second, the brownie box: on its front panel, a brownie box contains its key point ("Moist and Fudgy" and the picture of a brownie). The sides and back of the box have key supporting information (recipe, ingredients, baking temperature, etc.). Presentations should strive to use short and easy-to-follow messages that are more representative of front-of-the-box communication. Presenters should begin with their key points and make sure these messages come out first and most.

Milla used some examples from the world of business to demonstrate the power of a well-rehearsed, well-delivered introduction. She compared Steve Jobs' presentation to a city council's zoning board (http://www.youtube.com/watch?v=gtuz5OmOh_M—start at 0:45 for three minutes) to Steve Ballmer's introduction at a Microsoft meeting (<http://www.youtube.com/watch?v=xR-P6HPZgMs>); she emphasized how Jobs was able to gain his audience's attention through the use of a story, a method which can often be put to good use to communicate your key point. Milla stressed that audiences will remember the story, not the data behind it, stating "[audiences] will connect with you, not the pie chart."

Regarding the oft-used tools for development of presentations, Milla advised the audience to ask themselves, "Do I need a deck?" before diving into the creation of PowerPoint slides.

Milla then gave her fun-filled view of presentation errors and PowerPoint gone awry, by showing the following videos:

- Cliché Bingo: <http://www.youtube.com/watch?v=asZEojlh-gg>
- How not to use PowerPoint: <http://www.youtube.com/watch?v=lpvgfmEU2Ck>

After lunch, in Session 18 on voluntary employee benefits, attendees learned about accident, disability, critical illness and dental products. The focus of the session was on voluntary benefits as a whole, rather than specific products. Attendees learned that the market for voluntary products is growing at a rate of about 4.5 percent per year. The rate of growth varies by product, with some products, such as critical illness, growing at a faster rate than others. About 42 percent of "new business" is actually takeover business, but this percentage will also vary by product line.

Voluntary benefits may be offered as group or individual products; market and pricing issues are similar for group and individual products in these product lines. Consistent with the meeting's focus

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CONTINUED ON PAGE 32

To remain viable, plans need to improve their risk scores, control claims and improve their star ratings.

on analytics, attendees and presenters at this session discussed analytics that are helpful when pricing and evaluating voluntary employee benefit products. In these lines of business, employee participation is a key concern: Is actual participation consistent with what was assumed in pricing? Broker analytics can also be useful when evaluating a product's performance.

Attendees at Session 31 were treated to a rousing game of "Actuarial Ethical Idol," hosted by Curtis Huntington and Sara Teppema. Huntington reviewed the 14 precepts of the Code of Professional Conduct and summarized the role of the Actuarial Board for Counseling and Discipline. Following Huntington's presentation, attendees reviewed case studies involving hypothetical actuaries (Scott, Lauren, Haley and James) to determine who was (or was not) their idol. Audience participation led to some interesting discussions on the appropriateness of the actions of the (fictional) actuaries in question.

After a rousing networking session and a good night's rest (for those who didn't move the party to Bourbon Street), attendees were treated to Session 46, a rousing session on Medicare Advantage, Parts C and D, presented by Corey Berger and Thomas F. Wildsmith. Berger started the session with "Risk Scores—Accruals and Projections," discussing how actuaries can help their clients and employers in the Medicare Parts C and D arena. Berger asserted that the Centers for Medicare & Medicaid Services (CMS) payments are not keeping pace with general medical trends, and that CMS' "coding pattern adjustment" factor is further reducing payments to Part C plans. To remain viable, plans need to improve their risk scores, control claims and improve their star ratings. A cottage industry has sprung up to help these plans increase their risk scores by finding missing diagnoses and accurately accruing the expected payments from CMS for increased risk scores. Berger then went through the methodology that CMS uses to calculate enrollees' risk scores and areas that plans should pay attention to, including dual-eligibles' risk scoring increases, completion factors for accurate accruals and the headaches of deleted diagnoses. Berger finished with "Projecting Risk Scores for Future

Years," which is critical for the annual bid process. Misestimates in this area can cause lower revenue or an uncompetitive product, and while home assessments (assessing a member's risk score through a face-to-face home visit) can improve accuracy, they are expensive. Berger effectively summarized the ongoing risk scoring needs and pitfalls for Medicare Advantage plans.

Thomas Wildsmith followed Berger and presented on "Medicare, Health Care Reform and the Future," discussing the financial challenges to the health care industry amid broader federal budget issues and health care reform. Wildsmith simply and directly laid out the broader issues facing the current health care delivery and payment system, including the unsustainability of the current Medicare system which faces financial and demographic pressures. He made a call-to-action to actuaries to help address the problems in the Medicare program and to begin to deal with these pressures.

At Session 53, professor Marjorie Rosenberg of the University of Wisconsin–Madison provided the theoretical foundation underlying generalized linear models. Her presentation included practical examples. Rosenberg started by providing some of the key assumptions underlying traditional linear regression, including that the error term and the dependent variable are both independent normally distributed random variables. She commented that a common measure of the adequacy of a linear regression model is R^2 (coefficient of determination), which represents the proportion of variability explained by the regression line. She introduced several other measures of model adequacy and goodness of fit, including t-statistics, p-values, F-Statistics, AIC, PRESS and residual analysis. She then demonstrated these evaluation concepts using two linear models designed to predict body mass index (BMI) based on factors such as age, race, co-morbidity count and specific diagnoses.

Rosenberg then proceeded to a problem for which traditional linear regression was not a solution. If you want to predict whether or not an individual has diabetes, the dependent variable is binary and thus not approximately normally distributed. She demonstrated the anomalies that can result by trying to

apply traditional linear regression to this problem. She then introduced the concept of a function (g) of explanatory variables linked to $E[y]$. This link function, which must be invertible, is a key component of generalized linear models. For the underlying binomial distribution, the appropriate link function is the logistic function $\log [\pi_i / (1-\pi_i)]$ where $\pi_i = \text{Probability}(y_i=1 | x_i)$. This function can be referred to as logit (π_i). Rosenberg then developed a logistic regression model based on age, race and BMI. She succeeded in providing attendees with a basic understanding of the underlying concepts and potential power of generalized linear models.

The keynote speaker during Thursday's lunch was Dr. Paul Ginsburg, president of the Center for Studying Health System Change. He presented on the upcoming changes in health care financing and delivery. Even with the challenges facing ACA, the Supreme Court decision (since reached) and a potential push for a repeal by Republicans, Ginsburg believes that the nation's health care delivery system will see some large changes. One place where Ginsburg sees major changes in the marketplace is in the area of provider payment reform. Providers are motivated to do this because of payment rate cuts and a desire to "do the right thing." Take-up in pilot programs has been impressive, and a challenge remains in moving from participating in pilot programs to using these payment systems as a new standard of payment.

These changes in provider payment will present a challenge for hospitals, as they stand to lose admissions due to the revised provider incentives. As consumers are also incentivized to take more control over their own health care, hospitals will need to consider their strategies in order to remain competitive in the market. ACOs will have an incentive to choose low-cost hospitals. Hospitals may also look toward consolidation or increased employment of physicians as strategies for success in the new competitive landscape.

In conclusion, Ginsburg discussed another of his concerns in the face of the post-ACA environment, namely a major restraint on resources for health care delivery. His concern is that as coverage expands to many who are currently uninsured, the

United States could face a shortage of primary care providers necessary to provide treatment to all of these people. Dr. Ginsburg's insights on the delivery and financing of health care in the future were good food for thought for those in attendance.

After lunch, in Section 62, David Snell presented on the fundamentals of genetic algorithms, which use iterative generations of solution sets to develop optimized solutions. Snell presented a generic example about a robot named Robby whose job is to pick up cans on a random walk. Each robot passed down instructions to the next generation, with more successful robots able to pass down instructions to more robots of the next generation. Snell demonstrated that with each passing generation of robots, the random walks of the robots resulted in increased cans picked up when compared with the initial generation of robots.

Brian Grossmiller then presented on his use of Snell's generic genetic algorithm to iteratively find a narrow panel of health care providers for a health plan. The measurement statistics for choosing a provider to be part of the panel were important to create the fitness function in this exercise. Grossmiller created a relative score for each provider and specialist and then let the computer run through hundreds of generations to identify a relatively strong narrow panel. He then let the algorithm run for a few days more and was able to improve the panel's overall relative score by approximately 20 percent. Snell and Grossmiller challenged the actuaries in attendance to think outside the box in solving problems.

Session 68, presented by Jorge Alvidrez and Mark Shaw, discussed limited benefit plans, also known as mini-med plans. These plans have been under regulatory scrutiny recently because of the very low benefits provided compared to what a typical major medical plan would provide. However, the demand for these products continues to be high in markets with a lot of hourly employees and high turnover. National carriers that offer these plans will typically include access to their PPOs. The discounts provided can help stretch the benefit amounts provided. Low participation is very common in mini-med plans;

CONTINUED ON PAGE 34

By using advanced business analytics, actuaries can help their companies make decisions that will help to ensure future success.

10 percent participation is considered good. Some carriers offer both low- and high-benefit plans in a single group: the low-benefit plan is offered during the first year of employment and then the employee is eligible for the high-benefit plan. This is because once the employee has stayed with the group one year, the likelihood is significantly higher that the employee will stay for as long as five years. The presenters pointed out some issues that carriers need to consider, including the ease of signing up new hires, the high expense levels of the product (due to the lower claims cost) and the challenging regulatory environment. Overall the market for this product is growing, and Alvidrez and Shaw believe this will continue to be the case even in a health care reform environment.

Friday opened with a breakfast sponsored by the Health Section of the SOA. To kick off the breakfast, Kevin Law, chairman of the Health Section, discussed current successes and long-term plans of the Health Section. Following Law, Mary van der Heijde introduced the featured speakers—Ted Prospect and Dale Yamamoto—who discussed the Health Care Cost Institute (HCCI).

Prospect began with a high-level overview of the background and goals of the HCCI, a nonprofit, nonpartisan research institute aimed at getting actuaries and economists working together to conduct research using claim data from large national providers. Yamamoto then discussed the 2010 HCCI report, which shows national health care cost and utilization metrics. He also highlighted additional research the HCCI is conducting, including a report on the effects of aging on health care costs and a five-year trend tracker in conjunction with the 2011 HCCI report.

Session 84, “That’s (Group) Life,” featured discussions on a variety of topics related to group life. Sue Sames provided an update on the SOA Group Life Mortality Study, which covers experience from 2007 to 2009 and is expected to be released later in 2012. Eighteen companies have contributed data so far, compared to 12 in the prior study released in 2006. Subject to data issues, key goals for this

updated study include separation of experience for employer-paid vs. employee-paid business, and list bill (individual exposure) vs. self-administered business. Linking waiver of premium and LTD claims, and analysis by geographic area, are additional objectives. Limited data has been received so far with respect to retiree coverage, mortality by salary levels and experience for ported lives.

Kevin Trapp led a discussion of credibility issues for case level pricing, including concerns about possible gaps between theoretical credibility factors and market practices. Theoretical methodologies involve the setting of variance parameters that are related to the perceived variance within the manual rate structure. Audience polling questions indicated a balance between Classic/Limited Fluctuation and Buhlman methodologies, and a range of full credibility standards based on exposure life years rather than claims. Trapp presented a model illustrating the potential impact on the type of business written under varying credibility formulas. Finally, Trapp also discussed other considerations related to credibility, including variance of results by year, weighting exposure by year, experience rates as a minimum percentage of manual and the impact of IBNR.

Rocco Mariano presented data on 2000–2010 U.S. population mortality improvement rates for ages 25 to 84. Although there was significant variation by year, a simple linear regression indicated an increasing rate of improvement with an average in excess of 1.50 percent. The improvement has been greater for males. Mariano also presented information showing the rate has varied by age with somewhat lower levels of improvement in the 45-64 age range. In projecting future mortality improvements, Mariano cautioned that attendees need to consider their own companies’ data, possible variances by industry, and the potential impact of the increasing prevalence of obesity.

Section 94, “Actuaries in Advanced Business Analytics,” provided a fitting conclusion to the meetings, and continued the meeting’s focus on analytics. The speakers included four actuaries who have experience using analytics in their work: Joan

Barrett, Kristi Bohn, Kara Clark and Syed Mehmud. The overall consensus was that actuaries have the skills to perform business analytics, and we should be involved in this work. Actuaries have the skills because we are lifelong learners who believe in peer review and care about data integrity. We also have an understanding of the business that other analytical professionals may not have. Analytics should be used to help make business decisions and can help us understand what is happening in our block of business. However, we have to be smart about how we use them. For example, a health plan may adjust benefits in order to reduce costs. They may see a dramatic reduction in utilization. However, it is possible that the reduction was not fully attributable to the plan change; a portion may be due to “benefit rush.” (If members are aware of

the coming change, they may “rush out” and utilize their plan while the benefits are higher, just before the change takes place.) Actuaries understand these issues and can help provide a true analysis of what the numbers are showing. Clark talked about how actuaries doing advanced analytics need to work with other disciplines, and that communication between disciplines can be difficult, especially when a lot of acronyms are being used. Finally, Mehmud shared three key components of analytics: design, decisions and documentation. A business analytics problem needs to be well-designed to contribute to business decisions. Documentation should start at the beginning of the project and be continued until project completion. By using advanced business analytics, actuaries can help their companies make decisions that will help to ensure future success. ■

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SOA 2012 Health Meeting

Interview with Chairperson Daniel Bailey



Daniel Bailey, FSA, MAAA, is a consulting health actuary for OptumInsight in Rocky Hill, CT; he works with payers, providers, and government clients on projects involving commercial coverage and government programs. He can be reached at Daniel.Bailey@Optum.com.

Health Watch: What did it take to plan and stage the 2012 Society of Actuaries (SOA) Health Meeting?

Daniel Bailey: Most of all, it takes a team of dedicated individuals willing to work together...plus a year of planning and preparation. It's somewhat like a Cecil B. DeMille film—a cast of thousands. Well, not thousands, that's hyperbole, but many—a number of people at the SOA as well as a small army of volunteers, most of whom are health actuaries devoting personal time on evenings and weekends to the cause. Actually, it's not individuals only. The Health Section Council (HSC) is the primary group contributor and its Disability and Employee Benefits subsections as well. Eleven other SOA sections also contribute—about a fourth of the sessions are allotted among them. The rest of the sessions are managed by the HSC. Some sessions are jointly sponsored where interests overlap. People from other actuarial organizations assist too, such as the American Academy of Actuaries (AAA). I have tried to include people from the International Actuarial Association Health Section when possible. Institutional memory is another essential ingredient—people on the HSC and others at the SOA who provide continuity and remember

how to make it work year after year. We also need the generous support of our sponsors.

HW: How long does it take to put it together?

DB: The planning begins a year in advance. It's actually a continual process for the SOA. As soon as one health meeting is over, planning begins for the next. The venues, however, are usually booked a few years in advance. We began in earnest last September figuring out what issues and topics to cover and who should do what. We listen to the feedback provided by past meeting participants. Last September, the SOA held a kick-off webinar that all the section delegates attended. And there were a number of follow-up meetings along the way. Much of the work is carried out by the HSC in conjunction with SOA staff. The process has to be tightly organized and adhere to a schedule. As we draw closer to the meeting date, there are more and more small-scale meetings of moderators and session panelists and the like. If you add up all the hours everyone puts in prior to the meeting itself, it's a mass effort.

HW: What are some of the SOA's meeting objectives that are discussed up front?

DB: In addition to the more obvious objectives, some might not realize that the SOA staff gives a great deal of thought to the quality of the educational experience. One thing that sets our profession apart is the continuing education requirement and the professional development it facilitates. The SOA has enlisted experts and tools such as the "competency framework" to address professional growth and guide the curriculum. Another concept the SOA embraces for some sessions is "blended learning." The SOA strives to make the meeting more than one-dimensional. The HSC members have a great deal of say in establishing what the larger objectives will be for each meeting in addition to the actual health topics the meeting will cover. Beyond the educational aspect, the meeting is a great opportunity to network and gain perspective from one's peers. The SOA seeks to fill out the program with opportunities for interaction that do not otherwise exist for our members.

HW: What was the overarching theme?

DB: I wish I could tell you something *au courant* that includes perhaps vampires, but it's not quite that cool. The theme is always the same—continuing education in a changing world. We strive for a

variety of practical, relevant, timely and thought-provoking sessions that serve us well as continuing education. We have included analytics as a topic for the past few years. Our 2012 keynote speaker, Tom Davenport, addressed that topic front and center. There are five or six different session topics in every timeslot, which allows us to cover a wide range of subjects, and, in some cases, to build on a topic over a sequence of several sessions. We did that with trend and reserving this time, and that was received quite favorably. Some sessions are addressed to those with less familiarity; others are intended for those who already have an intermediate level of knowledge and want something more advanced. We strive for balance but bear in mind the adage from Abraham Lincoln about not being able to please all the people all of the time (I think I'm recalling a paraphrase of Abe's actual quote from a Bob Dylan song about World War Three...yes). There are always sessions that satisfy the professionalism CE requirement. I guess you could call professionalism an ongoing sub-theme. While we're on quotes, I read one from Twain about education being a transition from cocky ignorance to humble uncertainty, or something like that. (I'm paraphrasing again.) Isn't that true?!?

HW: What else can you tell us about the meeting content?

DB: The SOA tries to cover not only the fundamentals such as pricing and reserving, but also softer skills that promote professional growth and development. Some topics are traditional; others are current and cutting-edge. The health meeting is not considered in isolation. Behind the scenes, individuals work to integrate the content of the health meeting with that of the health topics at the annual meeting, the boot camps, the Valuation Actuary Symposium, and the research and webinars produced by the SOA and AAA. Consideration is also given to developments in the exam syllabus and keeping those who are done with exams up to date. There was a great deal of concern about the impact of the Affordable Care Act (ACA) and the nature and timing of the Supreme Court of the United States (SCOTUS) ruling on the meeting content itself. In October 2011, we were uncertain whether the decision would be rendered prior to the health meeting in June. In a way, I think many

of us benefited from the fact that the decision came after the meeting. It forced us to consider many of the intermediate scenarios that might occur and think through their manifold ramifications on the future of the finance and delivery of health care in the United States. Now the whole thing has become very real, and all these intermediate deadlines loom larger than they seemed when sitting on the fence waiting.

In terms of content, we health actuaries are “knowledge workers.” Over the past 25 years, say, the personal computer has added many layers of complexity to our work. There is more to know now than ever before, but likely not as much as next year. That's why we have the diversity of subject matter in six simultaneous sessions in any timeslot. At the annual meeting, there is usually only one health session per slot. Over the past 15 years, the health actuarial profession has evolved into an even more technically oriented and knowledge-intensive career path, and the health meeting has evolved alongside in support of it. Many will recall that we used to call it the SOA spring health meeting, and it was held in May. As Medicare Advantage grew and more of our members became involved in the bid season, the SOA moved the meeting date to after the first Monday in June when bids are due. Sometimes the meeting occurs after the solstice—the beginning of summer. As far as I know, the meeting date is not yet pegged to the lunar cycle.

HW: While we're on the topic of astronomical calendars, do you have any thoughts about why the Mayan calendar ends when it does and what that portends for us all?

DB: That's a big actuarial question. This is just conjecture, but I think the Mayan calendar ends when it does for the same reason that our calendars end on December 31 of each year—because that is how we structure, present and print our calendar, one unit or astronomical cycle at a time. We use one revolution of the Earth around the sun; the Mayan cycle is apparently a much longer astronomical unit. I heard what that Mayan cycle was, and I remembered it for a while, but then I forgot it during bid season. It might not even be an actual astronomic cycle, a pseudo-cycle. When our children were younger, we

CONTINUED ON PAGE 38

Sometimes what we learn from continuing education is a better way to teach ourselves and be effective lifelong learners.

visited the Mayan pyramids in the Yucatan. We are interested in archeological and historical sites when we travel. When the Pyramid of Kukulcan at Chichen Itza was built, people could see the stars more clearly at night, and the Mayan astronomers had a vast store of knowledge about the heavens and their movements. Nowadays we just Google it. However, I'm operating on the premise that it portends nothing important, and hope the Science Channel wastes no further time on programming connected with it and the end of the world. And by the way, I found it very hard to believe the neutrino could travel ... what was it ... 0.0025 percent faster than the speed of light? Apparently some wiring was loose during the OPERA experiment. Do you see how important quality peer review is?!? But we digress.

HW: You mentioned boot camps. Was Medical School for Actuaries part of the health meeting?

DB: No, but it was planned in conjunction with it and conveniently scheduled the day before in the same location. This was an excellent day long program for health actuaries to gain clinical insight into some of the conditions and diseases that drive medical claims. It has been evolving nicely over the past few years. Most of the speakers have been medical doctors, and we have been fortunate to have outstanding physicians volunteer to speak on topics in which they are experts. About five years ago, when Jim Toole was head of the HSC, he encouraged everyone at a health meeting session on population health to find out more about public health where we live. I followed through and eventually did some actuarial consulting around essential benefits and the value of certain health benefits. In order to make that leap, I needed to acquire some clinical background in certain medical conditions, diseases and the medical technology involved. Medical School for Actuaries helped me strengthen my ability to do that work and teach myself what I needed to learn. Sometimes what we learn from continuing education is a better way to teach ourselves and be effective lifelong learners.

HW: How did you come to be the chairperson?

DB: One thing leads to another. I could quote

Forrest Gump's mother here. I have always appreciated the benefit I receive from attending the health meeting over the past 15 years or so. I remember having had some interesting and educational conversations with Harry Sutton years ago at SOA health meetings and realizing how much he knew and how much a health actuary must know to be highly effective in this field. Harry co-authored a book about HMOs on the SOA syllabus, and he has been a great AAA and SOA volunteer. For the past five years or so, I have helped out with the SOA health meeting and the annual meeting. When I was on the HSC, one of my first responsibilities was the health sessions at the annual meeting. Last year I was co-chair for the health meeting and greatly enjoyed working with Chairperson Joan Barrett. Although I finished out my three-year term on the HSC a couple years ago, since I left, I have been helping as a Friend of the Council with the health meeting and boot camps. Along the way, I have tried to document some of the aspects of the planning process in the way of best practices for session planning and the like. It's important to find coordinators, moderators and panelists who will honor their commitment to speak and follow through with a quality session while fulfilling the interim deadlines and obligations along the way. My goal is to be part of a tradition that builds on its own momentum and continually improves itself long into the future. I have volunteered with the AAA and SOA in different respects for almost 10 years. Many years ago, I attended an annual planning meeting of the AAA that enriched me as a volunteer. Dan McCarthy was chair. He had been a president of the AAA. I was deeply impressed by his professionalism and ability to lead the meeting efficiently and effectively. If I recall correctly, Dan was a practice leader at Milliman at that point in his career. He was someone I emulated. Along the way, you meet people who inspire and serve as positive role-models. That is one of the benefits that I have enjoyed as a volunteer.

HW: Have you been a volunteer in other aspects of your life?

DB: Yes, and it has been equally enriching. But I don't want to give anyone a false impression that I do a great deal of volunteering because I don't; and there are actuarial volunteers who deserve far more credit.

I was a literacy volunteer years ago; I co-taught Sunday school for a while; and when my older son was a Boy Scout, I was a woodworking merit badge counselor. We designed and made these small, well-crafted, hardwood boxes—one of the boys was born with Down syndrome and he created an extraordinarily nice project. Looking back, I think I gained as much from these experiences as those I helped. But I can think of others whom I admire who devote a much greater portion of their lives to nonprofessional volunteering and *pro bono* public service. My friends' son is doing HIV/AIDS and malaria education work and outreach in a remote African location with the Peace Corps. Closer to home, my brother-in-law retired from a fantastic career at ESPN, and he now devotes some of his time to driving cancer patients to chemotherapy treatments here in Connecticut after having attended training for the same at several local hospitals, and he also promotes cancer research. That's commitment I admire greatly.

HW: Any comments on New Orleans as a location for the health meeting?

DB: It depends on what one makes of it. A month before the meeting, I read an article in the *New York Times* describing New Orleans as a city of the wicked and the curious. Humorous as it was, I think that's what we called false dichotomy when I studied rhetoric. And it certainly does not adequately capture the thousand or so of us who converged on the Marriott for the meeting. Obviously, it's a place of temptations and distractions, and there seems to be a tractor beam that operates from Bourbon Street silently drawing in visitors with drinking problems from around the globe. After the meeting was over, my wife joined me in New Orleans and we spent the weekend. We had first visited here together in the late 1980s for one of her conferences, and we greatly enjoyed the food, music and antique shops of the French Quarter. This June, we finally got tickets to hear Ellis Marsalis and his quintet at Snug Harbor. We only went to Bourbon Street once, and that was to eat dinner at Galatoire's, which has been there serving excellent meals since long before Bourbon Street became tacky. It was a great dinner. I had to wear a jacket, but at my age, that's a small extra price to pay for extraordinary French cooking. We also had a chance to drink a "hurricane" at Pat O'Brien's after a free jazz concert at the Mint on Saturday. For those of us born near Hartford, there's

nothing in the United States quite like starting the day with a coffee and beignets at Café du Monde. Plus, I didn't have to work that weekend, which is always good.

HW: Before we close, are there any individuals you would like to mention who were instrumental in helping with the meeting?

DB: Yes, very much so; there are many. But if I start, I might not be able to stop, especially with the volunteer list. I want to thank every person who volunteered in whatever capacity and let you know we greatly appreciate your contribution. Without you, we have nothing. Last year, I worked more closely with the SOA than ever before, and I have to say I was deeply impressed by the competence of the hard-working folks at the SOA who are involved. There I think I can name names, and only there, and I apologize in advance if I leave anyone out. Kerri Leo is the primary planner and tireless but ever cheerful in her efforts. Sara Teppema contributed enormously. Kristi Bohn began her contributions to the meeting as an HSC member and was then hired by the SOA about the same time Sara was promoted—Kristi had a hand in several aspects of the meeting. Jill Leprich is always there when needed, and she usually has a smile on her face—let that be a lesson to those of us of often sterner and less accessible demeanor. Glenda Maki helped me with some announcements—it was uncanny; she knew just what to say. Linda Damitz, Judy Powills and Sherri Blyth also pitched in. Even the SOA leadership shows up at the meeting to make sure all goes smoothly. If you ever wondered where your SOA dues go, I am happy to report that these dedicated folks take enormous care in their work. I should also thank the many sponsors, including my employer, OptumInsight, which generously donated to support the keynote speaker, Tom Davenport, after they had already given until it hurt in order to fund the networking reception on Wednesday evening. Finally, I would like to thank all who attended, and I encourage health actuaries to find ways in which you can give back to our profession as your career progresses. ■

SOA 2012 Health Meeting Interview with Mary Milla

By T.J. Gray and Doug Norris



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At the 2012 SOA Health Meeting, Mary Milla shared expert tips on giving effective presentations, with particular focus on the skills and approaches actuaries can take advantage of to improve effective communication. We met with Milla before her presentation to get some thoughts from her on these topics.

Doug Norris: As actuaries, we're very technically minded. What are some of the biggest mistakes that technically minded people make when they present?

Mary Milla: They believe that their audiences simply want the technical data, and they leave it up to the audiences to interpret. They don't take full advantage of their expertise and go beyond simply delivering the data. I'm a sports fan, so I compare it to sports. My technical clients put themselves in the "play-by-play" box. They just do play-by-play, but their audiences want color commentary as well. Don't just do play-by-play and give me the data; be the color-commentator and interpret the data. Tell us what we should do and how we should act upon the data. That elevates you from being just the data person to being a real member of the team that people want to seek out—"We don't want to make decisions until we hear from the actuary, because we have an actuary that we actually understand and can be persuaded by because he does play-by-play and he does color."

DN: In terms of bang for your buck, where are the easiest places to focus if someone wants to improve his or her presentation abilities?

MM: Three ingredients—that's what I teach all of my clients. You have to have a point; you have to show your personality; and you absolutely have to practice. Those are the three things that I'm always focusing on with my clients.

T.J. Gray: As far as practicing, are there some methods you have found are better than others?

MM: Well, the one thing they are not using is that they're just not doing it—they are not practicing. They define practice wrong, and the number one wrong way that I find that people define practice is "I looked at my slides. I looked at my slides on the plane. I reviewed them." I see this on airplanes all the time—I see people opening up their laptops and

sort of nodding through their slides. I try to behave and be really quiet and not say, "Hi, I'm a public speaking coach! Let me help with that." The number one mistake that people make in practice is they don't do it—they mumble to themselves.

In terms of practicing, what I tell folks to do is prioritize their speaking opportunities on their calendar. Practicing isn't just for a major speech in front of hundreds of people. It can be for any meeting, any communications opportunity that you deem is high-stakes for you. I have clients who rehearse one-on-one meetings and clients who rehearse conference calls; if they are going to lead them, they will rehearse small group presentations. Practicing is rehearsing out loud, from start to finish, and it is amazing to see the difference between take one and take five or take six. It's oftentimes a vastly different presentation than when they started.

TG: Have you seen any kind of magic number of how many times someone needs to practice before it becomes really good?

MM: Everyone has their own magic number. I had a client who had a high-stakes presentation to deliver to his most important sales people, and he rehearsed it 21 times. He started rehearsing it seven weeks before he actually had to deliver it. My magic number is about eight, and I define magic number as "you hit a point where you just know that if you keep doing this, you'll get worse." You just have to feel in your gut, "Ok. I've got it, and now I'm going to stop." That's how it is for me. But everyone has their own magic number.

I hear, "you make it look so natural," all the time as well, and I think it's sort of the ultimate compliment and the ultimate insult rolled into one. You do want to look natural, but when people come up to you and say, "Oh, you're such a natural. You just have it. You're just born with it," part of me wants to choke the person who says it because I think, "You have no idea. It took 25 hours or it took 50 hours to get 'natural.'"

That's another misperception that people have about practicing: I get asked a lot, "Well, if I practice, I'll come off as too smooth, too slick and too rehearsed." I haven't met that person yet. Practicing is never

going to hurt you. The really unfair thing about public speaking is that it takes a lot of rehearsal to look unrehearsed. I wish it were different because we would all rather be doing other things with those 25–50 hours, but it does pay off.

TG: What is your opinion on some of the tools that people commonly use to help prepare presentations, like PowerPoint?

MM: PowerPoint is a terrific tool when it is used strategically and correctly. If it's used as a crutch, that is where PowerPoint gets a lot of blame that it just doesn't deserve. It's a really effective tool if you use it properly. For example, I tell all of my clients that the number one mistake people make when preparing presentations is to first open a PowerPoint window and start creating their slides. At that point, what you're doing is writing your whole speech on slides and you're really writing a little book, and not a presentation. What I make my clients do is shut down PowerPoint, go old-school, and take pen to paper. I make them write down, "Here's what my goal is, here's where I want to take the audience, here's what my messages are, here's how I'm going to prove my messages, here's how I'm going to open, here's how I'm going to close." And then I say, "Now, do you even need PowerPoint? Do you even need it?" I have clients who have abandoned PowerPoint for certain types of meetings with great success. So it's a great tool when it's there to support you and advance your message, but when you abuse it, it really takes away from your message.

DN: Is it because people use PowerPoint first that you think they actually end up writing their entire presentation out and then they read it to the audience?

MM: Exactly. The number one complaint I get, especially from executive audiences, is "Why does it take 90 slides to tell me how many widgets we sold last quarter? You could tell me that story in one slide." When I then ask people in middle-management, "Why does it take you 90 slides to tell a story that could be told in one or two?" they say, "Well, when I'm presenting in the executive board room, it's very intimidating, so I want the executive team to know that I'm smart." Here's what one CEO said to me years ago: "If you're presenting to the CEO



Mary Milla

and the CFO and the CAO and the whole C-level team, you already are smart. To get on our agenda, you have to be smart. No one says 'Hey, let's send the weird, stupid guy down the hall in to present to the executives'. No one does that. We already know you're smart. We get it. So tell us your story in five slides, not 90."

DN: Do you have any tips for tailoring your presentation to a certain audience, for example a disparate group of people?

MM: First of all, absolutely start by analyzing your audience. Do you know when I learned this? I learned this in my very first public speaking class in the fifth grade. It's not rocket science, and people tend to completely overthink it. Absolutely analyze your audience—take off your hat, and put on theirs. Ask yourself, "What does my topic look like to them? If I were in their shoes, what would I ask?"

To your question about disparate audiences—I get this all the time, where I know that I have people who have heard my speech or been in my workshops before, and I get really obsessed with repeating things for them. What they tell me is "don't":

CONTINUED ON PAGE 42

“Err on the side of those who haven’t heard it before.”

a refresher is always good, and people who have heard the message before or who are more up to speed than others in the room don’t mind hearing it again. Out of respect for those for whom the information is new, they’re completely fine with you going over it again. My audiences tell me, “Err on the side of those who haven’t heard it before.”

TG: Regarding the audience, do you have any tips for what to do if you feel that your audience is kind of going away, or you’re getting off-track on your presentation? What’s a good way to get back on point?

MM: First, prevent that from ever happening in the first place. That comes with your presentation—really tailoring it to your audience. If you haven’t done that and you find yourself seeing people slumping in their chairs, people checking their BlackBerrys, people passing notes, that sort of thing, I’m a real advocate of just bringing your presentation to a grinding, screeching halt and confessing, “I sense that I’m losing some of you here. Tell me why that is.” Make it interactive instead of just slogging through. The audience will really appreciate that because what you’ve told them is, “I am actually looking at you. I am actually watching you, and I am actually paying attention and responding to what you’re giving me here.” Then, I think you’ll have a much more productive meeting. You have the wiggle room to do that in a small-group presentation, so if you’re presenting to an internal team, maybe up to 10 to 12 people, you can do that and create a good, interactive, productive meeting. If you’re speaking to hundreds of people, you don’t have that option, so that’s why preparation is so key.

DN: On a related note, I’ve had some people in the audience who have a specific angle or sound bite that they want to get across. How do you keep audience members from derailing you if they want you to go in a direction that you don’t want to go?

MM: You have to prepare your key messages ahead of time so that you can use the Q&A as an extension of your presentation. For whatever someone gives you, you have to have your key messages in mind so that you can steer the conversation back to what the main messages were. There are all sorts

of empathetic language you can use to do that: you can say, “I hear what you’re saying” or “I can appreciate that we have a different point of view.” You just answer the question and address the concern. Then say, “But appreciate where I’m coming from ...” and steer the conversation back to your key message.

The other thing that works really well is what your body language does with someone who is trying to take over or derail. You maintain eye contact with them during the question, and then after you give the first sentence of your answer, break eye contact and address your answer to the entire room. That signals to that person that “I’m done with you, and I need to give someone else a chance to have their voice heard.” That works very, very well.

DN: Your website is a tremendous resource for people who are working on presentations. Do you have any other resources that you’d recommend for the readers?

MM: Yes, there is a terrific book called *Why Business People Speak Like Idiots*. It’s a snarky title, but it’s a delightful book with a lot of really practical information. It was written by a couple of Deloitte consultants who got really tired of listening and presenting with jargon and buzz words and PowerPoint templates, and it’s a wonderfully refreshing book about injecting personality back into business communication.

The one that I’m reading now is a book called *Quiet*. It’s by Susan Cain, and it’s about being an introvert in an extroverted world. As an introvert, it’s a wonderful book that I think is great for introverts and extroverts but, speaking as an introvert, you read it and you just say “Oh, I’m normal.” It’s very, very refreshing. The book talks about how introverts really can’t use their introversion as an excuse when it comes to presenting because research shows we have the ability to act like an extrovert when we’re talking about something that we’re passionate about. So basically it’s turning it on for an hour and then you can go back to your couch and curl up in the fetal position. It talks about how speakers, even in their contracts, will set up their time to say, “Look, in order to be my best for this speech, I have to devote all of my energy to this, so I have to schedule down time.” I just think the book is a godsend for introverts. ■



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SOA 2012 Health Meeting Interview with Paul Ginsburg

By T.J. Gray and Doug Norris

Dr. Paul Ginsburg, president of the Center for Studying Health System Change, presented on upcoming changes in health care financing and delivery during the 2012 SOA Health Meeting. We met with Ginsburg in advance of his presentation to get his thoughts on the upcoming environment for health care providers, payers and consumers, and the role of actuaries in that environment.

Doug Norris: What are your thoughts on whether the Affordable Care Act (ACA) does enough to rein in health care spending?

Paul Ginsburg: I would say that the law is not really a cost containment law; it's really a law to expand coverage. I would say that the most powerful part of the law that addresses cost is the "Cadillac" tax—in 2018, having a tax on premiums, or employer contributions above certain amounts.

What I have gotten optimistic about is the program of pilots and provider payment reform—the accountable care organizations (ACOs), episode bundling, medical homes. That's really capturing something that there is broad support for in the provider community and the payer community, and I think that provisions of the law that permit Medicare to participate in that have been a significant catalyst. One thing I wouldn't have mentioned a few months ago but I do mention now is some of the rate cuts in Medicare that will take place in the future, particularly for hospitals. For example, the change in the formula for productivity increases, which is expected to lead to some very substantial cuts year after year. When I talk to hospitals, this has really spurred them to become much more serious about cost containment and to really get engaged in pilot programs to change payments. So even though it's just a Medicare thing, it really seems to engage hospitals, in particular, in looking for long-term ways to reduce costs.

T.J. Gray: What are some of the payment structures that you've been recommending to hospitals to help them?

PG: You have the payment structures that I would call, in general, "global payments," which really are "capitation-lites." These structures have elements of capitation with some shared savings provisions, and whether it's the alternative quality contract with Blue Cross Massachusetts or a Pioneer ACO

or a shared savings ACO, I see a lot of experimentation along those lines. I actually think what's easiest for a provider to pursue is episode bundles because they are very focused and limited. You might just be working on orthopedic episodes and that's probably a lot easier for a hospital to handle than doing something which is capitation-based, where it has to worry about the whole range of not only all the services it provides, but all the services that a lot of other providers provide for patients who would be attributed to the ACO.

DN: Do you think the individual and Small Business Health Options Program (SHOP) exchanges will have some effect in terms of adding competition to the mix and getting more people into the game?

PG: Yes. I think that these state exchanges will create a much more competitive insurance market than we've seen for individuals and probably for small groups as well. It's very uncertain as to what kind of small group participation you'll have in the exchanges, but for individuals it's a really competitive market. It's a much easier market to enter than current individual markets. It helps individual consumers line up plans and compare them because there will be a gold, a bronze and a silver benefit structure. The websites will be usable tools. So I think it will be a more competitive market: margins are going to be lower than they are. I think a lot of inefficient players in the individual market will go out of business, which would be a good thing.

TG: What kind of role do you see for the new organizations that are forming, like co-ops and new ACOs?

PG: I'm very skeptical whether co-ops will really be a significant factor in most, if not all, markets. It seems to me that so few organizations are co-ops today, and many of them started decades ago and probably continued despite the fact that they are co-ops. I envision many of these starting co-ops either not succeeding at all, or just not being very large. There was an example in the 1970s where the federal government really did a lot to try to promote HMOs, and a lot of today's companies started back then with some of that assistance. That was a model that turned out to have a lot going for it, and I don't see the co-ops as bringing anything. It was really a sop to single-payer people.

DN: What role do you see consumers having in keeping their own health care costs under control?

PG: I think that's really starting to happen now as consumers are asked to pay a lot more of the bill and asked to think differently. I think we're going to see more products which have patients focus on choosing providers based on who is expensive and who's not expensive, such as narrow network products and tiered designs. When the ACA focused on patients, which was in the Medicare program, I thought that it went out of its way to not involve patients. The absence of financial incentives to choose providers or to choose an ACO, I think is an omission. It wouldn't have been easy because of all the supplemental coverage, but pretty soon Congress will have to start recognizing that Medicare beneficiaries are living in such a different financing environment than privately insured people that this is not sustainable.



Paul Ginsburg

TG: What do you see as the optimal role for actuaries in helping keep the cost of care reasonable?

PG: I think that with these developments, for example provider payment reforms, there is an enormous amount of work for actuaries in designing and getting those systems to run. Many of them are shared savings based, which means projections of what spending would have been in their absence are needed. I actually think that the exchanges are going to promote new entries, new products, so I see it as somewhat of an "employment act" for actuaries.

DN: I read your New England Journal of Medicine article about the slowdown in the Medicare trends lately. Do you think that is a bellwether for the commercial market trends, or do you think that there is a payment shift in terms of where the dollars are coming from?

PG: When we got into that article we concluded that a lot of the slowdown in the projection in Medicare, over the long term, is the various price reductions that have been enacted, which really brings up "What is the model of cost shifting?" I say this with more hesitation because, in my organization, we're actually engaged in a fairly large scale quantitative study of cost shifting, and we're actually not finding it. We're actually finding that when Medicare squeezes its rates, providers cut their costs, and in the aggregate they don't increase prices to private

insurance. You have a real distinction because you see some hospitals with so much leverage, not using it all the time. They can shift. But you also have a lot of hospitals that don't have that much leverage so when Medicare cuts rates, they have to cut their costs and they have no choice but to do what they have to do to avoid negative Medicare margins.

TG: What's the most important thing you'd say to an audience with 500 actuaries about this upcoming market?

PG: This is going to be a very exciting time. There is going to be a lot of change in health care financing, and some if it might depend on your personality as to whether you say, "Hey, this is terrific! I'm going to have a great time participating in this change," as opposed to, "Oh, these problems are overwhelming. There is so much for me to do." I get the benefit of looking in from the outside. I don't have to make some of these really tough decisions about, "What are the people who are uninsured now, who become insured because of the tax credits, what's their likely health care use?"

Some actuaries will say, "Oh, boy. I don't know how to do that. I'm uneasy because I'm not going to be able to be very precise about it," whereas others will say, "I haven't had a challenge like this in a while. I'll do my best at it." ■

REX Pool Open for Business!

By Steven Siegel



Steven C. Siegel, ASA, is research actuary at the Society of Actuaries in Schaumburg, Ill. He can be reached at ssiegel@soa.org.

An application should be based on either a well-thought-out research idea or proposal received from a researcher.

In the prior issue of *Health Watch*, I described the new research strategy that was adopted by the Society of Actuaries (SOA) in October of 2011. In that article, I mentioned that the research strategy embodies three primary approaches to research:

1. Advancing knowledge.
2. Expanding boundaries.
3. Intellectual capital research.

Furthermore, a primary goal of the strategy is to increase the amount of expanding boundaries research produced by the SOA (defined as research that expands actuarial practice, supports public policy and/or serves societal interest). In addition, funding was dedicated to support expanding boundaries research in 2012 and 2013, with the aim of encouraging the development of more multiyear, multistage projects with a broader, deeper focus.

I am pleased to report that this dedicated funding, which has been since named the Research Expanding Boundaries Pool (or REX Pool, for short), is now open for business! As of this writing, close to 20 applications have been received for the available funding of \$400,000. The applications are currently being reviewed by the Research Executive Committee (REC) for potential funding. Decisions are expected in early September.

To maximize the REX Pool's value, we encourage all section members to think of ideas or proposals that may be appropriate for it. Below are the eligibility criteria and procedure for submitting applications to the REX Pool:

Eligibility Criteria

The following entities are eligible to submit an application to the REC for funding consideration:

- Established SOA research committees
- SOA sections
- Committees or task forces of the SOA board of directors
- REC-formed ad hoc committees.

An application should be based on either a well-thought-out research idea or proposal received from a researcher.

Procedure for Submitting Applications

Entities meeting the eligibility requirements may submit an application according to the following guidelines.

- Requests for funding will be accepted at any point throughout the applicant's research idea and project development process (for example, before an RFP is issued, after an RFP is issued, or after a proposal is received).
- To make a request for funding, entities meeting the eligibility requirements must complete the application form available on the SOA website.
- Applicants may submit more than one application at a time. Applicants submitting more than one application must complete a separate form for each individual idea or project.
- Applications may be submitted at any time throughout the year, and will be reviewed during established periodic REC meetings.
- There is no minimum funding requirement for a project/research idea to be considered by the REC for funding.
- There is no maximum funding limit for applications; however, funding is subject to available resources.
- Multiphase and/or multiyear projects are encouraged. The REC may require intermediate approvals for multiple phases of a given project.
- Applicants are not required to co-fund the idea/projects for the REC to consider the idea for funding consideration.
- Applicants are expected to appoint a spokesperson to briefly present the idea to the REC and be available for questions.
- Applicants who are declined funding may seek funding from alternate sources including SOA sections and committees. Declined applicants may be given the option to reapply in a future review cycle, after addressing REC feedback.
- Questions about the application form or process may be addressed to REC@soa.org.

Procedures for Reviewing Applications

Application forms received will be subject to the following selection process:

- Applications will be reviewed and approved by the REC in scheduled semiannual review cycles. The REC may review time-sensitive applications off cycle on an as-needed basis.
- If an application is accepted, the REC will also communicate next steps in terms of REC involvement in the remainder of the project.
- Each review cycle is anticipated to last approximately six to eight weeks from the application due date until communication of funding decisions. For example, applications submitted during the month of February would be reviewed during the first cycle of the year. Thus, the funding decision is expected to be communicated to applicants toward the end of April.

- d. Does the proposed research expand boundaries for the profession? Through expanded practice? Through public policy? Through societal interest?
- e. Could the proposed research garner significant media attention?
- f. Is the proposed research multidisciplinary?
- g. Does the proposed research meet a time-sensitive need?
- h. Will the research be desirable to certain audiences?
- i. Does the proposed research represent a new partnership for the SOA, including non-actuarial partners and/or co-funders?
- j. Would the proposed research enhance the standing of the profession (or damage it if passed up)?

So, got an idea for the pool? Don't be bashful—consider contacting a committee or SOA staff member with it. You never know—the idea may have great REX appeal! ■

	Application due	Initial review (screen)	Additional information and presentations, if any	Decision made
Cycle 1	March 1	March 15	April 1	April 15
Cycle 2	Aug. 1	Aug. 15	Sept. 1	Sept. 15

The following chart demonstrates approximate relative timing; exact dates are subject to revision.

- During a review cycle, additional information may be requested or project spokespersons may be invited to present the proposed research ideas to the REC.
- The REC has established considerations for evaluating the applications. The considerations may include, but are not limited to, the following:
 - a. Does the proposed research further an SOA strategic goal?
 - b. Will the proposed research lead to unique and relevant insights?
 - c. Will the proposed research address a gap in research?

Medicare Advantage Hierarchical Condition Categories: Updated Study Results

By Corey Berger and Eric Goetsch



Corey Berger, FSA, MAAA, is a consulting actuary with Milliman in Atlanta, Ga. He can be reached at corey.berger@milliman.com.

In January 2011, we published an article in *Health Watch* summarizing a study we completed regarding the number of Hierarchical Condition Categories (HCCs) per Medicare Advantage (MA) member using 2009 members and 2008 diagnoses. One of the goals we had for that study was to help MA plans identify a “baseline” for expected number of HCCs for their population as well as a potential “upper limit” to identify where their coding was relative to their peers. With the implementation of the Affordable Care Act (ACA) for MA plans entering its second year in 2013 and the resulting impact on payment rates from both the fee-for-service (FFS) phase-in and changes in star ratings, the pressure on MA plans to ensure that their risk scores appropriately reflect the health status of their population continues to increase.

The Centers for Medicare & Medicaid Services (CMS) assigns a risk score to every MA member based on the member’s characteristics, including age, gender, disability status, Medicaid status and “health” status. The majority of revenue received by MA plans is based on the risk scores of their members, and the health status is the primary variable in the calculation of the risk score. The health status of the member is based on the “diseases” the member had in the prior year. CMS determines the diseases/HCCs each member has based on ICD-9 diagnosis codes. A member is flagged with an HCC if an ICD-9 diagnosis code has been submitted by MA plans (or fee-for-service providers) to CMS for the prior year that maps to the HCC. For example, ICD-9 code 250.00 (diabetes mellitus without mention of complication) maps to HCC 19.

The CMS risk adjustment model for the vast majority of MA members has 70 unique HCCs with an additive risk adjustment factor assigned to each HCC. (CMS uses a different model for end-stage renal disease (ESRD) members that has 87 HCCs.) If a member has the 250.00 ICD-9 code submitted (and has no other diabetes-related ICD-9 code), then that member’s risk score would increase by 0.162 (for the 2009–2012 models) or 0.127 (for the 2013 model). This would result in an additional payment to a typical MA plan

of between \$80 and \$100 per member per month (PMPM). Hence, identifying and submitting all appropriate ICD-9 diagnosis codes to CMS results in a higher risk score for the member and an increased payment to the MA plan.

The Revenue Opportunity in Accurate Diagnostic Coding

Ensuring that all appropriate diagnoses for its members are submitted to CMS is very important, as this is one of only a few areas where an MA plan can affect its revenue. With the implementation of the ACA, star ratings also have a significant impact on revenue; however, there is little opportunity to retroactively impact star ratings. Because CMS allows MA plans 13 months after the end of the year to submit diagnoses, MA plans CAN review physician and hospital charts, submit additional diagnoses to CMS and receive a retroactive payment for those diagnoses. Reviewing charts, however, requires paying coders as well as cooperation from the physicians and hospitals to allow the coders access to their charts. Hence, MA plans want to make sure that the cost of chart review is reasonable relative to the expected increase in revenue. Understanding where the MA plan’s diagnosis coding effort stands relative to the average or the upper limit of its competitors is therefore important in determining what should be the level of investment in chart review.

To help determine the upper limit as well as variations in the market, we reviewed data for more than 50 unique CMS contract numbers (H numbers) that included more than 800,000 unique members. These totals are a slight decrease from our previous analysis due to the exclusion of several clients from the prior analysis. The current analysis is based on 2010 members and their 2009 diagnoses (which is an update from the prior analysis, which focused on 2009 members and 2008 diagnoses). The results are focused primarily on coordinated care plans (local HMOs, local PPOs and regional PPOs). The results exclude private fee-for-service (PFFS) plans, chronic and institutional special needs plans (SNPs), and members who are flagged as institutional ESRD. In addition, we excluded new enrollees because they do not have any published HCC information.



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Study Results

The HCC analysis revealed a number of characteristics that can help an MA plan evaluate whether the current risk scores for its population (or segments of its population) justify the cost of additional chart review. Key findings include:

- **Dual-eligible (i.e., eligible for Medicare and Medicaid) members have a significantly higher number of HCCs than non-dual-eligible members.**

This result is the same as in our previous study. On average, non-dual-eligible members (non-duals) have 1.50 HCCs, while dual-eligible members (duals) have 1.89 HCCs. These numbers reflect a slight increase for non-duals and a slight decrease for duals from our previous study.

- **The average number of HCCs varies meaningfully by organization, even after normalizing for age/gender and geography.**

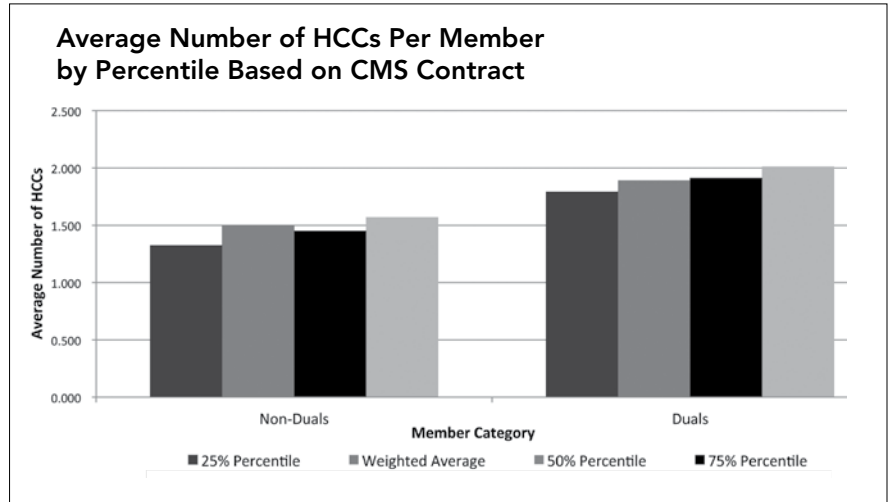
In organizations at the 25th percentile, non-duals have 1.33 HCCs and duals have 1.79 HCCs. In organizations at the 75th percentile, non-duals have 1.57 HCCs and duals have 2.01 HCCs. For non-duals, organizations at the 75th percentile have about 18 percent more HCCs per member than organizations at the 25th percentile. For duals, organizations at the 75th percentile have about 12 percent more HCCs per member than organizations at the 25th percentile. Assuming an average risk score increase of 0.35 per HCC, this would indicate a difference in risk scores of 0.09 for non-duals and 0.08 for duals between organizations at the 25th and 75th percentiles. Exhibit 1 summarizes the average number of HCCs for non-duals and duals at the 25th, 50th and 75th percentiles, as well as the overall weighted average for all plans. These results are consistent with our prior study.

- **The number of HCCs increases steadily as members age.**

From age 67 to 77, the average number of HCCs for both non-dual males and females increases by about 50 percent. The increase is less dramatic for duals (closer to 10 percent) because they have more HCCs initially. Exhibit 2 provides a detailed summary of the average number of HCCs by age and gender

Exhibit 1

Milliman Medicare Clients
2011 HCC Survey Results
Coordinated Care Plan Members (1)
Includes All 70 HCCs (2)

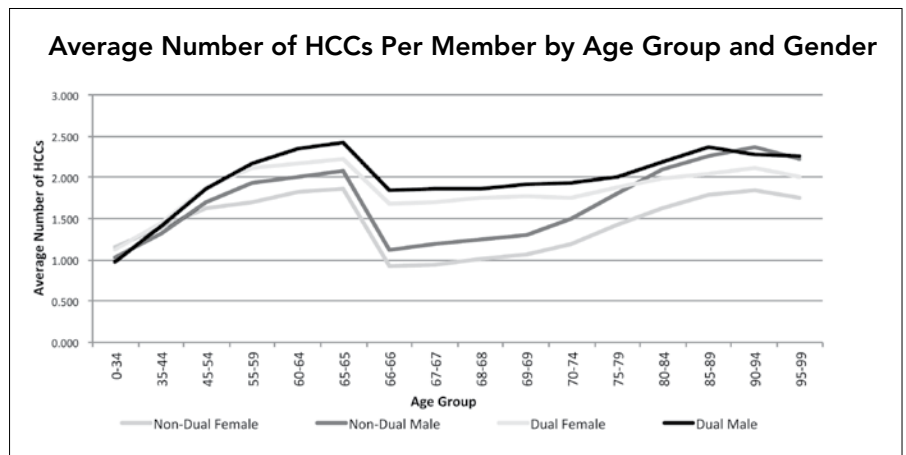


(1) Excludes Chronic SNP, Institutional SNP, and PFFS Members and New Enrollee, Institutional, and ESRD members.

(2) Percentiles and Weighted Averages are after normalizing for age/gender and region.

Exhibit 2

Milliman Medicare Clients
2011 HCC Survey Results
Coordinated Care Plan Members (1)
Includes All 70 HCCs (2)

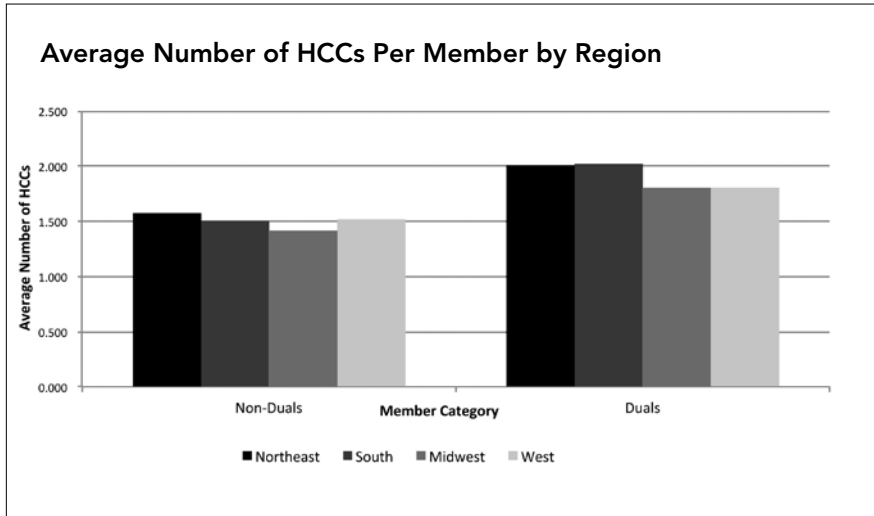


(1) Excludes Chronic SNP, Institutional SNP, and PFFS Members and New Enrollee, Institutional, and ESRD members.

CONTINUED ON PAGE 50

Exhibit 3

Milliman Medicare Clients
 2011 HCC Survey Results
 Coordinated Care Plan Members (1)
 Includes All 70 HCCs



(1) Excludes Chronic SNP, Institutional SNP, and PFFS Members and New Enrollee, Institutional, and ESRD members.

(2) Regions are based on the U.S. census definitions.

for non-duals and duals. The decrease in average HCCs at age 66 is due to the inclusion of members eligible for Medicare due to age as opposed to disability. The data through age 65 is for disabled members only. The data does not include “aged” members in the age-65 bucket since most members who become eligible for Medicare by turning 65 do not have the required 12 months of historical diagnosis data to determine their HCCs. These results are consistent with our prior study.

- **Non-dual males have more HCCs than non-dual females.**

The average number of HCCs for non-dual males is about 20 percent greater than the average for non-dual females. Dual males and females have approximately the same number of HCCs. These results are consistent with our prior study.

- **Geographic location does not have a significant impact on the average number of HCCs.**

The average number of HCCs in our current study is NOT materially impacted by the

geographic location of the members (which is a significant change from our prior study). Unlike in the prior study, the spread between regions is only about 10 percent. Part of the reduction in the difference by region may be a change in plans that contributed to the study, but we also believe this indicates that coding efforts can result in appropriate diagnosis submission throughout the country. Exhibit 3 provides a summary of the variation in HCCs by region.

- **Individual disease states also vary by age/gender and geographic location, although not at the same magnitude as HCCs in total.**

What Should MA Plans Be Reviewing?

Based on the data we reviewed for this study, MA plans need to first understand their current membership mixes in order to understand their potential for finding “missing” diagnoses. Key questions for an MA plan to ask are:

- Is the MA plan seeing a significant difference in the number of HCCs between dual and non-dual members? If not, it may want to focus on the coding for dual members because we would expect that dual members would have more HCCs and those members would be more likely to have “missing” diagnoses in this situation. If the gap for an MA plan is wider than the gap in Exhibit 1, then focusing on non-dual members is likely the best place to start.
- Is the plan seeing an increase in the average number of HCCs by age? How much of an increase? If the increase is significant, then focusing on younger (and potentially newer) members may be better than focusing on older members, and vice versa if there is little increase by age.

Other Considerations

With the likely implementation of Risk Adjustment Data Validation (RADV) audits going forward, plans should also ensure that they have sufficient documentation for their submitted diagnoses. While submitting all appropriate diagnoses is a key for financial performance, if your plan is at the upper end of the expected number of HCCs, reviewing members with diagnoses who do not have other indications that they have a specific disease (i.e. members with

a diabetes HCC who do not have any diabetic supplies filled during the year) may be necessary. While this may not have any immediate impact on revenue, it may assist in reducing risk from a RADV audit, potentially identifying members with a disease who are not following an appropriate drug regimen, and ultimately help control medical costs.

Key Methodological Considerations

Please note the following important information in reviewing and interpreting these results:

- For many of the plans included in this analysis, we received the “final” Model Output Report (MOR) data file, which includes all 2009 diagnoses submitted through January 2011. Where available, this was the source of determining the HCCs for members included in the analysis. For plans that did not provide the “final” MOR file, we relied on MOR data from July through December of 2010. Any final Risk Adjustment Processing System (RAPS) data submissions would not be included for plans that did not provide “final” MORs, in which case their HCC counts may be slightly understated depending on the additional RAPS data submissions between March 2010 and January 2011.
- Because we did not observe significant differences in the overall average number of HCCs between employer group and individual members, we included both individual and employer group members in the analysis.
- The data included in this report was accumulated across organizations with different corporate structures (e.g., staff model HMOs versus independent practice associations), different membership volume/demographics/geographic location and other pertinent differences. Hence, the information may not be directly comparable to any specific organization. The survey authors did not verify the accuracy or completeness of the data included in the analysis. However, the data is considered fairly representative as a whole, such that reasonable conclusions may be drawn from it.
- In order to make the data more comparable, we also “normalized” the average number of HCCs included in the percentile exhibit for age/gender and geography. For example, all plans in the West had their average numbers of HCCs adjusted by the West geographic factor before being assigned a percentile. ■

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