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Health Watch

"For Professional Recognition of the Health Actuary"

IASB Phase II Insurance Contracts Project: Implications for U.S. Health Insurers

by Rowen B. Bell

In May 2007, the International Accounting Standards Board (IASB) published a Discussion Paper (DP) entitled *Preliminary Views on Insurance Contracts*.[1] The issuance of the DP is an important milestone in the IASB's Phase II project on insurance accounting, the ultimate objective of which is to develop a new International Financial Reporting Standard (IFRS) to replace the current IASB insurance contract accounting guidance in IFRS 4.

At first glance, developments in IFRS might appear to be of limited interest to the U.S. health insurance industry. However, the Financial Accounting Standard Board (FASB) has signaled its interest in bringing U.S. Generally Accepted Accounting Principles (GAAP) into convergence with the ultimate IFRS insurance contract accounting guidance. Consequently, there is a significant likelihood that the accounting concepts found in the IASB DP could be incorporated into U.S. GAAP within the near future.

The purpose of this article is two-fold: to provide U.S. health actuaries with an introduction to some of the key concepts found in the DP; and to provide some initial thoughts on how these concepts might apply to U.S. health insurance products, with an emphasis on medical insurance.

IASB Phase II: What It Is and Why It Matters

The role of IASB is to develop and maintain a set of accounting standards known as IFRS. The IFRS standards have been adopted by more than 100 countries around the world as the required or permitted accounting basis for public company external financial reporting. As such, in the European Union, South Africa and many other countries, IFRS plays an analogous role to that played by U.S. GAAP in the United States.

Discussions on international accounting standards for insurance contracts have been

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SOCIETY OF ACTUARIES

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Chairperson's Corner

by William R. Lane

Next year, I will have been a fellow of the Society of Actuaries for 30 years. The actuarial world has changed in many, many ways in these last three decades and we, as a profession, have had to change with it. Computers have driven much of the change since we can do so many more calculations, comparisons and correlations. Cost increases in the realm of health care have also been a significant driving force.

This new ability to do more has both its benefits and its drawbacks. In a competitive world, soon after it becomes possible to do something new, it also becomes necessary to perform that function just to stay even with our competitors. The huge increases in cost simply intensify the need and make the ability to change more valuable (or the unwillingness to change more expensive).

The Health Section Council has been looking at our educational offerings for some time. We have changed how we manage them and we have worked hard to determine what should be offered. A decade ago, I was involved in a committee that explored what topics should be on the syllabus for health actuaries. It quickly became apparent that the challenge was reducing the list to a small enough number of topics that the exams could be finished before the student retired. The Health Section Council, therefore, wanted to focus on what was critical for health actuaries. The list of what would be "nice to have" was simply enormous.

We have conducted two membership surveys and interviewed a dozen chief health actuaries to find out what continuing education opportunities should be made available. We have discussed the topic as a council and presented our findings to the SOA Board of Governors.

We don't yet have a "final" answer and perhaps we never will. More will be published on the recent survey results later in greater detail. Even so, two broad areas that need more educational offerings were mentioned frequently.

One area is pricing and analysis for health products. As companies get more sophisticated in how they price, the need for actuaries to understand the "state of the art" in pricing and analysis is an ongoing need. Pricing and analysis techniques have become more sophisticated and the need for continuing education is important.

The other area is often called "nontraditional." This includes topics like predictive modeling, disease management and enterprise risk management. I've been working with predictive modeling for over a decade. It has gone from a technique used by some managed care plans to evaluate providers to a sophisticated tool for market evaluation, pricing and underwriting in addition to an expanding list of provider oriented functions. Evaluating disease management programs is a difficult task at best. Even so, the potential savings for health plans that can identify the disease management programs that

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actually work (rather than just go through the motions) is so large that managed care companies cannot afford to wait until the evaluation techniques are standardized and easy.

Another area that the Health Section Council has already applied resources toward research and future educational offerings is evaluating the accuracy of different valuation techniques. A number of non-actuaries believe that computerized statistical models could easily outperform traditional actuarial approaches to valuation. In addition, they believe these techniques would provide more information on the probable variance of the results. We are developing research to either demonstrate that traditional valuation techniques do work as well as any other technique, or to show us newer techniques that will serve our clients better in the future.

Sessions at the SOA meetings, seminars and webcasts take time to develop. Watch for educational offerings in these and other important areas. Some will be at the Spring Meeting, but many more options are coming in the future, including seminars and webcasts.

All of this adds up to a significant challenge to the Health Section. As I have noted before, the council will grow to 12 members next year as a step toward facing that challenge. Please take the time to look at the list of candidates and vote carefully. We want the best. The good news is that the slate of candidates is excellent and diverse.

So what's the bottom line for you? If you're an old-timer like me, perhaps you can reach retirement before you have to "learn new tricks." If not, then perhaps you should look for ways to keep your skills up to date. One of the driving forces behind the Health Section Council concerns was the discovery that a number of companies that typically hire health actuaries were not finding actuaries with the experience and knowledge that they wanted. Generally what these employers wanted is in line with our survey results for what should be offered. This means that your future employment opportunities might be enhanced if you take advantage of some of the educational offerings the council is developing.

Living to 100 Symposium

January 7-9, 2008, Orlando, FL

Mark these dates on your calendar and join us for another thought-provoking experience!

The Society of Actuaries' Committee on Living to 100 Research Symposia invites you to its third, triennial international symposium on high-age mortality and related issues taking place Jan. 7-9, 2008, in Orlando, Fla.

Actuaries, demographers, gerontologists and other professionals from around the world will be among those presenting:

- Mortality projection methods
- Enhanced mortality rate and population projections
- Implications of an aging population for social, financial, health care and retirement systems

World-renowned scientist Dr. Cynthia Kenyon, American Cancer Society professor and director of the Hillblom Center for the Biology of Aging at the University of California, San Francisco, will provide the keynote address.

For more information and registration please visit *http://www.soa.org/meetings-and-events/event-detail/living-100-sym/mtg-living-to-100-symposium-detail.aspx*

Letter from the Editor ... Let the Political Show Begin

by Gail M. Lawrence

As an Iowan, every four years I have the privilege of participating in a great political show as the presidential candidates come to court my vote. I think of myself as a switch-hitter, which means I flip between parties to attend the caucus of the party or candidate that piques my interest at the moment.

I'm especially fond of the latest campaign tactic called the "telephone" town hall meeting. With the touch of a button, one can join a live Q&A with the candidate and even queue up to ask a question. It's convenient and energy efficient!

Because it takes a couple of hours to attend a caucus on a generally frigid and dark January night, the voters tend to be well informed and passionate about their candidate of choice. I like to believe that Iowans are serious about doing a good job to cull the presidential candidates with our first-in-the-nation status.

I have always thought that the greatest challenge of health care reform is not in the definition of a workable system. Rather, it is garnering the political muscle to get meaningful changes implemented. The delivery of health care is around one fifth of our nation's economy and reforms will create many winners AND losers. There is a chorus of vested interests and it will take strong leadership to unify the cacophony of discordant views into one voice.

I thought it would be interesting to look at the Web sites of seven leading presidential candidates (according to an Iowa poll as of June, 2007) for their positions on health care reform. When I have done this previously, I have found most of the dialog tends to be short on workable specifics and long on politically palatable goals. However, as the discussions and ideas on health care reform have matured over the years, I was sometimes pleasantly surprised by what I saw.

Please bear in mind that I am writing this in late June and the candidate's issue statements on their Web sites may have changed as of the publication date.

The Democrats

John Edwards

Guaranteeing affordable quality health care for every American was number two on John Edward's list of issues from his official Web site.

"The Edwards Plan achieves universal coverage by:

- Requiring businesses and other employers to either cover their employees or help finance their health insurance.
- Making insurance affordable by creating new tax credits, expanding Medicaid and SCHIP, reforming insurance laws, and taking innovative steps to contain health care costs.
- Creating regional "Health Care Markets" to let every American share the bargaining power to purchase an affordable, high-quality health plan, increase choices among insurance plans, and cut costs for businesses offering insurance.
- Once these steps have been taken, requiring all American residents to get insurance."

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According to *www.ontheissues.org*, a Web site whose mission is to provide non-partisan information to voters in the presidential election, Edward's voting record on health care issues is as follows:

- Require health insurance for every child. (Aug. 2003)
- Voted NO on $40 billion per year for limited Medicare prescription drug benefit. (June 2003)
- Voted YES on allowing re-importation of Rx drugs from Canada. (July 2002)
- Voted YES on allowing patients to sue HMOs and collect punitive damages. (June 2001)
- Voted NO on funding GOP version of Medicare prescription drug benefit. (April 2001)
- Voted YES on including prescription drugs under Medicare. (June 2000)
- Voted NO on limiting self-employment health deduction. (July 1999)
- Supported letting states make bulk Rx purchases and other innovations. (May 2003)
- Rated 100 percent by APHA, indicating a pro-public health record. (Dec. 2003)

Hillary Clinton

Providing affordable and accessible health care was also number two on Hillary Clinton's list of issues. Bearing the scars of prior political battles on this issue, Clinton explains in a three-minute video the massive political momentum it will take to effect reforms. She wants the citizens of America to create a movement to make health care reform their number one voting issue.

Clinton's Web site does not give the specifics of her ultimate plan other than to say that she is in favor of universal health care coverage that provides adequate insurance benefits and no insurance discrimination such as underwriting. She believes health care financing needs to change with better use of the monies within the system and "by taking money away from people who make out really well now."

As compiled by *OnTheIssues.org*, Clinton's voting record on health care issues is:

- Health care initiatives are her first priority in Senate. (Feb. 2001)
- Voted NO on limiting medical liability lawsuits to $250,000. (May 2006)
- Voted YES on expanding enrollment period for Medicare Part D. (Feb. 2006)
- Voted YES on increasing Medicaid rebate for producing generics. (Nov. 2005)
- Voted YES on negotiating bulk purchases for Medicare prescription drug. (March 2005)
- Voted NO on $40 billion per year for limited Medicare prescription drug benefit. (June 2003)
- Voted YES on allowing re-importation of Rx drugs from Canada. (July 2002)
- Voted YES on allowing patients to sue HMOs and collect punitive damages. (June 2001)
- Voted NO on funding GOP version of Medicare prescription drug benefit. (April 2001)
- Supported investing funds to alleviate the nursing shortage. (April 2001)
- Supports letting states make bulk Rx purchases and other innovations. (May 2003)

- Rated 100 percent by APHA, indicating a pro-public health record. (Dec. 2003)

- End government propaganda on Medicare bill. (March 2004)

Barack Obama

At number three on his list of issues, Obama has a lot to say on health care reform.

"Obama's plan will provide affordable, comprehensive and portable health coverage for all Americans by:

- Making available a new national health program that will allow individuals and small businesses to buy affordable health care similar to that available to federal employees. No one will be turned away or charged more due to illness, and everyone who needs it will receive a subsidy for their premiums.

- Making available a National Health Insurance Exchange to reform the private insurance market. Any American could enroll in participating private plans, which would have to provide comprehensive benefits, issue every applicant a policy and charge fair and stable premiums.

- Ensuring all of the 9 million currently uninsured children have affordable, high-quality health coverage.

- Expanding Medicaid and SCHIP and ensuring they continue to serve their critical safety net function.

- Requiring employers to make a meaningful contribution to the health coverage of their employees."

His Web site also provides a 15-page document containing details of his plan.

From *OnTheIssues.org*, Obama's voting record is:

- Voted YES on expanding enrollment period for Medicare Part D. (Feb. 2006)

- Voted YES on increasing Medicaid rebate for producing generics. (Nov. 2005)

- Voted YES on negotiating bulk purchases for Medicare prescription drug. (March 2005)

The Republicans

Mitt Romney

As of July, Mitt Romney has been campaigning hard in Iowa and he is currently leading in the polls. The "Romney agenda" puts health care at number nine on his issues watch and he shares only a one-sentence statement and two newspaper quotes on the issue. "The health of our nation can be improved by extending health insurance to all Americans, not through a government program or new taxes, but through market reforms."

"We can't have as a nation 40 million people —or, in my state, half a million—saying, 'I don't have insurance, and if I get sick, I want someone else to pay'... . It's a conservative idea," says Romney, "insisting that individuals have responsibility for their own health care. I think it appeals to people on both sides of the aisle: insurance for everyone without a tax increase." (*USA Today*, July 5, 2005)

OnTheIssues.org did not have a voting record for Mitt Romney, whose political experience includes a term as governor of Massachusetts. His Web site states, "In 2006, Governor Romney proposed and signed into law a private, market-based reform that ensures every Massachusetts citizen will have health insurance, without a government takeover and without raising taxes." It should be noted that the Massachusetts universal health care plan that includes mandates for individuals and employers, minimum coverage requirements, subsidized insurance and government-enforced fines for noncompliance.

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Fred Thompson

As I write this column, Fred Thompson is not an official candidate and does not have an official presidential campaign Web site.

The following is a summary of his voting record on health care issues as compiled by *OnTheIssues.org*:

- Voted NO on allowing re-importation of Rx drugs from Canada. (July 2002)
- Voted NO on allowing patients to sue HMOs and collect punitive damages. (June 2001)
- Voted YES on funding GOP version of Medicare prescription drug benefit. (April 2001)
- Voted NO on including prescription drugs under Medicare. (June 2000)
- Voted YES on limiting self-employment health deduction. (July 1999)
- Voted NO on increasing tobacco restrictions. (June 1998)
- Voted YES on Medicare means-testing. (June 1997)
- Voted NO on medical savings accounts. (April 1996)

Rudy Giuliani

The list of "on the issues" from Rudy Giuliani's Web site does not have any statements on health care financing reform. However, the Web site does have a video of his June 12 Bedford, New Hampshire speech when he laid out his 12 commitments to the American people. His seventh promise was, "I will give Americans more control over, and access to, health care with affordable and portable free-market solutions." He went on to advocate an individual-based, privately controlled free market solution where the government would provide tax incentives for individuals to purchase health insurance coverage and to fund health-savings accounts for non-covered expenses. Vouchers would be provided by the government to help the poor purchase private coverage. While mayor of New York City, Giuliani was a leader in getting health insurance to children through the innovative HealthStat initiative, which uses computer technology to coordinate a citywide effort to enroll children in existing health insurance programs.

John McCain

John McCain has chosen not to focus on Iowa, so he is not one of the top 3 republicans in the latest poll of Iowans. But he is a leading candidate and has an official Web site, which features updates on the "straight talk express." However, health care did not make the cut on the list of nine items in his "issues focus."

OnTheIssues.org summarizes his voting record as follows:

- Allow appealing HMO decisions externally and in court. (July 1999)
- Voted NO on expanding enrollment period for Medicare Part D. (Feb. 2006)
- Voted YES on increasing Medicaid rebate for producing generics. (Nov. 2005)
- Voted YES on negotiating bulk purchases for Medicare prescription drug. (March 2005)
- Voted NO on $40 billion per year for limited Medicare prescription drug benefit. (June 2003)
- Voted YES on allowing re-importation of Rx drugs from Canada. (July 2002)
- Voted YES on allowing patients to sue HMOs and collect punitive damages. (June 2001)

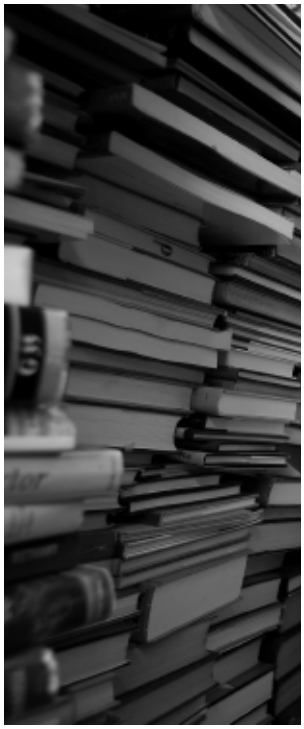
- Voted YES on funding GOP version of Medicare prescription drug benefit. (April 2001)
- Voted NO on including prescription drugs under Medicare. (June 2000)
- Voted YES on limiting self-employment health deduction. (July 1999)
- Voted YES on increasing tobacco restrictions. (June 1998)
- Voted NO on Medicare means-testing. (June 1997)
- Voted NO on medical savings accounts. (April 1996)
- Supported tax credits for those without employee health insurance. (May 2002)
- Supported tax deduction for long-term care insurance. (May 2002)
- Supported telemedicine for underserved areas. (May 2002)
- Supported $350 billion for prescriptions for poor seniors. (May 2002)
- Rated 25 percent by APHA, indicating an anti-public health voting record. (Dec. 2003)

Parting Words

In writing this column, I have tried to remain objective by using each candidate's own words (or lack thereof) from their Web sites to speak for them on the content and positioning of their views on health care reform. Second, I felt that a focus on the candidate's voting record provides some insight into the translation of words into actions.

I have not yet decided which caucus I will be attending in January, much less which party's candidate I will support. I do feel a responsibility to become informed on the positions of our future leader that will affect my professional and personal life. And so, I am beginning this learning exercise by reading, listening and perhaps even shaking a couple of hands.

As actuaries, we bring a unique perspective to the debate on health care reform. With first hand knowledge of the foibles plaguing the system, we can help shape workable solutions. Next time you're invited to participate in a town hall meeting, whether in person or on the phone, I recommend you attend and offer a comment or ask a question. I think you'll be glad you did.



Got a Research Idea?

The SOA Health Section Council is seeking new research ideas or proposals on a health-related topic for potential funding. The Council has a dedicated annual budget to fund research projects that benefit health actuaries. You can submit a proposal or idea at any time. Proposals are chosen among those submitted for funding based on their relevance to health actuaries and available budget. Examples of prior studies funded include the newly released report on the commercially available Risk Adjusters and the Impact of Medicare Part D on Drug Costs study. Here's an opportunity for you to advance the profession and potentially uncover new knowledge!!

For more details on how to submit a proposal and the selection process, please contact Steven Siegel, SOA research actuary, at *ssiegel@soa.org*.

Navigating New Horizons ...

An Interview with Guy King

"What's an actuary?"

With that question, Roland "Guy" King began an actuarial career that has spanned four decades. After earning his undergraduate degree in mathematics and engineering from the Naval Academy and serving time in the Navy, King attended the University of Virginia and earned a master's in mathematics. As he was finishing up his degree, Gordon Trapnell, the senior Medicare actuary at the Social Security Administration (SSA) and also a UVA grad, had called the head of the Math Department at his alma mater to recruit actuarial talent to work with Medicare, which was then part of the SSA. After obtaining King's resumé, Trapnell called him and told him that his navigational experience in the Navy led Trapnell to believe that King would make "an ideal actuary" to which King responded, "What's an actuary?" King interviewed for the SSA position, got the job and started a career working with Medicare that would last 22 years.

A mere six years after joining the SSA, King had risen to the position of chief actuary of the Health Care Financing Administration (HCFA), now the Centers for Medicare and Medicaid Services (CMS). He spent 16 years as chief actuary, leaving in 1994.

King had much to say about his time at HCFA, describing it as very "professionally satisfying." He said in his early years at SSA, he learned a great deal about what it meant to be a professional actuary from Gordon Trapnell and David McKusick. The work was interesting and challenging, and he got to work with a great group of actuaries. On the other hand, the political aspect of the job could get rather frustrating. His responsibilities as chief actuary included certifying the Medicare Trustees Report each year, and he "got in trouble" a number of years because he did not give a positive certification. The job was certainly not without its challenges. One particularly grueling project was the work that his office did on health care reform estimates

Roland "Guy" King

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for the Clinton administration in 1993-94. He described the 70-80 hour work weeks as follows: "We would go to the White House in the evening and meet with Ira Magaziner, senior advisor to the President for Policy Development. We would brief him on the analysis that we had done that day and get our new assignment from him. We'd get home around midnight for a few hours of sleep and then get up early and do it all over again the next day. This went on for months." There was a lot of back and forth because the White House thought HCFA's cost estimates were too high. However, two Academy groups also reviewed HCFA's work, and they thought the estimates were reasonable or even on the low side. King was also experiencing a little unexpected fame at this time. With all of the controversy over health care reform, stories about the White House's disagreement with the HCFA estimates were published in *The New York Times*

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and *Wall Street Journal*. He would have rather remained a little less well known.

Another challenging project was developing cost estimates in 1988 for the prescription drug benefit introduced by the Medicare Catastrophic Coverage Act. These estimates were being done for the Congressional Budget Office (CBO). HCFA estimates were 900 percent higher than what the CBO analysts had come up with. In fact, HCFA was projecting that the trust fund would go bankrupt in only 18 months. As King recalls, "We expected our estimates to be higher than the CBO, but maybe only 20-30 percent. Coming up with numbers nine times higher than the CBO was rather amazing, but we stuck by our results." As it happened, the CBO eventually raised their estimates to the HCFA levels and actually claimed that the HCFA estimates appeared to be 10 percent too low. Says King, "We saw the irony in that." Partly as a result of the revised CBO estimates, Congress repealed the Act before it was put into place.

... Another challenging project was developing cost estimates in 1988 for the prescription drug benefit introduced by the Medicare Catastrophic Coverage Act.

All of the hard work and long hours were not without their rewards. King received Presidential Meritorious Executive Rank awards from President Reagan for his work on the prescription drug benefit and President Clinton for his work on health care reform.

When asked about the challenges that are currently facing CMS and Medicare, King responded that in many ways CMS is facing issues similar to what he faced, but he also feels that the role of chief actuary is probably even more challenging now than it was in the 80s and early 90s. The complexity of Medicare has increased with the addition of Medicare Advantage plans and Part D benefits. Plus, the political arena has only gotten more charged when it comes to health care reform. In addition, there's much more oversight of actuaries now, which makes tasks more time consuming.

Since leaving HCFA, King still manages to see a number of his former coworkers occasionally, but he misses the people and the camaraderie of the office. On the plus side, he's working as an independent consultant now, and, "I don't work as hard now as I did then." Most of his current work is traditional health actuarial work, but he still occasionally gets involved in Medicare related projects.

King noted that the biggest disappointment of his career is that despite all of the work that his office did and that CMS has done since then, the leaders of this country have still not done anything to substantively solve the cost problems of our social insurance programs. King did his first work on projections of the Medicare Hospital Insurance fund in 1976 (before that he worked on SMI). At the time, the fund was projected to be bankrupt before 2000. The current CBO projections show that by 2030 the cost of Medicare, Medicaid and Social Security will reach levels close to the current federal budget—as the boomers retire—with the Hospital Insurance fund running out long before that. King says that it's frustrating to not see any action from our political leaders when the costs of these programs are driven primarily by demographics and can be predicted with a fairly high level of probability. But because this is such a highly charged issue, it's hard to say when anything will change. King is reminded of the old adage: "Whatever is right to do substantially is wrong to do politically and vice versa."

When asked what he would have done if he hadn't become an actuary, King responded that he might have become a veterinarian or an oceanographer. He loves animals, and his family has had a number of pets over the years—Shetland sheepdogs, parrots, gerbils, turtles and

frogs. King's favorite hobby is sailing, although he mentioned that his son has recently taken over the captaining of their boat. In the last five years or so, he's also taken up golf, since he's no longer working full time and has more time to devote to the sport.

It's an understatement to say that King has been very committed to volunteering within the actuarial profession. He has served on the Health Practice Council and the Social Insurance Committee and participated in ad hoc committees for the SOA and Academy that are too numerous to list. He received the Robert J. Myers Public Service Award in 1996. He also spent six years on the Actuarial Standards Board (two years as the vice chairperson) and has spent two years on the Academy's Board of Directors.

His "most interesting and most intense" volunteer experience was serving on the CRUSAP Task Force. CRUSAP stands for Critical Review of the U.S. Actuarial Profession. The task force was set up in 2005 to look at the challenges and opportunities facing the actuarial profession. King was charged with reviewing the organization of the profession and making recommendations for change. Initially, he had a "If it's not broke, don't fix it" view. After quite a bit of research into the history of the profession, which he found very interesting, and discussions with current and past presidents of actuarial organizations, he came to the conclusion that the profession could benefit from fewer organizations. King mentioned that past attempts at consolidating the profession became emotional issues as people resisted the change, but invariably something good always came out of the attempt. The task force's final report was issued in December 2006 and can be viewed at *www.crusap.net.*

... When asked why he feels it is so important to volunteer, King replied that the actuarial profession is "one of the most honest professions that I've ever been associated with."

When asked why he feels it is so important to volunteer, King replied that the actuarial profession is "one of the most honest professions that I've ever been associated with. However this can also be our Achilles' heel, as we need to be vigilant in maintaining that professional integrity." Because he views this integrity as such a great strength of the profession, it's been important to him to help maintain it. And the profession certainly values and appreciates that help.

A Comparative Analysis of Claims-Based Risk Assessment Tools (excerpt from Society of Actuaries' Research Project)

by Ross Winkelman and Syed Mehmud

There have been a number of published papers on predictive modeling and risk adjustment for health care, and there are a host of conferences each year dedicated to predictive modeling. Why are so many health actuaries interested in this subject area, and why is it important (or, is it important) to the market and the profession?

Actuaries are likely drawn to this work and these models in part because of the highly technical underpinnings ("you mean, some of those statistics books I read are actually useful?"). Risk adjustment tools have become critical to the marketplace and this importance has also thrust a number of talented individuals into predictive modeling. The models have allowed the marketplace to evolve to a point where, within some market segments (Medicare and some state Medicaid programs are important examples), health plans' financial results are based on the ability to negotiate contracts with providers and to implement effective medical management programs instead of on the ability to select the best risks. (However, risk selection is also an area where predictive models have found a home and health plans need to make sure they are not left behind in this "arms race.") Further, risk adjustment tools are critical to measuring the impact of disease and quality management programs, and risk adjustment's role in these efforts is likely to grow over time.

When we first undertook the daunting assignment of completing the risk adjuster research project for the Society of Actuaries (SOA), we naively thought we were developing a *Consumer Reports*-type report where there would be winners and losers. As we moved deeper into the project, we realized that each and every tool has inherent advantages and disadvantages under a given set of circumstances. Therefore, we expect the report to be a reference tool, and that the decision of which tool to use will vary considerably from one organization to another and even from one situation to another.

The remainder of this article is an excerpt from the recently published SOA research project on the commercial available risk adjustment models, titled "A Comparative Analysis of Claims-Based Tools for Health Risk Assessment." This has been reprinted with the permission of the SOA. The full report is available on the SOA Web site at: *http://soa.org/research/research-health.aspx*

Introduction

To provide a framework for this study, risk adjustment is defined as the process of adjusting health plan payments, health care provider payments and individual or group premiums to reflect the health status of plan members. Risk adjustment is commonly described as a two-step

process. The first step involves risk assessment, which refers to the method used to assess the relative risk of each person in a group. The relative risk reflects the predicted overall medical claim dollars for each person relative to the claim dollars for an average risk person. The second step in the risk adjustment process is payment or rate adjustment, which refers to the method used to adjust payments or premium rates in order to reflect differences in risk, as measured by the risk assessment step. It is common to refer to a particular risk assessment method as a risk adjuster.[1]

Health claims–based risk assessment and adjustment tools are used in a number of applications, including the following:

- Renewal rating and underwriting of individuals and employer groups.
- Provider capitation and risk-based reimbursement.
- Health plan payment, especially in government programs such as Medicare and Medicaid.
- Care management, for identifying and categorizing high-cost and/or highly impactable patients.
- Assisting government agencies and consumers in accurately comparing competing insurance products.

The predictive models included in this report are also used for purposes other than risk adjustment including trend analysis, rating and medical management.

Risk adjustment is a powerful and much needed tool in the health insurance marketplace. Risk adjusters allow health insurance programs to measure the morbidity of the members within different groups and pay participating health plans fairly. In turn, health plans can better protect themselves against adverse selection and are arguably more likely to remain in the marketplace. Higher participation increases competition and choice.

Risk adjusters also provide a useful tool for health plan underwriting and rating. They allow health plans to predict more accurately future costs for the members and groups they currently insure.

Finally, risk adjusters provide a ready, uniform tool for grouping people within clinically meaningful categories. This categorization allows for better trend measurement, care management and outcomes measurement. The risk adjuster structure, like benchmarks for service category utilization, allows different departments within an insurance company to communicate with each other. In particular, medical management and actuarial and finance professionals can measure the impacts of their care management programs.

This study focuses on evaluating the predictive accuracy of health-based risk assessment models. While improved accuracy is the primary reason for implementing any health-based risk adjustment model, other criteria should be considered when selecting a model. These include the following (in no particular order):

1. Ease of use of the software.
2. Specificity of the model to the population to which it is being applied.
3. Cost of the software.
4. Transparency of the mechanics and results of the model.
5. Access to data of sufficient quality.
6. Underlying logic or perspective of a model that makes it best for a specific application.

(continued on page 16)

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7. Whether the model provides both useful clinical as well as financial information.

8. Whether the model will be used mostly for payment to providers and plans or for underwriting, rating and/or case management.

9. Reliability of the model across settings, over time or with imperfect data (models that are calibrated and tested on a single data set and population may or may not perform well on different data sets / populations).

10. Whether the model is currently in use in the market or organization.

11. Susceptibility of the model to gaming or up-coding.

The study included testing of models using lagged data. Other real world conditions faced by health plans or other stakeholders using risk adjusters include rating restrictions from small group regulation and the impact of employee and group turnover. The researchers involved in this study also completed a separate study on the effects of real world conditions on predictive performance, entitled the "Optimal Renewal Guidelines" study.[2] This study was focused on small group renewal rating, but the results are helpful in considering real world conditions encountered in other situations. Some results from this study are included and discussed in Section VII of this report, "Limitations and Factors Impacting Risk Adjuster Performance."

Executive Summary

This Society of Actuaries research project builds on the work done for the 1996 and 2002 claims-based health risk assessment research projects. The purpose of this study is to evaluate the predictive accuracy of the commercially available claims-based risk assessment tools under different sets of conditions and with different sets of available information. It also provides some information on the tools' ease of use and other qualitative characteristics. Given the number of possible uses of risk adjusters, and the many different measures available to evaluate risk adjusters, this report does not attempt to identify which model is the best. It is intended primarily to provide useful quantitative information to assist individuals in selecting the appropriate risk adjustment model for their given circumstances.

Table 1. R-Squared and MAPE for Prospective Nonlagged - Offered vs. Optimized (Recalibrated, with Prior Cost, 250K Claim Truncation)

			Offered Models		Optimized Models w/ Prior Costs	
Risk Adjuster Tool	**Developer**	**Inputs**	**R-2**	**MAPE %**	**R-2**	**MAPE %**
ACG	Johns Hopkins	Diag	19.2%	89.9%	23.0%	86.2%
CDPS	Kronick / UCSD	Diag	14.9%	95.3%	24.6%	85.6%
Clinical Risk Groups	3M	Diag	17.5%	90.9%	20.5%	86.6%
DxCG DCG	DxCG	Diag	20.6%	87.5%	26.5%	82.5%
DxCG RxGroups	DxCG	Rx	20.4%	85.3%	27.1%	80.7%
Ingenix PRG	Ingenix	Rx	20.5%	85.8%	27.4%	80.9%
MedicaidRx	Gilmer / UCSD	Rx	15.8%	89.6%	26.3%	81.9%
Impact Pro	Ingenix	Med+Rx+Use	24.4%	81.8%	27.2%	80.6%
Ingenix ERG	Ingenix	Med+Rx	19.7%	86.4%	26.5%	81.2%
ACG - w/ Prior Cost	Johns Hopkins	Diag+$Rx	22.4%	85.6%	25.4%	82.1%
DxCG UW Model	DxCG	Diag+$Total	27.4%	80.4%	29.1%	78.3%
Service Vendor		**Inputs**	**R-2**	**MAPE**	**R-2**	**MAPE**
MEDai	MEDai	All	N/A	N/A	32.1%	75.2%

* The offered MEDai model was not tested in the study.

Table 2. Predictive Radios by Medical Condition in 2003
(Offered Nonlagged Prospective, 250K Truncation)

Risk Adjuster Tool	Inputs	Asthma	Breast Cancer	Diabetes	Heart Disease	HIV	Mental Illness
ACG	Diag	88.4%	100.0%	96.7%	103.1%	99.6%	92.3%
CDPS	Diag	95.0%	73.4%	84.8%	76.4%	67.3%	92.5%
Clinical Risk Groups	Diag	85.1%	94.7%	99.7%	99.5%	91.5%	89.0%
DxCG DCG	Diag	93.3%	98.3%	98.6%	103.2%	86.4%	95.9%
DxCG RxGroups	Rx	95.5%	76.9%	97.9%	89.4%	89.2%	88.6%
Ingenix PRG	Rx	94.9%	93.9%	98.2%	89.7%	79.6%	87.1%
MedicaidRx	Rx	90.1%	94.9%	92.7%	79.1%	90.8%	94.0%
Impact Pro	Med+Rx+Use	97.6%	115.4%	96.4%	99.8%	95.1%	98.0%
Ingenix ERG	Med+Rx	90.0%	99.2%	94.8%	92.9%	80.0%	91.9%
ACG - w/ Prior Cost	Diag+$Rx	92.5%	109.0%	95.8%	97.5%	103.6%	91.0%
DxCG UW Model	Diag+$Total	93.2%	84.9%	91.1%	90.7%	103.6%	94.6%
Service Vendor	**Inputs**	**Asthma**	**Breast Cancer**	**Diabetes**	**Heart Disease**	**HIV**	**Mental Illness**
MEDai*	All	N/A	N/A	N/A	N/A	N/A	N/A

* The offered MEDai model was not tested in the study.

The substantial increase in the number of models available in the marketplace is primarily due to an increase in the number of models being offered by each vendor, but new vendors are also present in the marketplace. Overall, the models have become more tailored to the situation for which they are being used and more sophisticated in general.

Throughout this report, the risk adjustment models are grouped together based on the similarities of their input data sources. This categorization allows for appropriate comparisons since the input data that a risk adjuster uses is a defining characteristic and often the first consideration a purchaser makes in narrowing down the choices for a particular risk adjustment application. The abbreviations shown in the Inputs column in the tables are defined at the beginning of the Results section of this report.

Table 1, repeated in the results section of this report, summarizes the numeric R-squared and MAPE results of the study for the prospective (predicting future 12-month cost), nonlagged (without data or prediction lag) models.

In Table 1, and throughout the report, "offered" refers to models as they were provided by the software vendors. "Optimized" means that the models were calibrated to the population and data used in the study, and prior costs were added as an independent variable. The term optimized is used in the context of the optimization methods that could be reasonably employed by most end users (including the researchers), not the methods that vendors could use to optimize their own models with the addition of a single (or several) prior cost input variable(s). It is also important to note that the results in this report (including results for models where prior costs were added) are based on member level analysis, not analysis at the employer group level. The parameters and results of optimal methods will change as the group size, type of population, data, and modeling conditions change.

As shown in Table 1, the optimized models

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perform very well (in the prior study, the greatest prospective R-squared was 21.8 percent). The MEDai methodology included in the study produces the highest R-squared and lowest MAPE among all models. The DCG model produced the highest R-squared and lowest MAPE of the diagnosis input data models. The RxGroups and PRG pharmacy (Pharmacy NDC-based) models generally had good measures, especially considering that they only use pharmacy data. MedicaidRx performs surprisingly well once it is calibrated for the study's commercial population and a prior cost variable is added, given that it was developed for a Medicaid population. The DxCG Underwriting Model performed well in the underwriting model category (those that include prior costs as inputs in offered model).

Predictive ratios included in the report show the ratio of predictions to actual costs by disease category and cost percentile. Table 2 on page 25 shows the predictive ratio results by medical condition.

Predictive ratios closer to 100 percent indicate higher accuracy. The results vary considerably by medical condition category. The Impact Pro model has the best predictive ratios for three of the medical condition categories. The ACG system has the best predictive ratio for two of the medical conditions and Clinical Risk Groups has the best ratio for Diabetes. The pharmacy input only models have less accurate predictive ratios relative to the other models for Heart Disease.

The predictive ratio results by disease category highlight the importance of choosing a model that uses grouping criteria consistent with the intended application, especially where disease specific analysis is being employed.

Table 3 below shows the predictive ratio results by cost percentile.

The predictive ratio results by percentile show the limitations in risk adjuster predicted costs for the highest- and lowest-cost individuals. In general, results change significantly as cost percentile ranges change, and ranked results are different than in prior tables although MEDai had the best predictive ratios in multiple categories. Of the diagnosis input models, Clinical Risk Groups performed well for all but the middle two cost percentile categories.

Table 3
Prospective Optimized (Recalibrated, with Prior Cost), Nonlagged Preedictive Ratios by Cost Percentile Groupings (Cost Groupings Defined for 2004)

	Percentile Ranges							
Risk Adjuster Tool	**99-100**	**96-99**	**90-96**	**80-90**	**60-80**	**40-60**	**20-40**	**0-20**
ACG	27.1%	46.7%	69.6%	99.1%	146.5%	249.9%	544.2%	8433.1%
CDPS	24.2%	43.8%	67.8%	98.6%	150.4%	256.7%	546.1%	8537.4%
Clinical Risk Groups	28.4%	49.2%	73.0%	103.5%	150.4%	238.8%	488.7%	6808.8%
DxCG DCG	25.2%	45.6%	70.4%	101.1%	149.7%	248.5%	528.7%	7780.7%
DxCG RxGroups	24.9%	48.0%	75.0%	105.4%	151.3%	237.3%	482.6%	7177.5%
Ingenix PRG	25.0%	48.0%	74.5%	104.4%	150.6%	238.0%	489.1%	7426.9%
MedicaidRx	24.2%	46.4%	73.4%	106.2%	155.8%	243.8%	478.5%	6773.7%
Impact Pro	29.7%	50.6%	74.9%	103.6%	149.5%	235.0%	470.1%	6587.2%
Ingenix ERG	24.3%	46.1%	73.6%	107.4%	156.4%	245.1%	482.0%	6226.3%
ACG - w/ Prior Cost	27.2%	51.7%	76.5%	102.1%	141.7%	230.3%	510.3%	8146.4%
DxCG UW Model	26.8%	50.9%	77.4%	107.6%	150.4%	229.0%	452.4%	6427.8%
	Percentile Ranges							
Service Vendor	**99-100**	**96-99**	**90-96**	**80-90**	**60-80**	**40-60**	**20-40**	**0-20**
MEDai	29.5%	52.5%	78.0%	106.5%	145.4%	216.2%	411.9%	5592.5%

The results presented in the Executive Summary represent a small subset of the full study results. Results under a large number of other conditions and scenarios are presented throughout the Results section of the full report and in Appendix A.

For all but one product, the researchers used the models and created the predictions in their offices. During the period of this study, MEDai did not have a product that could be tested in the researchers' offices. Therefore, MEDai was provided the calibration data and the input information for the testing phase. The other models may (or may not) have performed much better if the representatives from those companies had been given the opportunity to tailor and calibrate their models to the population and data used in the study. In this report, MEDai is characterized as a service vendor as opposed to a software vendor and is illustrated separately, in fairness to the other vendors. MEDai provides models other than the one included in this study. Additional MEDai models (offered, concurrent, without prior costs, etc.) were not included in the study because of the logistics necessary to ensure a level playing field.

The 2002 SOA risk adjuster study focused primarily on payment adjustment, although underwriting applications were discussed. This new study addresses the underwriting applications of risk adjusters in more depth. In particular, the effects of adding prior cost as an additional independent variable as well as incorporating data and prediction lag are quantified and discussed. The inclusion of a prior cost independent variable increases the accuracy of the models significantly and dampens differences in predictive accuracy between the models. Modeling data and prediction lag causes predictive measures to worsen overall, although less so for the prescription drug models that rely upon NDCs (national drug codes).

There are many important considerations in using a risk adjuster in a business situation where small differences in the tool and implementation method can have a substantial impact on the stakeholders in the health insurance marketplace. Readers should use the results in the tables in the Executive Summary carefully and are encouraged to review the full report for a complete understanding of how the different models performed under various conditions. Also, while the number of models has increased to address their many uses, it is important to consider what adjustment or customization is worthwhile in a particular situation.

The study was structured so that the playing field would be as level as possible. Vendors were given the opportunity to review and comment on the results of their particular products and to review the report prior to publication. Finally, the participating vendors were also given the opportunity to post their comments about the study methodology and report on the SOA Web site, *http://soa.org/research/health/hlth-vendor-comments.aspx*.

Where appropriate, the study and this report have followed the structure of the 2002 study for consistency. The major differences in the methodology for this study were the addition of the lagged model testing, the addition of aggregate prior costs as an independent variable and different methods for recalibrating the models.

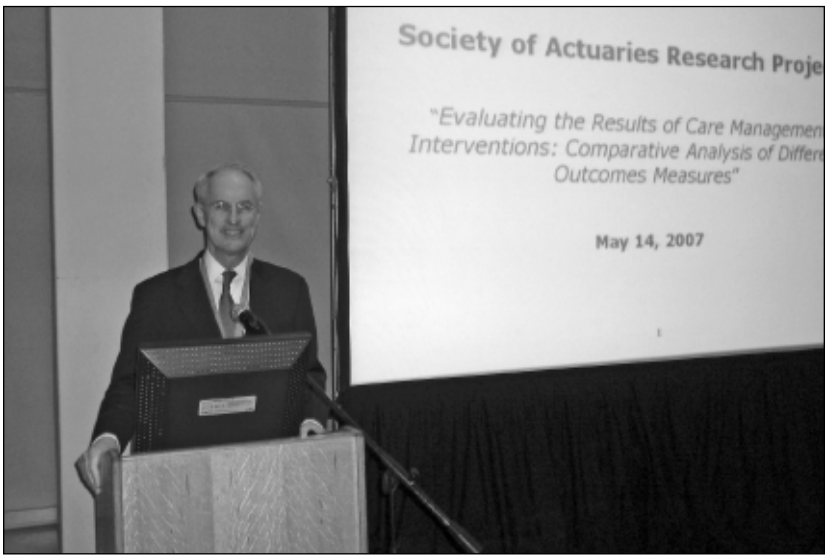
Footnotes

[1] R. B. Cumming, D. Knutson, B. A. Cameron, and B. Derrick, "A Comparative Analysis of Claims Based Methods of Health Risk Assessment for Commercial Populations." A research study sponsored by the Society of Actuaries. May 24, 2002. This subsection is substantially the same as the referenced report; the current report provides additional detail and updates the definition of risk adjustment.

[2] Conclusions and excerpts from this study have been published. Please feel free to contact the researchers of this study for copies of the excerpts or for more information.

International Actuarial Association Health Section Colloquium—Cape Town 2007

by Ian Duncan



Ian Duncan speaks to the International Actuarial Association Health Care Conference in Cape Town about the SOA research project on care management outcomes.

I have written in the past questioning the need for an International Actuarial Association. I remain skeptical in principle about any form of international rule-setting body with authority to impose its standards on U.S. actuaries. But I have to say that, after attending the International Health Section Colloquium in Cape Town, I think that there is some good that such a section can do for the profession.

The section's colloquium, which was held recently in Cape Town, South Africa, was a model of organization. Howard Bolnick, known to many of us as a former SOA president, is president of the International Actuarial Association Health Section. Emile Stipp, a South African actuary was chairman of the organizing committee. Both deserve great credit for their organizational work. The teaching sessions were generally of higher quality than those we have at SOA meetings, possibly because the selection of speakers was competitive and speakers were allowed a full 45 minutes to develop a thesis (whereas SOA sessions often include three or four separate presenters and time for questions in the allotted 90 minutes).

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And there were enjoyable social events. The colloquium drew about 250 participants from numerous countries. The U.S. attendance was small, due no doubt to the cost and flying time to get to Cape Town. In my case, it took two days; but then, being a travel junkie, I flew through Dubai in the Persian Gulf. There were two memorable keynote addresses: Professor Tim Noakes (a physician), who is head of the sports medicine institute at the University of Cape Town, spoke about the physiology of exercise, why the human body is made the way it is and some of the issues we face as society changes. Adrian Gore, founder and CEO of the largest health insurer in South Africa (Discovery Health, with 2 million members) discussed his company's vitality program, a sophisticated program of incentives directed at encouraging health plan members to be aware of, and take more responsibility for, their health. Memo to the SOA: we need to recruit both of these gentlemen to speak at an SOA meeting, soon. South Africa has a different regulatory environment than the United States but there are probably more similarities with the United States than differences, and there may well be things we can learn from South African practitioners like these in the areas of wellness and consumer motivation.

I addressed the conference about some of the research that the Health Section has supported on care and disease management, which appeared to resonate with the international audience. However, the area where there appears to be the greatest common interest is risk adjustment. I attended three of the risk adjustment sessions, one by Dr. Kathryn Antioch, an academic from Melbourne Australia, who spoke about some of the work being done in using DCGs, DRGs and other models in Australia for hospital reimbursement. Professor Van Veen of Erasmus University in Rotterdam described some of the work being done in Holland and other European countries using risk adjustment techniques. Holland is at

the forefront of a movement that recognizes the need to ensure that insurers receive appropriate funding for members with conditions in an insurance system and the role that risk-adjustment can play in this policy goal. The same topic was continued on the second day of the conference by Heather McLeod, an actuary and professor at the University of Cape Town, who discussed South Africa's Risk Equalization Fund, an account into which all employers and health insurers must either pay (or from which they receive subsidies) in relation to the relative, condition-based risk of the members enrolled in the plan. This is an interesting thread of research that many different countries appear to be following, and of which we in the United States need to be aware. In the event that the employer-based system is replaced with an individual system, there will need to be a way to ensure that members with condition-related resource needs continue to receive the implicit subsidies that they currently receive in the employer system.

The risk adjustment component was one of the conference strengths. The presence of practitioners (both actuaries and non-actuaries) from different countries allowed for interchange of methods and experiences. Needs are more similar than they are different—different countries are searching to solve the same problem of providing adequate funding for those with health needs. Unfortunately the United States was under-represented, so it was possible to think that our issues are not similar to those of the rest of the world, or that we have nothing to learn (or demonstrate) to other countries. One place to encourage more international interchange is in the Annual Predictive Modeling and Risk Adjustment Conference, and we should make sure that there is an international component in future conferences.

Given the location of the conference in Africa, there was obviously a significant focus on covering those who don't have access to health care. Covering those without insurance is a concern to us in the United States, but the scale of the problem in the developing countries of Africa is enormous. Unlike the United States, where many of the uninsured can afford to purchase insurance but do not, in African countries those without access to healthcare also lack basics of life. Rodney Lester, an Actuary at the World Bank in Washington D.C. spoke about insurance programs that the bank is developing in countries in Africa. A couple of actuaries from Canada have begun to work with the Bank on these issues, but this is an area of great need and opportunity.

I attended the conference because it was held in Cape Town, the city in which I began my actuarial career in 1971. I remembered Cape Town 36 years ago as a city with spectacular scenery, friendly people and lots of good wine. It hasn't changed much, just gotten bigger, with the addition of a great new international conference center. The major social event of the conference was an outing to Groot Constantia, a seventeenth century wine estate near Cape Town. Memo to the SOA: we should have more winery excursions as part of our meetings—they are great for encouraging mingling!

All in all, it was a good conference, and I look forward to the next. Perhaps if a venue closer to the United States is chosen, more U.S. actuaries can be persuaded to attend. They will find it worthwhile.

Melissa Favreault and Cori Uccello enjoy some time at the Colloquium's wineland excursion.

Highlights from the 2007 SOA Health Spring Meeting

Sleeping in Seattle?

by Gregory G. Fann

The pigs in Seattle were a big hit. Also shown (from left to right) Greg Fann (author), Brian Weible and Greg Warren.

The 2007 Society of Actuaries (SOA) Health Spring Meeting was held June 13-15 at the Sheraton Seattle in downtown Seattle, Wash. In the birthplace of over-priced java, the hotel was buzzing with over caffeinated health actuaries, many still catching up on sleep from the onslaught of Medicare bids in the previous months.

World famous Pike Place market was just a few blocks away where tourists and customers can watch the fishmongers "throw the fish" in celebration of each new sale. Conference attendees were also able to walk to the original Starbucks coffee shop and to the cultural center, Pioneer Square, which sits above Underground Seattle, a popular historic walking tour. (Leave the kids at home for this one.) It was difficult to leave the hotel without bumping into the many decorated brass pigs scattered around the city. Local businesses sponsored the "Pigs on Parade" event, celebrating Pike Place market's centennial and raising money for the Market Foundation, while offering additional color to an already cultural city.

The evening before the conference, I hit the rooftop fitness center which had a 270 degree, panoramic view of the snow capped mountains surrounding the city. There I bumped into a Microsoft consultant who was in town on unrelated business and peculiarly excited to be sharing a hotel with a large group of actuaries. I also met Nancy Ancowitz on the treadmill, a professor and business coach from New York City, who was attending the meeting and delivering several presentations on self-promotion for introverts. During our conversation, she let me know that her message is that a key to an introvert's success is not trying to conform to an extroverted personality.

The meeting was kicked off Wednesday morning by Ed Robbins, SOA president, with a discussion of the SOA's current major initiatives. Three ongoing strategic goals were discussed. First, Enterprise Risk Management continues to be a growing area of interest and employment for actuaries. A Chartered Enterprise Risk Analyst (CERA) designation was launched in the summer. The SOA will also be sponsoring a marketing program to communicate the value of the CERA designation to actuarial employers. Second, the Basic Education Redesign is now well under way. The primary goals of the redesign are to align education with practice relevance, prepare candidates for employment and reduce travel time without compromising the value of actuarial designations. Third, the efforts to market the actuarial brand continue. These efforts are shifting in 2007 toward external focus, with targeted

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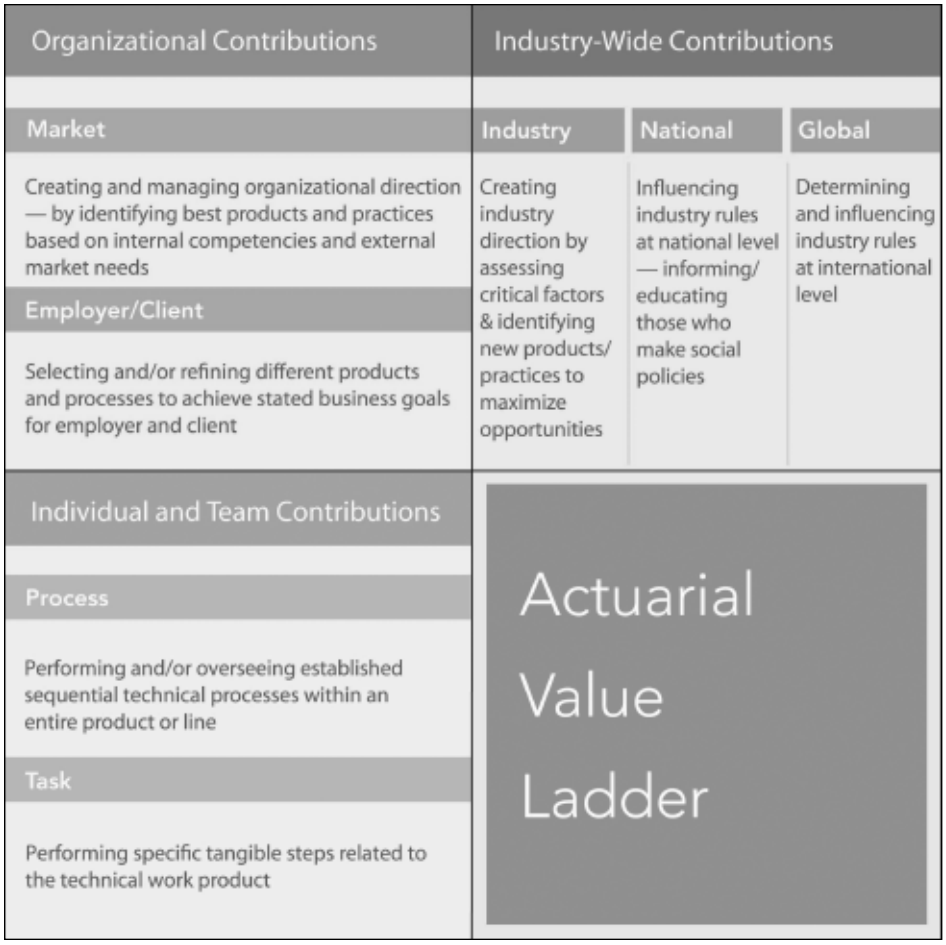
Networking at the Spring Meeting.

news placements and outreach to influential consultants and employers. The SOA sections are expected to assume a greater role in this endeavor.

Robbins also introduced a new professional development tool designed to assist actuaries in organizing their skill development and in communicating their skill sets and the unique value that they bring to employers. The tool was developed based upon SOA commissioned research that provided insight into the value of actuarial skills. A prototype of the Actuarial Value Ladder was launched at the meeting. The framework was intended to highlight the contributions that actuaries can make within organizations and on behalf of the actuarial profession. Each of the concurrent sessions was organized into seven stages and three contribution areas where actuaries can add value. The keynote speaker in the opening session was Juan Williams, a senior NPR correspondent, critically acclaimed author and political analyst for the Fox News Channel. Williams discussed his insights into the emerging political landscape leading up to the 2008 presidential election, adding particular focus to candidates' initial federal health care policy proposals (see the "Letter from the Editor" in this edition). He emphasized that the landscape change is happening so quickly that we are missing it. For example, interventional health insurance policies such as "pay or play" which were wholly rejected by the populous in the 1990s are unchallenged and promoted by both political parties today.



Mr. Williams concluded his talk by emphasizing the decisive times upon us and challenged actuaries to "use the one life that God has given us" to exercise our gifts and leadership to shape our nation's future.

The opening session also allowed time for a brief update on the great work the Actuarial Foundation is doing. Dan McCarthy gave a presentation focused on the Youth Education initiative and shared an inspiring video of the Shake, Rattle & Roll program. The program is intended to be a fun way to teach math and probability and focuses on patterns of nature and games of chance. He delivered some troubling news that major corporations were looking abroad to hire people with necessary math skills due to a lack of domestic talent. Programs such as Shake, Rattle & Roll are aligned with school curriculums and intended to revive youthful interest in developing math skills.

The market stage of the Actuarial Value Ladder was emphasized the rest of the day with market watch discussion sessions for the Individual, Small Group and Employer Stop Loss markets. These sessions promoted an open discussion of trends in benefit design, provider contracting and state regulation. Individual carriers are testing the market with longer rate

(continued on page 24)

Members of the Health Section Council and the Academy met and then enjoyed a meal on the waterfront.

guarantees, including some products with level premiums for three years. "Mini Med" products are being promoted to provide limited coverage to previously uninsured markets. There was some agreement that health care providers have been receptive to these products, preferring a partial reimbursement for their service as opposed to treating uninsured members. Easier promotion and lower acquisition cost were mentioned as some Internet marketing successes while some attendees were concerned with an "additional layer" in the sales process and the lack of corporate branding that is delivered through internet Web sites. The individual mandate to purchase coverage in Massachusetts generated a good deal of discussion in the individual and small group sessions, but those close to the process suggested it would be several years before the regulation had any real effect on reducing the uninsured population.

Thursday morning began early with sponsored breakfasts from two SOA sections and the Health Disability Special Interest group, a subgroup of the Health Section. Bob Beal, executive editor of the Disability Newsletter, delivered an interesting presentation on the financial results of the individual non cancelable market. He discussed the return to profitability in the current decade after significant losses in the 1990s. His presentation also highlighted the higher profitability of companies still actively selling in the market compared to companies with closed blocks.

As expected, there was tremendous interest in the latest developments in private Medicare plans. This was discussed in sessions Thursday on Medicare Part D and the Medicare Advantage Process. Medicare was particularly fresh on the minds of many attendees who completed the third round of competitive bids a few weeks earlier. In the Part D session, Chris Carlson, an actuary with Oliver Wyman, discussed the differences between the 2008 Part D bids versus prior years. His presentation focused on the increased documentation requirements and the difficulties that health plans were having in submitting Prescription Drug Event (PDE) records.

In the Medicare Advantage session, Chuck Miller of Milliman discussed the growth in the Medicare Advantage market and the array of products available today. He highlighted the growth of Private Fee For Service (PFFS) products and the higher average ratio of revenue to Fee for Service cost compared to HMOs and PPOs. He described the MA program as healthy, but identified concerns with future reduced payments. Susan Pierce, an actuary with Blue Cross Blue Shield of Massachusetts, delivered a candid presentation of the challenges of developing numerous Medicare bids from a health plan actuary's perspective. In addition to discussing the bid development process and tailoring a product to the Medicare market, she provided helpful advice in preparing for and in understanding a Medicare bid audit. Presenters in both Medicare sessions mentioned that the sheer volume of choices available may be overwhelming to Medicare beneficiaries.

One of the final concurrent sessions Thursday was a presentation of a SOA-sponsored research project that compared quantitative measures on the commercially available risk adjustment tools. The study tested 12 models from a number of different vendors. Ross Winkelman and Syed Mehmud performed the study and discussed the process, considerations and conclusions. The study is available on the SOA Web site at *http://soa.org/soaweb/research/health/hlth-risk-assement.aspx*.

Thursday concluded with The Regence

Group acting as the home team and offering Seattle hospitality by hosting a late afternoon reception and raffling several gifts and prizes.

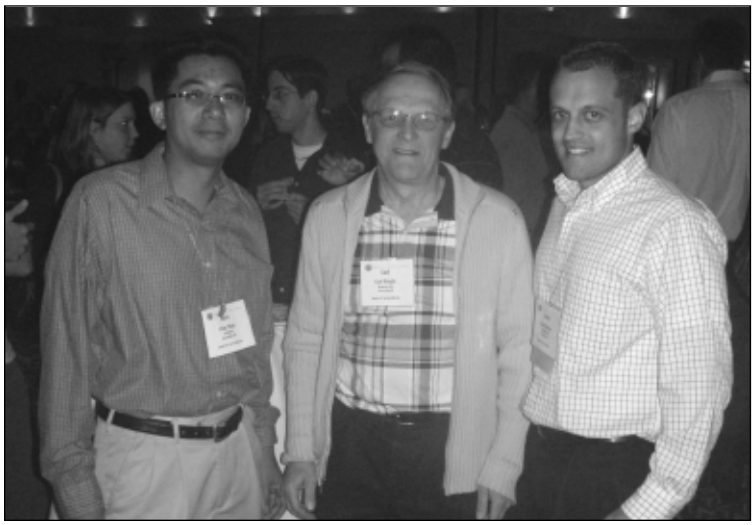
The last day of the meeting commenced with the Health Section Council breakfast. Bill Lane, chair of the section, discussed ways to handle change and spoke from his own career experience. He encouraged all actuaries to learn new skills and not to continue doing the same things in a changing environment. He also discussed the necessary expansion of the Health Section Council from nine to 12 members to foster increased accountability and the research efforts of the section to determine and meet the needs of employers.

Michael Muldoon, Kate Tottle and Greg Winkler led a Friday morning session on Managed Medicaid. Tottle began the session with a story of a Medicaid member's health care history which highlighted the different needs of the Medicaid population. This led into a history of the Managed Medicaid market and the interaction of the federal and state government in financing and administering care. Muldoon discussed the rate setting process from a state's perspective. He discussed the data sources that are required to facilitate the rate development. Some health plan representatives expressed the difficulty of reporting encounter data. A primary concern discussed by attendees was the definition of actuarial soundness in conjunction with a Medicaid rate certification. Winkler concluded the presentation with some thoughts on the future of the market. He said that more states are allowing the private market to expand into rural areas and he expects the market to grow as states seek to control their health care budgets. He highlighted the differences relative to the commercial market (no marketing or underwriting) and encouraged attendees without Medicaid experience to look for opportunities to participate in this unique and dynamic market.

One of the final presentations was on the evolution of new prescription drugs and the process of developing generic equivalents. The presentation was led by Laura Barrows of Coventry Health Care and Dr. Joel Shalowitz, a professor at the Kellogg School of Management. Barrows discussed the various phases of clinical testing, the life cycle of patents, and the delayed generic cost savings, due to the exclusive nature of an initial generic equivalent. Dr. Shalowitz presented a clinical definition of generic bioequivalence and stressed the potential varying effects of two bioequivalent drugs. He also discussed the cause-effect relationship of co-payment savings with generic substitution and some of the common pitfalls that health plans face in designing prescribing incentives and benefit plans. In general, this session was less actuarially focused than others and concluded the meeting with a nice reminder of the opportunities that actuaries have to expand their horizon and add unique value to employers and other types of organizations.

The final sessions ended before noon and Seattle offered nice afternoon weather to attendees who did not have to hustle to the airport. I took in the underground tour and had an early dinner at the Fish Club with an unusually clear view of Mount Rainier. At 6 a.m. the next day, I was trying to catch fish from a small, cold boat in Puget Sound. The sleep I was looking for had to come later.

The Annual Meeting will be back east in Washington, D.C. Oct. 14-17. Details are available on the SOA Web site. I hope to see you there.



The Spring Meeting provided great opportunities for people to catch up, especially the networking reception.

Sound Bites from the American Academy of Actuaries Health Practice Council

Contributed by Heather Jerbi and Geralyn Trujillo

What's New

On June 15, the Joint Committee on Retiree Health sent a letter to various Texas state officials clarifying the mischaracterization of a prior Academy letter to FASB (May 31, 2006) that was used to justify pending legislation that, if passed, would impede the implementation of GASB 43/45 for Texas public plans. The June letter clarified the intent of the 2006 comment to FASB, and confirmed that the joint committee remains supportive of accrual accounting for other post-employment benefits (OPEBs).

During the Summer National Meeting of the National Association of Insurance Commissioners (NAIC), a letter from the Academy's Medicare Part D RBC Subgroup, was presented to the Capital Adequacy (E) Task Force. This letter noted an unintended consequence of the Medicare Part D RBC instructions and recommended a change for 2007. The letter and instruction changes can be found online at *http://www.actuary.org/pdf/medicare/rbc_june07.pdf.*

In June, the Medicare Finance Work Group released a monograph that focuses on the need for reform to bring the Medicare program into actuarial balance, as well as establish long-term, sustainable solvency. The paper provides an overview of how the Medicare program is funded, its current financial status and potential options to address Medicare's financial problems. In conjunction with the release of the paper, on June 11, Tom Wildsmith, chairperson of the Academy's Medicare Steering Committee, and Cori Uccello, the Academy's senior health fellow, participated in a Capitol Hill briefing to discuss options for reforming Medicare.

The monograph and slides from the Hill briefing can be found online at: *http://www.actuary.org/pdf/medicare/options_june07.pdf* and *http://www.actuary.org/pdf/medicare/slides_june07.pdf.*

On May 24, Patrick Collins, chairperson of the Academy's Medical Reinsurance Work Group and vice chairperson of the Federal Health Committee, testified at a House Committee on Small Business hearing on Expanding Small Business Health Coverage using the Private Reinsurance Market. His testimony addressed the current landscape for the medical reinsurance market, considerations for the design and implementation of a reinsurance program, and utilization of reinsurance to manage risks. Mr. Collins fielded a number of questions regarding the effect of reinsurance on health care costs and access and the overall health of the medical reinsurance market. His full testimony can be found online at *http://www.actuary.org/pdf/health/reinsurance_may07.pdf.*

In April, the committee also published an updated version of its issue brief, "Medicare's Financial Condition: Beyond Actuarial Balance," to reflect information from the 2007 Medicare trustees' report. The paper highlights the committee's view that Medicare faces serious long-term financing problems that should be addressed as soon as possible. The brief is available online at *http://www.actuary.org/pdf/medicare/trustees_07.pdf.*

Ongoing Activities

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

- **Consumer Driven Health Plans Work Group** (Jim Murphy, chairperson)—This work group is developing an issue brief to respond to some frequently asked questions on Health Savings Accounts, as well as a paper analyzing emerging CDHP data.

- **Disease Management Work Group** (Ian Duncan, chairperson)—This work group

released an exposure draft of its practice note on disease management. Comments are due Sept. 23, 2007. The exposure draft can be found at *http://www.actuary.org/pdf/practnotes/health_manage07.pdf*.

- **Health Practice Financial Reporting Committee** (Darrell Knapp, chairperson)—The committee continues to work on updating several practice notes (Small Group Certification, Large Group Medical and General Considerations), as well as drafting a practice note on Medicare Part D accounting.

- **Individual Medical Market Task Force** (Mike Abroe, chairperson)—This task force continues to work on a monograph related to how the current individual market operates. Issues examined in the paper relate to affordability and barriers in the individual medical insurance market.

- **Long-Term Care Principles-Based Work Group** (Bob Yee, chairperson)—This work group is discussing current principles-based methodology and the implications of the Academy's Life Practice Council's work on the area of long-term care.

- **Health Principles-Based Work Group** (Shari Westerfield, chairperson)—This work group will be monitoring and responding to changes due to the principles-based approach, especially in governance and non-LTC areas.

- **Uninsured Work Group** (Karl Madrecki, chairperson)—One subgroup is looking at issues related to the fundamental principles of insurance and the characteristics of health insurance, and a separate subgroup is looking at issues related to health care costs.

NAIC Projects

The Committee on State Health Issues continues to monitor health issues at the NAIC, including LTC, Medicare Part D, principles-based methodologies, Medigap modernization, etc.

Upcoming Activities and Publications

Several documents are slated for publication in mid to late 2007, including the papers on HSAs, the individual market, health care quality and coverage, disease management, and Medicare.

If you want to participate in any of these activities or you want more information about the work of the Academy's Health Practice Council, contact Heather Jerbi at *Jerbi@actuary.org* or Geralyn Trujillo at *Trujillo@actuary.org.*

in process since 1997. In 2004, Phase I of this project was completed with the issuance of IFRS 4, Insurance Contracts. By design, IFRS 4 was intended to be a temporary standard. With European Union countries scheduled to adopt IFRS in 2005, it was necessary that there be some IFRS guidance on how to account for insurance contracts. With the issuance of IFRS 4 as a stop-gap measure, the IASB's discussion of insurance accounting issues continued with the Phase II project.

Since 2002, IASB and FASB have embarked on a number of initiatives intended to foster convergence between IASB's IFRS guidance and FASB's U.S. GAAP guidance. In some cases, the two organizations have formally undertaken joint projects to produce guidance that would be issued by both FASB and IASB. In other cases, it has been agreed that while one organization would undertake a project to develop new guidance, the other organization would closely monitor the project and formally expose the results of that project to its own constituents; this is referred to as a "modified joint project." The Phase II insurance contracts project is an example of a modified joint project, with IASB being the lead organization.

... The key question posed by FASB in the ITC is whether FASB should add to its agenda a joint project with IASB to produce a comprehensive international standard on accounting for insurance contracts.

In May 2007, IASB released the DP on insurance contracts, presenting its preliminary views on many (but not all) of the elements that would be contained in a standard replacing IFRS 4. IASB is seeking comment by November 2007 on specific questions relating to the material in the DP.

In August 2007, FASB released an Invitation to Comment (ITC) having the IASB DP as an attachment. The key question posed by FASB in the ITC is whether FASB should add to its agenda a joint project with IASB to produce a comprehensive international standard on accounting for insurance contracts. The deadline for comments to FASB on the ITC is also November 2007.

With this in mind, the concepts found in the IASB DP are of potential interest to everyone in the U.S. health insurance industry, with three different levels of interest as follows:

- **U.S. insurance subsidiaries of companies domiciled in countries that have adopted IFRS.** These companies are currently preparing IFRS financial statements as part of the consolidated financial statements of the foreign parent. Since the DP discusses potential changes to IFRS, it is of immediate direct relevance to these companies.

- **Other insurers preparing U.S. GAAP financial statements.** In light of the FASB ITC, there is a substantial likelihood that FASB will eventually replace existing U.S. GAAP guidance on insurance accounting with guidance consistent with that ultimately adopted for IFRS. Consequently, the DP is indirectly relevant to any insurer that prepares financial statements under U.S. GAAP.

- **U.S. insurers that only prepare financial statements under Statutory Accounting Principles (SAP).** Even those mutual and not-for-profit organizations that only produce SAP-basis financial statements may find it worthwhile to monitor the DP. If FASB were to adopt new U.S. GAAP guidance on insurance accounting, then it seems likely that the National Association of Insurance Commissioners (NAIC) would, at a minimum, undertake a project to consider whether part or all of the new U.S. GAAP guidance should be incorporated into the NAIC's SAP guidance.

From the perspective of the U.S. health insurance industry, it is worth noting that all of the discussions leading up to the issuance of the DP have taken place at an international level. Consequently, to the extent that U.S. health insurance products have unique features that raise

potential implementation issues relative to the DP's accounting model, those issues may not have been broached prior to the issuance of the DP. We will return to this train of thought later in this article.

The Current Exit Value Model

One of the key features of the DP is that it is attempting to develop a principles-based model for liability estimation that is applicable to all types of insurance and reinsurance contracts. As such, the DP does not contain separate guidance for life insurance contracts versus nonlife insurance contracts, or for short-duration contracts versus long-duration contracts, or for direct contracts versus reinsurance contracts. Instead, the DP presents a single valuation approach that one should be able to adapt to any type of insurance contract.

In the DP, IASB classifies insurance liabilities into two main types. The **pre-claims liability** is defined as the insurer's stand-ready obligation to pay valid claims for future insured events arising under existing contracts; the **claims liability** is defined as the liability to pay valid claims for insured events that have already occurred, including claims incurred but not reported. The DP valuation approach discussed below is intended to apply equally to both pre-claim liabilities and claim liabilities.

The name given by IASB to its proposed approach to valuing insurance liabilities is **current exit value**. For purposes of this article, we will abbreviate current exit value as CXV instead of CEV, in order to avoid potential confusion with another approach considered but rejected by IASB, namely current entry value.

IASB defines CXV as follows (¶93 of the DP):

> "Current exit value can be defined as the amount the insurer would expect to pay at the reporting date to transfer its remaining contractual rights and obligations immediately to another entity."

IASB recognizes that transfers of existing contractual rights and obligations from one insurer to another are relatively rare in practice. Consequently, one cannot readily measure the CXV of an insurance liability by reference to financial market transactions, as one might be able to do with other financial instruments. Instead, one needs to estimate the CXV of an insurance liability.

The DP asserts that an estimate of the CXV of any insurance liability should be viewed as being made up of three building blocks:

1. An estimate of future cash flows.
2. The time value of money.
3. A margin (for risk and service).

As we discuss below, the DP provides guidance relative to each of these three building blocks. In digesting this guidance, it is instructive to always keep in the back of one's mind that the concept underlying the CXV liability estimate is to establish a proxy for what the insurer would need to pay (or receive) in order to transfer its current contractual rights and obligations under the insurance contract to another party.

The Three CXV Building Blocks

For the first of the three CXV building blocks, namely cash flow estimates, ¶34 of the DP presents five objectives that the estimates of future cash flows need to satisfy:

a) Cash flow estimates need to be explicit, rather than implicit.

b) Cash flow estimates need to be as consistent as possible with observable market prices. (For cash flows associated with health insurance products, the practical impact of this criterion is likely limited to interest rates and inflation rates.)

c) Cash flow estimates need to incorporate, in an unbiased way, all available information about the amount, timing, and uncertainty of future cash flows. In particular, the insurer

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should not base the liability on a single point estimate of the future cash flows. Instead, the insurer should identify various scenarios, and assign probabilities to those scenarios; the expected present value (EPV) of cash flows over the various scenarios would then form the basis for the liability measurement. Moreover, in both developing each scenario's cash flows and developing the probability weights for the scenarios, the insurer needs to be neither conservative nor optimistic; that is, the estimates need to be unbiased.

d) Cash flow estimates need to be current, meaning that they correspond to conditions as of the valuation date. Put differently, there is no lock-in principle; all assumptions are updated at each valuation date.

e) Cash flow estimates need to exclude any cash flows that are specific to the insurer and would not arise for other market participants holding an identical insurance obligation. This criterion is intended to be consistent with the notion that a CXV liability estimate reflects what another market participant would be willing to pay to assume the contractual obligations of the insurance contract. We will discuss the concept of excluding entity-specific cash flows at greater length later in the article.

... Cash flow estimates need to be current, meaning that they correspond to conditions as of the valuation date. Put differently, there is no lock-in principle; all assumptions are updated at each valuation date.

After an extended discussion, the DP concludes that future premiums and associated future benefits should be included in the measurement of the pre-claims liability if, and only if, any of the following three conditions are met:

- The insurer can compel the policyholder to pay future premiums.
- Including the future premiums and benefits would increase the measurement of the liability.
- The policyholder must pay the premiums in order to retain **guaranteed insurability**.

IASB defines this important concept of guaranteed insurability (in ¶154 of the DP) as "a right that permits continued coverage without reconfirmation of the policyholder's risk profile and at a price that is contractually constrained." We will return to this concept later in the article.

The main implication of the second CXV building block, namely the time value of money, is that all insurance liabilities should be discounted. The guidance in the DP indicates that the discount rates used in measuring insurance liabilities should be consistent with market prices for other cash flows with similar characteristics. In particular, the discount rates should not bear any explicit relationship to the insurer's expected returns on its asset portfolio.

The third and final CXV building block actually has two distinct components: risk margins and service margins.

The DP defines a risk margin as an input to the liability estimate that reflects the degree of uncertainty that exists in the estimation of cash flows. IASB indicates that the risk margin is intended to be an explicit and unbiased estimate of the compensation that market participants demand for bearing risk. Also, the DP states that the natural level at which measuring risk margins should be measured is at the level of a portfolio of contracts that are subject to broadly similar risks and managed together, as opposed to at the contract level or the legal entity level.

There has been some controversy during the Phase II project over whether or not risk margins should be calibrated at the inception of the contract to the margins implicit in the premium charged to policyholders. IASB's current view is that such calibration is not theoretically correct, although it is quite possible that using entry

value as a proxy for CXV in some situations is reasonable. This implies that the insurer could, in some circumstances, immediately recognize some profit (or loss) for a contract immediately upon policy issuance, which would not occur if the risk margin were always calibrated to premiums.

Appendix F to the DP discusses a number of different methods that might be appropriate to determine risk margins in different situations, including: explicit confidence intervals; conditional tail expectation (CTE) measures; cost of capital; and measures derived from parameters of an underlying probability distribution. This appendix also states that having an implicit but unspecified margin in the liability via the use of conservative assumptions (referred to by IASB as a "provision for risk of adverse deviation") would be an unacceptable approach to determining risk margins. Note that the International Actuarial Association is currently working on an educational document relating to risk margins.

Some insurance contracts require the insurer to perform services that other market participants would typically require a profit margin to perform. For such contracts, the liability measurement should include a service margin relating to those services.

... Some insurance contracts require the insurer to perform services that other market participants would typically require a profit margin to perform.

Entity-Specific Cash Flows and Health Insurance

At this point in the article, we turn our attention to a discussion of some of the potential implications of the CXV accounting model to U.S. health insurance products.

As noted above, under the CXV model the insurer's estimates of future cash flows should exclude the impact of any cash flows that are specific to the insurer and would not occur if another market participant were to assume the insurer's rights and obligations under the insurance contract.

Appendix E to the DP lists a number of examples of entity-specific cash flows, including:

- An intention to settle insurance liabilities in a way differently than other market participants would settle them, e.g., an auto insurer that decides to use its own garages to service claims.
- Superior claims management skills.
- Actions that would limit lapse rates.
- Unusually efficient, or unusually inefficient, administrative systems.

These examples raise the following question, which appears to be fundamental to evaluating the potential impact of the DP on U.S. medical insurance products:

***Key Question #1**: To what extent do a medical insurer's contracts with health care providers generate entity-specific cash flows?*

One potential interpretation is that all of the insurer's provider discounts are entity-specific cash flows, since other market participants would not have the benefit of the insurer's provider contracts. In this case, all measurements of the insurer's CXV liabilities would need to exclude the impact of the provider discounts and hence would be based on undiscounted benefit costs, i.e., based on billed charges. This would lead to a reporting model in which significant losses are recognized when liabilities are established based on billed charges, and significant gains are later recognized as claim payments are made under the terms of the provider discounts. Would such a model meet the needs of financial statement users, or faithfully represent the economics of the insurer's business?

Another potential interpretation is that instead of eliminating all provider discounts from

(continued on page 32)

the cash flow estimates, the insurer would need to adjust its provider discounts to a level consistent with the provider discounts available to a typical market participant. In this situation, an insurer with better-than-average discounts would tend to have modest gains from the runoff of its liabilities, while an insurer with worse-than-average discounts would tend to have modest losses as the liabilities run off. Of course, since the precise details of provider discounts are typically treated as proprietary information, assessing the relationship of an insurer's provider discounts to those of other market participants would be an inherently subjective exercise.

A potential solution to this quandary would be to assert that the "reference transaction" for measuring the CXV of a medical insurance liability should be a hypothetical transaction that does not alter the provider discounts available to the policyholder. (For example, consider a 100 percent quota share reinsurance treaty under which the ceding carrier provides access to its provider arrangements to the assuming carrier.) This would imply that the insurer would always use its own provider discounts in measuring its liabilities, consistent with current practice.

There are a number of other areas where a health insurer may need to adjust its cash flow estimates under CXV in order to "back out" the impact of entity-specific activities. Examples might include:

- The beneficial impact of disease management programs on long-term medical trend assumptions, to the extent that other market participants do not have such programs;

- The impact on recovery rates of a long-term disability (LTD) insurer's enforcement of contractual definition of disability provisions, to the extent that other market participants enforce such provisions more stringently or more liberally;

- The impact on claim incidence rates of a long-term care (LTC) insurer's application of contractual activities of daily living standards, to the extent that other market participants apply such standards more stringently or more liberally.

Guaranteed Insurability and Health Insurance

As discussed above, the measurement of the pre-claims liability under CXV would only include future premiums and future benefits in three defined situations, the most important being where the policyholder would need to pay those premiums in order to retain guaranteed insurability.

This raises a second fundamental question that needs to be understood in order to evaluate the potential impact of the DP on U.S. health insurance products:

Key Question #2: *Which U.S. health insurance products satisfy the guaranteed insurability (GI) criterion for which time periods?*

Reasonable answers to this question may be:

- A group health policyholder has GI through the next policy renewal date (except in situations where the insurer has guaranteed the renewal premium rates).

- A Medicare Advantage policyholder has GI until the end of the current calendar year.

- A policyholder of a guaranteed-renewable individual health contract has GI for the duration of the contract.

However, it is far from clear that IASB's definition of GI would lead one to those conclusions. The underlying issue is what, precisely, IASB intends when it refers in the GI definition to "a price that is contractually constrained." Potential issues in applying IASB's GI criterion include the following:

- Some medical insurance contracts may be written in such a way that the insurer technically has the ability to unilaterally raise premium rates prior to the policy anniversary date; however, the insurer does not generally

make use of that clause and instead applies premium increases on an annual basis. Does the existence of such a contractual provision imply that the policyholder does not have GI? Are the insurer's historical practices with respect to that clause, and/or the insurer's future intent with respect to that clause, relevant factors?

- In some states, the insurer cannot unilaterally decide to non-renew a small group contract, and there are regulatory constraints on the rate increases that the insurer can impose at renewal. Do these regulatory restrictions imply that the policyholder has GI beyond the next renewal date?

- With a guaranteed-renewable individual medical policy, rate increases are typically implemented on the policy anniversary date, but the insurer does not base the rate increase on a re-evaluation of the policyholder's risk profile, and the insurer's rate increases are typically subject to regulatory oversight. However, the insurance contract may not formally specify or constrain the magnitude of the annual rate increases. Does this imply that the policyholder does not, in fact, have GI beyond the next policy anniversary date?

- For many LTC contracts issued today, the insurer needs to certify at issue that it does not currently expect to raise premium rates. However, if experience deteriorates, the insurer may have the ability to ask regulators to approve a rate increase. How does this dynamic affect the extent to which the LTC policyholder does or does not have GI?

Medical Insurance: Claims Liability

For the remainder of this article, we limit our focus to U.S. medical insurance products, and we discuss some issues involving the impact of the CXV model relating to current valuation practices.

For medical claims liabilities, implementation of the CXV model may involve the following challenges:

- **Explicit cash flow projections.** Many current claim liability models focus on producing estimates of the ultimate incurred claims for each incurral month, without producing cash flow streams showing the expected timing of payment of those claims. Since CXV requires explicit cash flow estimates, existing models may need to be modified in order to "complete the triangle" and thereby produce projections of future claim payments by month. This may be particularly awkward in situations where techniques other than development methods (e.g., loss ratios) are used to estimate incurred claims.

- **Consideration of multiple scenarios.** Most insurers today establish their claims liability estimate by selecting a single scenario, although they may consider a small number of alternate scenarios in the process of selecting the single scenario. Under CXV, the insurer's liability estimate needs to be a probability-weighted average over a variety of scenarios. This does not necessarily imply that the insurer needs to use stochastic methods to generate the liability estimate. For example, perhaps the insurer could establish a clearly defined family of assumption sets (i.e., choice of completion factor methods, choice of trend rates, etc.) and generate liability estimates for each such scenario, together with a clearly defined process for updating the probability weights applied to each scenario's results.

- **Consideration of all cash flows.** Many insurers today employ models where the claims liability for a particular incurral month is never allowed to be negative, even in situations where the historical claims lag data would support a completion factor in excess of 1.0. This practice would not appear to be compliant with CXV, which would require the insurer to make unbiased estimates of all future cash flows associated with the claims, including the possibility of

(continued on page 34)

future claim recoveries, subrogation, coordination of benefits (COB) recoveries, etc.

... Current claims liability estimation practice among most medical insurers involves developing unbiased estimates of the ultimate incurred claims, and adding an explicit margin to the resulting liability estimate ...

- **Discounting.** In light of the current state of medical claims processing, the impact of discounting medical claims liabilities is likely to be on the order of magnitude of one percent of the liability. Once a valuation model has been modified to produce explicit cash flow estimates, the additional step of discounting the claims liability is unlikely to be burdensome.

- **Risk margin.** Current claims liability estimation practice among most medical insurers involves developing unbiased estimates of the ultimate incurred claims, and adding an explicit margin to the resulting liability estimate; one can interpret the margin as a reflection of the uncertainty associated with the estimation of ultimate incurred claims. From this perspective, current practice is well-aligned with the CXV model. However, more rigor will be required under CXV to ensure that the insurer's claims liability margins are consistent with the margins that market participants require to bear insurance risk. Further thought regarding this topic is warranted.

Medical Insurance: Pre-Claims Liability

For purposes of discussing issues relating to pre-claims liabilities for medical insurance, we will assume that a group medical policyholder has GI through the annual renewal date, and that an individual medical policyholder has GI for the duration of the contract.

Under this assumption, one of the most promising aspects of the CXV model is that the insurer may be able, via the use of a CXV pre-claims liability, to reflect in its financial reporting the economic reality that many medical insurance products are expected to have significant intra-year seasonality in claim costs, due to the benefit design.

As an example, consider a typical high-deductible group medical insurance policy, where cost-sharing features are based on the calendar year. For such a policy, the expected incurred claims by calendar month may climb steadily throughout the calendar year, with the expected December incurred claims being (say) twice the level expected in January. However, premiums are level throughout the policy year, which is not necessarily the same as the calendar year. For purposes of this example, we are tacitly assuming that the insurer would continue to recognize premium revenue ratably over the policy year, as typically done under current practice. The DP does not actually contain any preliminary conclusions relating to revenue recognition for insurance contracts; this would presumably need to be addressed before issuance of a new IFRS on insurance contracts.

Suppose the policy is issued on Jan. 1 and premiums are paid monthly. Under current financial reporting models, the insurer has no unearned premium liability, and the literature does not clearly support recording a policy reserve on a short-duration product. As such, due to the disconnect between the timing of premium and claims, the insurer expects to report substantial gains on this policy in early portions of the policy year, followed by losses later in the year.

From a CXV perspective, however, throughout the year the insurer would need to establish a pre-claims liability relating to the unexpired term of the contract. This reflects the fact that if the insurer wanted to transfer its remaining rights and obligations under the contract in the middle of the contract year, it could not do so without making a payment to another party. The pricing of the product assumed that premiums from earlier months would be available to pay claims

from later months, so the insurer would need to share some portion of those early premiums in order to divest itself of its stand-ready obligation to accept the later premiums.

It is reasonably easy to see that, for a high-deductible group medical contract issued on Jan. 1, the CXV pre-claims liability would increase during the early portions of the year and decrease during later portions of the year, reaching zero at Dec. 31, the end of the policy year. For policies issued at other points in the year, however, the Dec. 31 CXV pre-claims liability for a high-deductible contract would generally be negative. This reflects the fact that the pricing of the non-January policies anticipated that the post-December premiums would produce higher-than-normal operating margins in the latter portion of the policy year.

Consequently, for a portfolio of high-deductible group medical contracts issued at different times throughout the year, the insurer's CXV pre-claims liability would likely be positive at some points in the calendar year, and negative at other points, including Dec. 31. The negative Dec. 31 liability reflects the fact that the insurer expects an economic benefit in the following calendar year from the remaining pre-renewal months of its portfolio of existing non-January contracts.

In this manner, the CXV pre-claims liability could serve to stabilize the intra-year pattern of expected profits on medical insurance products with seasonal claim costs. In the above example, we considered a product having increasing seasonality in claim costs throughout the calendar year. However, these concepts would be equally applicable to a product with decreasing calendar year seasonality, such as Medicare Part D. For a portfolio of Medicare Part D policies issued on Jan. 1, the insurer would likely have a negative CXV pre-claim liability throughout the calendar year, until Dec. 31 when the liability is zero. This reflects the underlying economics of the Medicare Part D product, where the insurer can reasonably expect to recoup losses incurred early in the calendar year from premiums received later in the year.

The discussion above has focused on the potential implications of the CXV pre-claims liability in a single-year context. The CXV model may have some interesting implications in a multi-year context for individual medical insurance, particularly for attained-age products. Today, many carriers do not establish any active life reserves (other than unearned premium) for attained-age individual medical products, arguing that there is no pre-funding of claim costs from one year to another. Under CXV, a pre-claims liability calculation would need to be performed, considering future cash flow projections over the GI period under a variety of different scenarios. Conceivably, this could lead to a positive, or perhaps a negative, pre-claims liability for some policies where insurers are not currently recording any such liability. There is clearly a need for actuarial modeling to shed further light on the potential implications of CXV for individual medical policies.

... From a CXV perspective, however, throughout the year the insurer would need to establish a pre-claims liability relating to the unexpired term of the contract.

Concluding Thoughts

With comments due to IASB and FASB on the DP in November 2007, it is critical for U.S. health actuaries to engage in discussion and debate at this point in time regarding the applicability and appropriateness of IASB's CXV model with respect to U.S. health insurance products. This article has merely scratched the surface with respect to assessing the potential impact of the DP on U.S. health insurance. We hope that this article will stimulate interest in this important and evolving topic.

Footnote

[1] As of this writing, the DP is accessible at *http://www.iasb.org/Open+to+Comment/Open+to+Comment.html*

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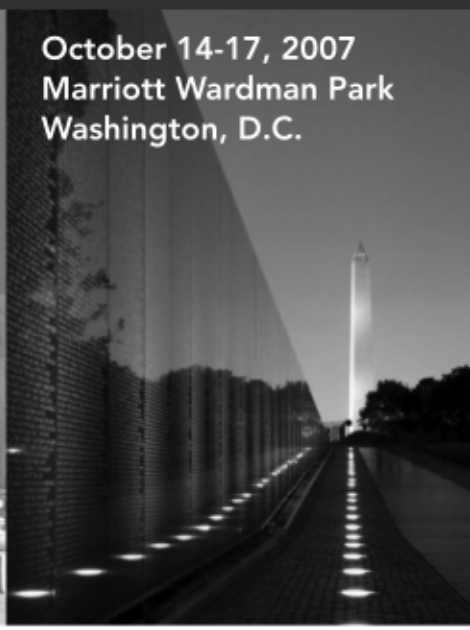

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WE'VE ALREADY LINED UP THESE EXCITING SESSIONS:

SESSION 51: HEALTHCARE CRISIS: YESTERDAY AND TODAY [PD]

Tuesday, October 16, 2007 8:30 - 10:30 a.m.

SPONSORED BY THE HEALTH SECTION

This is the first in a three-part series covering the health-care crisis in the United States, which will focus on the past and present: How today's healthcare crisis evolved over time; where are we today; how we got here; what has been tried and the outcome. Speakers will characterize the current U.S. healthcare crisis in terms of recent trends in health and well-being, disease prevalence, mortality, cost of care, the uninsured and the provider community-and what these trends mean for the health system as a whole.

SESSION 65: HEALTHCARE CRISIS: TODAY AND TOMORROW [PD]

Tuesday, October 16, 2007 10:30 a.m. - Noon

SPONSORED BY THE HEALTH SECTION

This is the second in a three-part series covering the healthcare crisis in the United States. What are the most critical points to be addressed in the near future? Of the myriad efforts to address the crisis today–which are working and which aren't? What emerging issues-childhood obesity, pandemic threats, physician supply–will have a significant impact on health care in the future? The panel will debate the ongoing accountability of various stakeholders–government, employers, insurers, providers, industry groups and individuals–for dealing with health and health care in the United States.

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