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Evaluating the feasibility of consumer driven health plans

by Scott A. Weltz, FSA, MAAA

Consumer Driven Health Plans (CDHPs) consisting of high deductible products paired with spending accounts have increased in popularity in the past few years. Health Reimbursement Arrangements (HRAs) gained momentum last year after a 2002 IRS ruling clarified their status as an acceptable means of employer-provided accident and health coverage. Health Savings Accounts (HSAs) were born with the passing of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA).

While the debate regarding the effectiveness of CDHPs continues, one thing is clear: CDHPs are hot! Whether you are insuring a high deductible plan or providing administrative services to self-insured employers, evaluating and communicating the feasibility of these plans is crucial to offering a successful product.

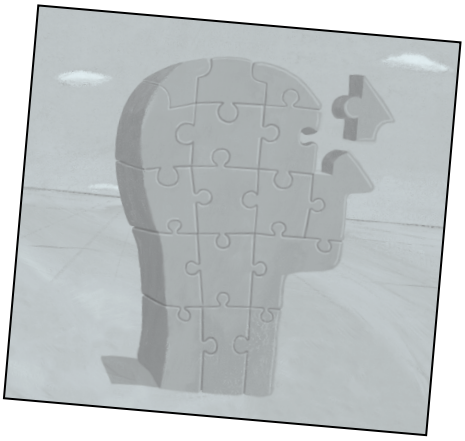
The CDHP feasibility formula

In short, CDHP savings relative to another medical plan can be quantified as follows:

CDHP Savings*
= (1) Savings from increased cost sharing
+ (2) Savings from reduced utilization of services
- (3) Costs from employer account contribution
- (4) Potential costs from additional CDHP administration

(Assumes identical covered medical benefits, provider networks and reimbursement levels, care management procedures and demographic mix.)*

A CDHP must be designed such that the expected decrease in insured medical costs with the high deductible plan will offset the increase in costs due to the employer's account contribution and any administrative costs associated with the CDHP. The high deductible plan must be structured such that insured costs



decrease due to both increased cost sharing provisions and wiser consumption of medical services. Besides the employer's account contribution, another potential CDHP cost is the additional administration necessary to manage the accounts and to provide employees with decision-support tools to make educated health care decisions.

While each component of the savings formula appears fairly straightforward on the surface, it is the interaction of these components which adds some complexity to this analysis.

Correlation of utilization with cost sharing and employer-provided accounts

Many actuaries would agree that a $1,500 deductible plan will result in a lower level of utilization than a $250 deductible plan, all else being equal. However, debates would certainly arise if you pose the same scenario except that a $750 account is provided by the employer with the $1,500 deductible plan. Most would expect the utilization to be higher than the identical plan without such an

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editorial

In-sourcing ethics

by Loretta Jacobs

One of the issues of this year's election is outsourcing of jobs to foreign countries where the workforce may be less expensive and equally or more qualified than the American workers being replaced. Many Americans, particularly those whose careers are tied to the manufacturing and service sectors, are very concerned about this phenomenon. However, when I read the newspapers today, and hear about Kenneth Lay, Jeffrey Skilling, Andrew Fastow, David Duncan, Bernard Ebbers, Scott Sullivan and, of course, Martha Stewart, I wonder whether financial and corporate executive ethics have been outsourced as well. In fact, I find that I brace myself every time I pick up the business section of the newspaper in case the latest report of corporate malfeasance concerns the misdeeds of actuaries and/or the insurance industry in general.

Cause for concern

You may be wondering why I am concerned about this since the insurance industry is so heavily regulated and actuaries take oaths to perform their duties with honesty and integrity. Maybe it's part innate skepticism and part pragmatism. After all, Andrew Fastow from Enron, David Duncan from Arthur Andersen, and Scott Sullivan from WorldCom were CPAs who had also taken oaths to act with honesty and integrity. Those oaths did not seem to stop them from behaving unethically and ultimately committing criminal acts.

Furthermore, those of us who attended the FAC and watched "The Billion Dollar Bubble" know that an actuary played an integral part in the Equity Funding debacle of the 1970s. At least in the Hollywood dramatization of the Equity Funding story, the moral is that a seemingly small ethical lapse can and does lead very rapidly to a very slippery and steeply sloped ethical quagmire. So, the actuarial professional has been guilty before. Will we be guilty again?

Our integrity at risk

If the answer is yes, what would that mean to the insurance industry? I think it is fair to say that if there is any question as to the integrity of the actuarial profession, the integrity of the entire insurance industry would be called into question. Actuaries are relied upon to estimate the probability and cost of contingent events in their pricing/premium development and valuation roles for insurers. Since these contingencies are insured by the industry using the premium rates developed by the pricing actuaries, and the insurance industry liabilities are valued periodically for statutory, GAAP and tax accounting purposes by the valuation actuaries, the entire underlying economic viability of the industry is in the actuary's hands. Honest mistakes by actuaries can result in significant financial difficulty for the insurance industry; dishonesty and/or fraudulent behavior on the part of the actuaries might destroy the industry for good.

Our future is our responsibility

I believe it is extremely important that we, as a profession, police ourselves since we bear the weight of the viability of the entire insurance industry on our shoulders. So, how can we most effectively ensure that our members discharge their duties with honesty and integrity while adhering to sound actuarial principles and methodologies?

Well, we do have the Actuarial Board for Counseling and Discipline (ABCD). We as actuaries have a responsibility to report ethical and criminal misconduct that we become aware of to the ABCD so that it may investigate the misconduct and take appropriate disciplinary action. But how does this help us if we are either too naïve to recognize such behavior when we see it, if we work in an environment where the system of corporate governance and oversight has weaknesses that dishonest persons can exploit without being discovered, or if individuals are intimidated into silence by a corporate culture that values the profit ends over the means used to achieve those ends?

More governance procedures needed

The recently implemented Sarbanes-Oxley (SOX) Act aims to address some of these concerns by requiring documentation of processes and procedures, identification of

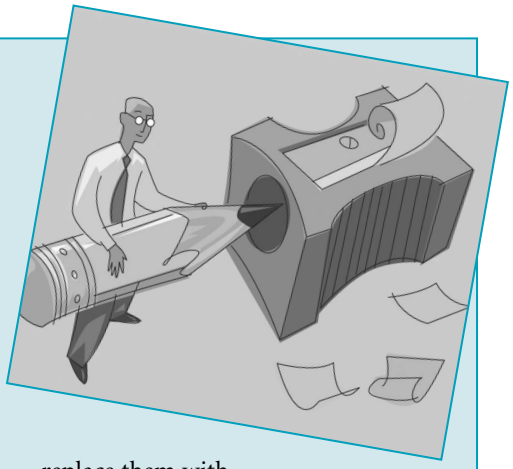
Regarding the April editorial

The editorial in the April issue of *The Actuary* refers to the debate over switching from defined benefit plans to cash balance plans. It is alleged by the writer that plan participants who will now get a lot less at retirement should never have assumed that the defined plan benefits had been promised for service that had not been served yet. It seems outrageous to him that they would complain of broken promises, and even bring legal action. Some history will, however, illuminate their anger.

In the days when large employers tried to retain their work force until retirement, a good pension was publicized as an inducement to employees to stay. In the 1970s, a consulting firm persuaded my employer to provide each employee with an annual statement showing all employee benefits and their cost. Included in my display was an estimated pension amount assuming that I remained until age 65. This was similar to the statements that people occasionally get from Social Security today.

Company employees took the "estimated pension amount at 65" on the benefits statement as a commitment by the company to provide such a benefit. Legally, there may have been no promise made for anything in the future, but the company deliberately gave the impression that they would provide the benefit if we stayed. And in fact, company management DID intend to provide the illustrated pension benefit, including the amount from future service.

Times have changed, and long service employees are no longer considered a valuable asset. Companies try to



replace them with much younger employees, to save salary and benefit costs. Cash balance pension plans will be popular with these new employees, as they replace the old timers, but the remaining old timers have figured it out. Their employer is trying to get out of paying the benefits they bragged about and even illustrated in the past. It is entirely reasonable for the old timers to raise a stink about broken

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Editorial

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process risks and development of controls and mitigants for these risks. I've often thought that one of the biggest problems honest people have in creating systems of laws, regulations and punishments for non-compliance was their lack of dishonesty. They don't know how dishonest people think so it seems to me they are at a distinct disadvantage in attempting to set up regulations that will successfully identify, capture and punish criminal behavior in its tracks before severe damage has been done, such as bankruptcy of the firm (as with Enron and WorldCom).

If SOX implementation enables our insurance industry leaders to establish more secure corporate governance procedures, perhaps dishonest and/or fraudulent activity may be rooted out sooner, and hopefully, well before any harm comes to our policyholders, shareholders and fellow employees.

In addition, some of these concerns may be addressed through internal corporate structure and business oversight policies. Separation or independence of the valuation and financial reporting actuaries from the business units they report results on should mitigate the likelihood that these actuaries will be intimidated into silence if they have significant concerns about results. Well developed peer review and management oversight procedures (for example, corporate actuarial review of pricing and/or financial actuarial calculations) should reduce the likelihood of both intentional and unintentional errors being made that would materially misrepresent the value of the insured liabilities and/or the profits of the insurance business.

In the name of honesty

Outside of these risk management protocols, I think the most important thing we as actuaries can do to assist in policing ourselves is to actually recognize the need to police ourselves. It would be so easy for us to say that our profession is immune to the ethical problems exhibited in other professions because we take oaths to behave ethically and we are closely monitored by the ABCD, peer and corporate oversight committees and the new SOX procedures. The much harder thing to do is admit that we are *not* immune to these ethical problems and that it would only take one bad apple to spoil the entire pie. All we need is to read about one unethical actuary in the newspaper, and our entire profession may become tarnished beyond recognition, just as Andrew Fastow, David Duncan and Scott Sullivan have tarnished the reputation of the accounting industry for untold years to come.

Addressing problems of the uninsured and access to health care simultaneously

by Mark Litow, FSA, MAAA

Roughly 43 million people are reported to be uninsured today in the United States at any one point in time. This number has increased in recent years as the trend in health care costs has significantly exceeded the trend in general inflation and wages. Surprising? It shouldn't be since most, if not all, studies suggest that income levels and health care costs together are the two major drivers of the number of uninsured. These statistics raise the question: How many people are uninsured during a specific amount of time? Are they without health insurance during an entire year? Does uninsured status mean people go without health care indefinitely? Does a greater number of uninsured people result in lower or higher long-term costs for those who are covered by health insurance? This article provides useful information that addresses these questions in part. It also provides some thoughts on avenues toward what needs to be done to reduce the number of uninsured without necessarily reducing access to health care.

How many people are uninsured during one year?

The estimate of 43 million uninsured people, as shown in reports such as those from the Employee Benefit Research Institute, is effectively a snapshot at any one point in time. In fact, longitudinal studies indicate that many of these people go in and out of insurance status during a year. For example, someone may begin the year in Medicaid, lose eligibility and go uninsured for a few months, then obtain insurance through either an employer or purchase individual coverage later in the year. Depending on when a person is surveyed, he or she may be included in any one of these three groups.

Effectively, this means that more than the reported number in any snapshot survey is actually uninsured during a calendar year. Some people remain uninsured for the entire year, while others may move between market segments or in and out of insurance coverage. Estimates of these types of assumptions vary, but the general range of such assumptions I have seen based on research, various studies and anecdotal information are:

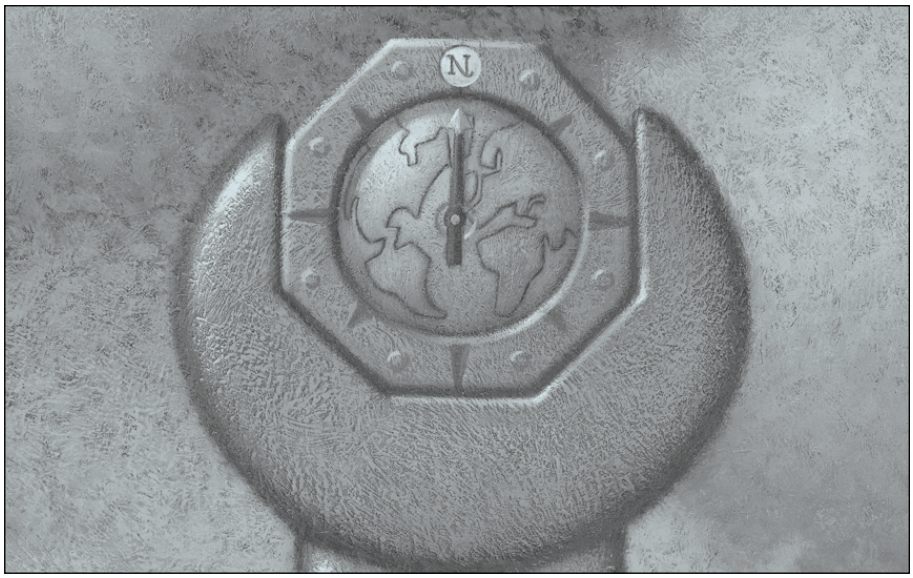
- The proportion of those who remain uninsured for an entire calendar year is 25 to 50 percent of the under age 65 population, excluding those eligible for Medicare.
- Of those who do not remain uninsured for an entire year, the average period of coverage is four to six months followed or preceded by a roughly equal period of four to six months without insurance.

Many people have the impression that uninsured people do not have access to health care. This is not true.

Using the endpoints of these ranges provides an estimate that somewhere between 63 and 75 million people are uninsured at some point during the year. That is, at least 50 percent more people are uninsured sometime during the year than are uninsured at any one point during the year.

Uninsured status and access to health care

Many people have the impression that uninsured people do not have access to health care. This is not true. By law, hospitals and other providers must care for people in need of medical attention. This however, does not mean that a person will receive the same level of care or attention as others who have insurance; the uninsured are also much more likely than insured individuals to be transferred to a different facility for care.



Based on research and studies done to date, people, while uninsured, appear to spend 50 to 70 percent of the amount spent by people who are continuously insured on their health care needs. However, recent studies on uncompensated care used by the uninsured suggest that this range should be increased by loads of 20 to 40 percent, producing a modified range of 60 to 98 percent.

What happens to the uninsured who later become insured? Do they spend more money on health care when becoming insured than do continuously insured individuals? Research to date suggests that on average health care costs of people who go from uninsured to insured status are significantly higher. This statistic is based on observing results when open access to insurance without evidence of insurability is allowed where as before it was not. Data indicates that people who are previously uninsured and become insured use 80 to 100 percent more health care for approximately four to six months, with costs decreasing thereafter to a figure modestly above average (perhaps 10 to 25 percent).

The estimated impact of the uninsured on long-term costs of the health care system

When all of these ranges are combined, it becomes prudent to compare health care costs for those who are uninsured with health care costs for the continuously insured. It begs the question, "Which group generates a higher cost?" The answer is unclear, but results indicate a greater likelihood that costs are greater for the uninsured group. Using the previous assumptions, the average cost for the uninsured group—including periods of insurance and no insurance, versus those with continuous insurance—is about 3 percent higher. The range using the lowest and highest assumptions included here is a 19 percent reduction, where all uninsured assumptions are at the low end and a 25 percent increase, where all assumptions are at the high end. These estimates do not consider impacts on productivity of the population in either status, difference in mortality rates and other factors. Further, the range shown is not intended to preclude the possibility of results outside of this range. Clearly, more longitudinal study of this issue is necessary to remove doubts about the conclusions.

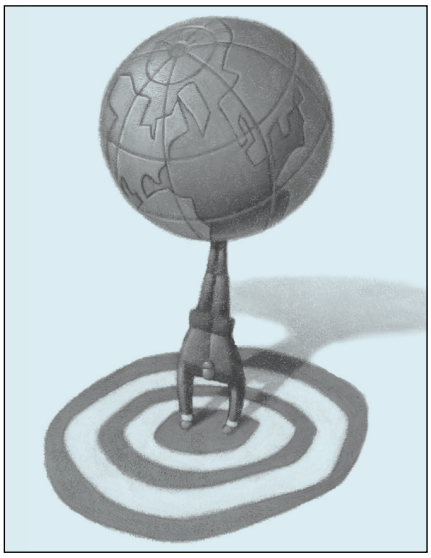
What does this tell us?

The information discussed previously suggests that uninsured people on average may have a slightly greater tendency to increase their long-term health costs than reduce them, while on average they do appear to neglect their long-term health by forgoing insurance. But does this mean that providing easier access to insurance automatically solves the problem?

Keep in mind that many jurisdictions have supposedly allowed easier access to health insurance reforms such as guaranteed issue (allowing no underwriting) or community rating of some type (not allowing higher cost individuals to be charged a rate commensurate with the risk they present). These reforms—although appearing to increase availability of insurance—have generally resulted in higher cost people entering the system when they need protection while the lower cost people wait until the need arises. The result has been more people going in and out of the system, with the additional potential for the negative ramifications noted earlier.

Note that single payer systems may guarantee coverage, but they typically have long waiting lists ...

Note that single payer systems may guarantee coverage, but they typically have long waiting lists and significant access problems after a period of time. Reasons may vary, but often one of the most significant issues is that providers are paid poorly and therefore are unwilling to provide needed care to some or all.



Therefore, trying other types of reforms to solve this problem seems more prudent. Some ideas include mandating coverage, providing tax incentives to those with lower incomes and creating high-risk pools for those with health conditions. Whatever the solutions, they will likely only be successful if they either provide people or buyers with more disposable income, resources to purchase the insurance and/or health care or reduce health care costs and/or needs altogether.

In summary, solutions appear to require finding ways to balance income and costs in a way that produces purchasing power increasing at the same or a faster rate than health care costs and needs. Unless that can be achieved, problems of coverage and access simultaneously will likely only get worse.

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MMA could re-ignite beneficiary and health plan interest in Medicare managed care programs

by Patrick Dunks, FSA and Eric Goetsch, ASA

The recently passed Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) includes significant changes for beneficiaries and presents numerous opportunities for and threats to health plans serving Medicare beneficiaries. As the Medicare+Choice program transitions to the new Medicare Advantage program, increased funding, new plan types and prescription drug coverage will play a large role in shaping the future of Medicare and related health plans.

Background

For readers not already familiar with the Medicare Advantage program (formerly, Medicare+Choice and, before that, Medicare risk), the Centers for Medicare & Medicaid Services (CMS) pays Medicare Advantage health plans a fixed monthly amount for each Medicare beneficiary they enroll in return for providing Medicare benefits to those beneficiaries. The amount per enrollee varies according to numerous factors such as county of residence, age, gender, Medicaid eligibility and, increasingly, health status.

Typically, Medicare Advantage health plans are able to provide extra benefits above and beyond traditional Medicare benefits and reduce beneficiary out-of-pocket costs from traditional Medicare out-of-pocket amounts through their provider contracting and medical management efforts. These increased benefits and lower out-of-pocket costs entice many Medicare eligible beneficiaries to opt out of traditional Medicare and enroll in Medicare Advantage plans. The Medicare Advantage plans contract with health care providers to deliver health care services to their enrollees. Some, but not all, Medicare Advantage plans charge monthly premiums to beneficiaries.

Typically, Medicare Advantage health plans are able to provide extra benefits above and beyond traditional Medicare benefits ...

Medicare advantage plan changes

MMA increases payments to Medicare Advantage plans.

For Medicare Advantage health plans, MMA's most important provision is that payments from CMS were increased and future increases will be at least as large as traditional Medicare trends. Since the passing of the Balanced Budget Act in 1997, annual increases in monthly payments from CMS to Medicare Advantage health plans had been significantly less than cost increases. That business model, where revenue trends were consistently lower than cost trends, drove many health plans from program participation. The MMA changes create business models where revenues and costs should trend similarly. Thus, opportunities for Medicare Advantage health plans should be sustainable.

Despite concerns about the government as business partner and health plan reluctance due to poor previous experience, we expect the new payment levels and annual revenue increases will cause most plans not currently participating in Medicare Advantage to evaluate possible entry and current participants to consider expansion. Without the MMA's funding increases, the other Medicare Advantage provisions may have been academic.

Increased funding improves possibility of real choice in plan options for Medicare beneficiaries.

While MMA adds only regional PPO and specialized plan options to the previously allowed plan options, the MMA funding increases should generate more offerings for beneficiaries in previously allowed, but typically unrealized, plan options:

- HMOs have been the mainstay of the Medicare Advantage program for years and will likely remain so. In general, based on the large number of feasibility studies being conducted, most HMOs are reviewing entry into or expansion within Medicare Advantage. The level of

activity suggests seniors will have many more options starting as early as 2005.

- PPOs (local PPOs) were generally not realized as a plan option in the Medicare Advantage program until the recent PPO demonstration project increased payments for PPO plans. MMA increases payments beyond the demonstration project levels so additional plan entries are very possible. Many health insurers, particularly those with limited geographical potential, are looking at local PPOs as a way to compete - result from MMA.

- Regional PPO structures were created by MMA. Regional PPOs will cover entire regions, urban and rural areas included. The availability of regional PPOs will depend greatly on how CMS draws the regions. Even so, many potential regional PPO insurers may instead choose to enter Medicare Advantage as local PPOs or private fee-for-service plans.

- Medical savings accounts (MSAs) were never offered under Medicare Advantage. MMA makes MSAs a permanent potential option but, realistically, community rating and selection concerns from existing regulations may limit growth of Medicare MSAs.

- A limited number of private fee-for-service (PFFS) plans were available before MMA. Beneficiaries enrolled in PFFS plans may receive services from any Medicare provider even if the PFFS plan has a provider network. MMA's increased funding and the relative ease of entering the Medicare Advantage program as a PFFS plan may make this a popular option with insurers, particularly Medicare Supplement carriers concerned about the competitiveness of their Medicare products.

- MMA provides that new Medicare Advantage plans can be offered as an option for Medicare beneficiaries with special needs provided their programs target those unique needs. CMS provides two examples, institutionalized individuals and Medicaid eligible beneficiaries. We expect some organizations will pursue entry into the Medicare Advantage program through this avenue because they can limit enrollment to specific populations.

Generally, it appears seniors will soon have more options under the Medicare Advantage program. HMOs, commercial group insurers and Medicare Supplement carriers are investigating opportunities and considering possible competitive threats that could emerge with the MMA changes.

MMA and its movement toward the privatization of Medicare, has received mixed support.

Other changes for beneficiaries

Prescription drug coverage will be available.

Starting with the 2006 benefit year, prescription drug coverage will be included in Medicare's standard benefit package as Part D. Medicare's standard Part D benefit will be as follows:

- $250 annual deductible
- 75 percent coverage for drug costs between $250 and $2,250
- No coverage between $2,500 and $5,100
- 95 percent coverage beyond $5,100

The new mandated prescription drug coverage will provide benefits in what has often been an uncovered and potentially high out-of-pocket cost area of health care for Medicare beneficiaries. Beneficiaries will pay a premium to enroll in Part D and, if they don't enroll at first chance, the premium will increase monthly. The monthly increases will provide incentive for early participation and will account for selection issues.

The new drug coverage will be provided by private prescription drug plans (PDPs). Additionally, all Medicare Advantage organizations, except those offering only PFFS plans, will be required to offer prescription drug coverage at least as rich, on an actuarial basis, as Medicare's new Part D drug coverage. The new drug coverage will limit the marketing advantage many Medicare Advantage organizations realized by offering drug coverage, albeit typically limited, to Medicare beneficiaries.

New, standardized Medicare Supplement packages including prescription drug coverage will be offered in place of the current ones. Additionally, employers providing prescription drug coverage to Medicare beneficiaries will explore their choices including redesigning benefits, dropping coverage or taking advantage of the subsidy for "actuarially equivalent" drug coverage.

MMA's long-term impact

The long-term impact of the MMA could be far-reaching in scope. MMA and its movement toward the privatization of Medicare, has received mixed support. The industry response to MMA has generally been favorable but only time will tell whether most Medicare beneficiaries will realize more options for their health coverage. Certainly, offering prescription drug coverage to seniors on a voluntary basis will prove interesting as enrollment and subsequent cost experience emerges.

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From newsletter to magazine ... Look for *The Actuary* in its new format this October!

Let's turn the clock back to 1966 when *The Actuary* newsletter as we know it today first launched. Over the years, many editors have graced this publication with their actuarial wisdom. The style and format have changed to keep up with trends. The content has evolved to stay on top of current issues.

To better serve the changing needs of the membership and profession, *The Actuary* will undergo a major change in October—a transformation from a newsletter to a four-color, glossy magazine. In fact, this issue of *The Actuary* will be the last you'll receive in "newsletter" format. We'll be dedicating our time this summer to designing a new look, deciding on what articles to publish, and performing the many other important tasks required to deliver an even better product for you to enjoy and use.

The Actuary magazine will continue to bring you informative feature articles that will focus on many actuarial topics of the day, so to speak. In addition, this new publication will include articles of interest to actuaries across multiple areas of practice, including career information, letters to the editor, SOA education initiatives, trends in international business and editorials that will be written by the editor and contributing editors on a rotating basis.

"This important change was led by the SOA Board Advisory Group on Publications, chaired by Shirley Shao, and driven by a comprehensive, member-focused analysis of all SOA publications," said Clay Baznik, director of publications. "This analysis indicated that it was time for our main communications vehicle to get a face and content lift to better meet member needs. *The Actuary* magazine will take topics of interest to actuaries to a new level while enhancing the information they now receive."

The change from two-color newsletter to four-color magazine creates another avenue for the SOA to communicate with its members.

New e-mail newsletter

"While the magazine will focus primarily on feature articles related to the actuarial profession, a new e-mail newsletter will keep members up to date on information such as SOA strategic plan initiatives, seminars and meeting opportunities, research activities, section and department highlights and other related topics," added Baznik.

"These changes will be of significant value to our membership and the profession as a whole. From an information standpoint, we will be disseminating current and useful news on a more timely and consistent basis. We will also be keeping the SOA at the forefront of the actuarial profession by continuing to develop innovative and interesting ways to communicate issues of importance."

The first issue of *The Actuary* magazine—which will be published bi-monthly—will debut in October. The new SOA e-mail newsletter will be sent on a monthly basis. The first issue is scheduled to hit computers this September.

Coming in September!

The SOA e-mail newsletter will debut this fall, bringing you news you can use!

Get the latest details about:
- SOA activities & initiatives
- Educational opportunities
- Exam information
- National and global issues for actuaries
- Business news
- And much, much more!

Stay tuned … more details to come this summer!

Correction

The credentials for Valentina Isakina, author of "Actuaries—profession in crisis?" found on page 10 of the May 2004 issue of *The Actuary* were incorrectly published. Her credentials should read, ASA, MAAA, CFA Level II Candidate.

Consumer driven health plans ...

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account. However, should the utilization assumption be closer to the $250 deductible assumption or to the $1,500 deductible utilization assumption?

The analysis becomes more complex when considering the difference between a CDHP where an employer offers a $750 HRA vs. a $750 HSA. Why? All HRAs are employer-owned and most HRAs offered today are forfeited by the employee upon termination of employment. Many HRAs are structured such that accounts are capped at an arbitrary limit (sometimes equal to the deductible level) and typically are not invested. HRAs can be used for any qualified IRS 213(d) expense; however, the employer may limit the qualified expense definition to be much more restrictive (employers often only reimburse cost sharing associated with the high deductible plan).

Conversely, HSAs are employee-owned and are portable upon termination. HSAs are allowed to be invested, can grow tax-free and can also be used for IRS 213(d) expenses on a pre-tax basis. In addition, HSAs can be used for *non-medical* expenses once the insured is Medicare-eligible (simply subject to income tax) or prior to Medicare-eligibility (subject to income tax and a 10 percent penalty).

As you can see, the financial incentives to save rather than use the account on insured plan benefits are materially different between HRAs and HSAs. In turn, these incentives will likely impact the utilization of insured benefits. Due to these issues, the pricing actuary must develop a methodology to consistently assess the impact that the accounts will have on the utilization of the insured medical benefits. The utilization assumptions will probably vary depending on the magnitude of the deductible as well as the corridor of employee cost sharing which results beyond the employer's account contribution. Further, such utilization assumptions should vary depending on the nature of the account (HRA vs. HSA) and its potential uses and limitations.

Other considerations

Other considerations must be addressed when reviewing the feasibility of CDHPs. A few of these are discussed here.

Account Funding

Are real dollars being spent when the account is set up? For example, HRAs are typically notional accounts paid from an employers' general assets while HSAs are actual accounts much like a typical savings account. This is important because an HRA "contribution" only impacts the employer's bottom line if the account is used to reimburse medical expenses. Any unused portion of the account is really just an unfunded liability. Conversely, HSA contributions are an immediate expense, regardless of how or when the employee uses the contribution.

Cost Projection

Because CDHP accounts roll over at year-end, a projection of future costs is often useful in determining the long-term viability of a given plan design. For example, an HRA may result in lower costs than an identical HSA design in early years (due to the difference in account funding). However, the HRA may be more expensive than the HSA in five years when account balances accumulate due to the potentially higher levels of utilization under HRA designs without meaningful savings incentives.

Selection

Offering CDHPs with other plan options may result in positive or adverse selection for the CDHP. CDHPs may be favored by those with fewer medical expenses, resulting in favorable selection for the CDHP. However, some experience indicates that older individuals with higher medical costs sometimes choose the CDHP. This may occur if the CDHP offers fewer provider restrictions than the other options. Thus, it is important to assess the specific risk characteristics of the insured group along with the options offered to them in order to properly project costs.

Administration

Evaluating the feasibility of CDHPs involves considering the unique administrative issues which come with these plans from both an operational as well as a cost perspective. Considerations include:

- If prescription drug benefits are subject to the aggregate deductible (as MMA requires after 1/1/2006), can this be accommodated by the administrator?
- If an HRA is chosen, does the employer have systems in place to substantiate expenses reimbursed by the account?
- Will account information be accessible online?
- Will debit cards be provided to reimburse expenses from the accounts?
- Will employees be provided tools such as provider directories with cost and quality information to make educated decisions?

Conclusion

CDHPs are poised for significant growth over the next few years. However, these multi-faceted plans pose unique risks which must be considered by insurers and employers alike. Insurers must offer competitive products while adequately insuring the benefits. Employers must be assured of the products' viability for themselves and their employees. Those who are able to evaluate and communicate the feasibility of CDHPs will be in great position to take advantage of this huge market opportunity.

Scott A. Weltz is a consulting actuary with Milliman USA. He can be reached at scott.weltz@milliman.com.

Second ballot voting kicks off in July

The Society of Actuaries will hold the second ballot election beginning in July. Fellows of the SOA will be asked to vote for president-elect, vice-president and elected board member. In addition, recommended changes to the SOA Constitution will also be presented for vote. Amending the SOA Constitution requires an affirmative vote of two-thirds of the Fellows voting. It is vital that the Fellows review the supporting materials and submit a vote on these modifications.

The second ballot candidate slate, which includes each candidate's biography and statement, along with supporting materials regarding the Constitutional changes, can be found at the SOA Web site at *www.soa.org*. Click on the election link on the home page.

The SOA's 17 Section Council elections will be held during the same period for all eligible section members (Fellows and Associates) who belong to at least one section.

Voting will be conducted electronically for all voters who have an e-mail address on the SOA database. To make certain the SOA has your updated e-mail address, please verify your information on the online directory. Those who do not have an e-mail address on the SOA database, or those who specifically request it, will receive paper election materials in the mail.

If you did not hear your president-elect candidates speak at the Spring Meeting in Anaheim, you can still catch them at the Spring Meeting in San Antonio. In addition, the candidate's speeches—in video format—are available on the SOA Web site. Also, refer to the enclosed supplement of *The Actuary* which features interviews with the president-elect candidates. You can also check out the discussion forum and other election information available through the election link on the SOA Web site home page.

Your participation in the selection of our future leaders is very important. Please vote, and encourage other SOA members to do so as well. For questions about the second ballot election, contact Karen Gentilcore at 847.706.3595 or *kgentilcore@soa.org*. For questions about section elections, contact Lois Chinnock at 847.706.3524 or *lchinnock@soa.org*.

Come join us! New Taxation Section looking for members

by Christian J. DesRochers, FSA, MAAA

At its January meeting, the Board of Governors authorized the formation of a Taxation Section. Why form a separate section on taxation? The answer is simple: to bring together members with an interest in taxation—an issue that crosses several practice areas—into one section.

While the section touches on issues related to other sections, including Life Insurance and Annuity Product Development and Financial Reporting, there is currently no coordinated effort within the Society of Actuaries related to taxation issues. The mission of this section will be to provide members of the section with the educational, research, networking and other specialized needs that arise in matters related to the taxation of life insurance companies and products, as well as tax matters related to qualified and non-qualified employee benefit plans. Membership in the Taxation Section will serve as a catalyst for continuing education and networking for members with an interest in tax-related issues.

The Taxation Section will cross all practice areas, including life, finance, health and retirement systems. Membership in the section will not be restricted to members of the SOA. Non-members of the Society will enjoy all benefits of section membership, except voting privileges and eligibility for election to the Section Council. It is expected that membership in the proposed section will be attractive to attorneys, accountants and other tax professionals.

To form a section requires that 200 SOA members join and pay the first year dues. The Taxation Section is currently seeking additional members to meet the initial membership requirement. Those who have an interest can find the membership form on the SOA Web site at *http://www.soa.org/ccm/content/areas-of-practice/special-interest-sections/introduction-special-interest-section/introduction-sections.* Click on Join Now! New Taxation Section Forming. Members who would be willing to volunteer for section activities are also invited to participate. Please join us as a charter member of the Taxation Section.

Christian J. DesRochers, FSA, MAA, is Taxation Section Organizing Committee chairperson and can be reached at chris_desrochers@aoncons.com.

Do your own research ... Open the July 2004 issue of the *NAAJ* and discover what's inside!

In the July 2004 issue of the *North American Actuarial Journal,* two papers presented to the Society of Actuaries Symposium, "The Great Controversy: Current Pension Actuarial Practice in the Light of Financial Economics" examine the value of holding equities in the pension fund as well as the necessity of incorporating financial economics into actuarial thinking.

- In "Pensions and Capital Structure: Why hold equities in the pension fund?" John Ralfe, Cliff Speed and Jon Palin analyze the role of the pension plan within the capital structure of the sponsoring employer as well as the consequences of corporate tax. The paper observes the British pharmacy retailer, The Boots Company, with a pension fund of £2.3bn ($3.5bn) in a case study where the bond investment for pension plans has tangible advantages over holding risky assets (e.g. equities). Lastly, the paper evaluates the application of theory into practice.

- Tony Day, in "Financial Economics and Actuarial Practice," assesses traditional actuarial practices and training. As Ralfe, Speed and Palin do in their evaluation of equities in the pension fund, Day draws from and expands upon the financial theories initially put forward by Modigliani & Miller. Compared with newer ways of thinking used by other professions, Day states that traditional actuarial intuition and advice does not accurately specify value, and he proposes that guidelines and standards need significant revision. Using a simple discounted cash flow framework as a reference point, the paper explores concepts from both financial economics and actuarial science as applied to defined benefit schemes. Day concludes that the careful integration of financial economics into actuarial thought is the way toward improvement.

In addition to the two papers presented to the SOA Symposium, this issue of the *NAAJ* also features five articles on topics such as option pricing, ruin theory and reinsurance pricing, the Bornhuetter-Ferguson method and the 1/*n* rule.

- A method for pricing derivatives under the GARCH assumption for underlying assets in the context of a "dynamic" version of Gerber-Shiu's option-pricing model is proposed in Tak Kuen Siu, Howell Tong and Hailiang Yang's paper, "On Pricing Derivatives under GARCH Models: A Dynamic Gerber-Shiu's Approach." The model proposed is said to provide an integrated and convenient approach to handle different parametric models for the improvement of the GARCH stock-price process. The authors defend their pricing result within the dynamic structure of utility maximization problems, which, they argue, increases the attractiveness of the economic intuition of their pricing result.

- In Manuel Morales's, "On an Approximation for the Surplus Process Using Extreme Value Theory: Applications in Ruin Theory and Reinsurance Pricing," the importance of extreme value theory to insurance mathematics is shown by studying extreme events, which are rare, but highly consequential to the insurance market. Considering extreme value theory, this paper creates a generalized Pareto-stable Lévy process that estimates the aggregate claims process. Numerical results are used to illustrate how to price reinsurance layers over a retention value.

- "The 1/*n* pension investment puzzle," by Heath Windcliff and Phelim Boyle investigates the so-called 1/*n* investment puzzle, which has been observed in defined contribution plans. The authors argue that the equal division of some participants' contributions among available asset classes is perhaps more sophisticated than it appears. The paper demonstrates that when accounting for estimation errors, the 1/*n* rule has some benefits in terms of robustness. Demonstrations of these advantages are done through the use of numerical experiments.

- Richard J. Verrall, in "A Bayesian Generalized Linear Model for the Bornhuetter-Ferguson Method of Claims Reserving," demonstrates how Bayesian models within the structure of generalized linear models are applicable to claims reserving. By identifying the relationship between the Bornhuetter-Ferguson method and the generalized linear models to claims reserving, the paper identifies the advantages of these methods using a Bayesian approach.

- Modern valuation methods in financial economics are applied to the models found in the traditional textbooks of actuarial mathematics and the theory of interest in J. F. Carrière's, "Martingale Valuation of Cash Flows for Insurance and Interest Models." Also, an optimal repayment analysis of common loan arrangement shows that the book and market interest rates need to be equivalent. The paper also evaluates actuarial theory in terms of its potential to enhance understanding of financial economics and vice versa.

The *NAAJ* editorial staff encourages our readers to pick up their copy of the July 2004 issue and uncover the exceptional research within. If you are interested in any of these articles, we invite you to submit a discussion for publication consideration in a future issue. Please contact Kimberly J. Wargin, editorial assistant, at *kwargin@soa.org* for a copy of the article.

Taiwan delegates visit the windy city

A delegation of insurance executives, regulators and actuaries from the Republic of China toured the United States to study insurance regulation and actuarial practice and professionalism in April.

They visited Chicago, Kansas City and New York to meet with representatives of the National Association of Insurance Commissioners, the American Academy of Actuaries (AAA) and the Society of Actuaries (SOA). SOA Vice President Shirley Shao of the Prudential Insurance Company of America coordinated the arrangements.

The visitors were Lih-Jue Shih and Li-Chun Chen from the Ministry of Finance, Jacob Liang and Chih-Hung Chang from the Insurance Institute and Yu-Hwa Wang and Shih-Nin Low from the Nan Shan Life Insurance Company.

Larry Gorski of Claire Thinking hosted the delegation on day one of their visit at the SOA's office in Schaumburg. They reviewed the Standard Valuation Law, Life Risk Based Capital (RBC) and the role the professional actuarial bodies play in developing the U.S. regulatory framework.

The delegation participated in a practitioners' forum in downtown Chicago on day two. The U.S. practitioners included Errol Cramer (Allstate Life), Jay Jaffe (Actuarial Enterprises), Paul Hekman (PolySystems), Tom Herget (PolySystems), Cheryl Krueger (CNA), Dan Kunesh (Tillinghast), Don Maves (PolySystems), Bob Meilander (Northwestern Mutual), Ted Trenton (State Farm), Vincent Tsang (PolySystems) and Lone Yee (State Farm).

The delegation, after describing the current Taiwanese insurance market, expressed specific interest in a.) the interactions among regulators, the SOA and the AAA, b.) regulations for participating business, c.) reserving for GMDB, d.) RBC requirements, e.) product filing and approval processes, f.) auditing and g.) electronic data-warehousing.

Although battling jet lag, the group enjoyed dinner with local members of the Chinese Actuarial Club and left for Kansas (and New York, respectively) with a good grasp of contemporary U.S. regulatory and company practices.

To create an effective regulatory apparatus for the growing Taiwanese insurance market, the U.S. actuaries recommended that the delegation:

- Promote the actuarial profession as a highly respected and responsible profession.
- Set appropriate qualification standards for appointed actuaries addressing regulatory requirements such as the actuarial opinion and memorandum.
- Get to know senior management of the companies.
- Focus on risk management.

"The delegates have a stiff challenge ahead, but great progress was made on many levels," said Herget, SOA Board member. "SOA members helped them take a big step towards designing a sound and viable regulatory system. The members also felt that the bonds of personal friendship and professional respect that were established have strengthened the mutual understanding of each other's practices and challenges."

More details about the visit are available on the SOA Web site.

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promises. The company was once committed to providing ample pensions arising from defined benefit plan formulas, but now top management has changed its mind. No wonder the old timers are angry!

A profession is given special privileges by society in exchange for our serving the public interest (among other things). This is enshrined in the Number One Precept of our Code of Professional Conduct. Since our most important public is (I devoutly hope) the beneficiaries of the financial security programs which we advise and serve, we need to be especially sympathetic to their situation. Helping top management improve earnings by cutting long-term employees out of a chunk of pension they were told they could plan on may be necessary, for competitive reasons, but it is hardly something to be proud of. We would do better to try to find feasible ways for the old timers to retain their defined plan benefits.

Linden N. Cole, FSA
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Alan Parikh comments

Mr. Cole's perspective is an important one, and I encourage pension actuaries to give it careful consideration.

Alan Parikh
Author of the April editorial, "Overruled"
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Thanks Alan ...

I want to thank Alan Parikh for his editorial in April, and comment on his statement: "Sometimes, rules work in ways nobody expects. Pension law presents an object lesson in how

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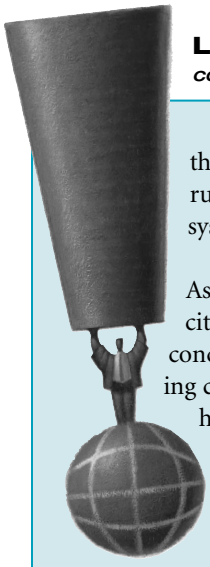

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the gradual accretion of rules can threaten the system itself."

As a pension actuary and a citizen, I have always been concerned both about serving clients well and about how participants would fare.

Some examples have caused me to wonder in retrospect about what seemed best at the time. After the Tax Reform Act of 1986, companies had major challenges in dealing with new nondiscrimination rules for health benefit plans (Section 89). Deadlines loomed and regulations were incomplete or nonexistent. My view was that it was best to do things early and plan based on our best knowledge. In retrospect, that turned out to be the opposite of the truth. Section 89 was repealed and the people who spent money and effort on compliance were losers compared to those who waited until the last minute or took the risk. The Social Security integration regulations for pensions kept changing as well, and again the planners and early compliers often ended up the losers. Some of my clients would have been better off if we had waited rather than planned.

As a younger actuary, I thought that conservative funding was very desirable, and would leave a margin for future plan improvements and to provide a cushion for participants. It then turned out that companies could terminate plans and recapture the surplus, so that in some cases, companies were taken over in unfriendly takeovers, the plans terminated and the pension surplus was used to help finance the takeover. Again, things turned out not what they seemed. Changes in plan termination rules since then have largely solved this problem.

As a younger actuary, I also believed that providing very good benefits was very desirable and that this would promote retirement security. I am a stronger believer in a good retirement system. I later learned that if companies were saddled with high benefits costs, that they might go out of business, or many employees could lose their jobs. Many of the companies that were large and seemed very successful when I started my career are no longer in business. For example, mainframe computers were becoming important in the 1960s when I was starting out. Yet today, most of the then-major manufacturers of mainframes are gone. Examples can be found in many businesses. The lesson I have learned here is that it is better to have a competitive and successful company and do the best we can for employees than to maintain a cost structure that is not affordable. The price of a cost structure that is not affordable is that everybody loses—the shareholders and the employees.

Lest anyone think I am opposed to regulation, I learned another lesson along the way. The world has too many dishonest people, and if you don't regulate the places where the money is, they will find it. The Saving and Loan crisis taught me that.

So, I want to encourage us to think about appropriately balanced regulation—not too complex and onerous, but protecting people. And I also want to encourage us to think about the need for flexibility and the fact that the first condition for security from employer plans is that the organizations need to do well.

Alan, thank you for raising interesting issues.

Anna Rappaport, FSA, MAAA, EA, FCA
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In memory of Jack Moorhead

Thank you for the full-page tribute to Jack Moorhead in the April issue of *The Actuary*. The man was truly an inspiration, an actuarial legend.

Thinking back, we were also given hints of his deep thoughts and emotions about weighty world issues. For example, as editor of *The Actuary* in 1982, he called for actuaries to pay attention to whether or not this world would survive into the next generation—and to discuss the then raging controversial issue of whether the United States should pledge not to be the first to use nuclear weapons.

In response, I wrote him to describe a conversation I'd had with my two young sons about nuclear war. He replied, "My thanks for the fine description of a family conversation that would qualify as a parable, and may indeed be recounted if actuaries gather next fall to talk about no first use ..."

It was a joy to hear him speak and to read his writings. Today, I'd wager, he'd be calling for a discussion of the new—and dangerous—doctrine of preemptive war.

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Retirement

Retirement Risk Survey and Retirement Plan Preferences Survey

Greenwald & Associates have completed two research surveys that examine attitudes and preferences concerning employer-sponsored retirement plans and post-retirement needs and risks.

The first survey is a follow-up to the 2001 Retirement Risk Survey that evaluated retired and near retired person's attitudes and perceptions towards post-retirement risks. The follow-up report offers a comparison of 2001 and 2003 survey results as well as addressing additional areas including the process of retirement.

The second report presents the results of a survey assessing worker and retiree preferences for various types of employer-sponsored retirement plans and features.

Additionally, in conjunction with the release of both survey results, the SOA and American Academy of Actuaries (AAA) co-sponsored a very well attended Congressional Staff Briefing presenting key findings of the surveys on February 20, 2004.

The full reports and key findings reports for both surveys can be found on the SOA Web site at: *http://www.soa.org/ccm/content/areas-of-practice/special-interest-sections/areas-of-expertise/post-retirement/.*

To view information on the Briefing, please visit the AAA Web site at: *http://www.actuary.org/briefings/retire_feb04.htm.*

2003 SOA Pension Plan Turnover Study

Jed Frees of the University of Wisconsin has completed the 2003 SOA Pension Plan Turnover Study. The study has produced new turnover (termination and retirement) tables for the actuarial valuation of pension plans. The study, overseen by the SOA's Non-Mortality Decrement Task Force, details the analysis of the data and methods used to develop the tables. A companion summary report to the full study, written by Evan Inglis and the Task Force, gives practical guidance on the usage and interpretation of the tables. In addition, a report previously released describes the database used to build the tables and can be used as a reference and informational tool on the underlying characteristics of the data.

To review all three reports please visit the SOA Web site at: *http://www.soa.org/ccm/content/research-publications/research-projects/2003-soa-pension/.*

Health

New study explores individual major medical claims by policy duration

As a result of the Health Section's 2003 open request for research proposals process, the SOA has signed a contract with Leigh Wachenheim of Milliman USA for the project, "Analysis of Claims by Policy Duration for Individual Insurance Major Medical Insurance." The study will analyze the effect of underwriting wear-off and cumulative anti-selection by policy duration on individual major medical claim costs.

Life

Analysis of Product Guarantees Project Update

A contract has been signed with Victoria Pickering and John Glynn of Carstens, Glynn & Pickering to complete the project, "Analysis of Product Guarantees." The Individual Life and Annuity Product Development Section and The Committee on Finance Research are funding this project. The study will examine individual life and annuity product guarantee features, their associated risks, the methodologies used to analyze, quantify and manage these risks and their impact on policyholder behavior.

Living To 100 and Beyond '05 Symposium abstracts selected

Planning is well underway for the next Living to 100 and Beyond: Survival at Advanced Ages Symposium to be held January 12-14, 2005 in Orlando, Florida. Almost 40 abstracts were received in response to the Call For Papers from authors located around the world including Canada, China, Germany, France, Mexico, India, Japan, the Philippines, Switzerland, the United Kingdom and the United States. The organizing committee recently met and selected the papers to be presented for the international symposium which focus on the following topics:

- Implications of an aging population for social, financial, health care and retirement systems;
- Statistical techniques for the modeling, projecting and analysis of advanced-age mortality data;
- Theoretical and practical models of advanced-age mortality data; and
- Evaluation of existing data sources.

A preliminary program with the abstracts of the papers to be presented and registration information will be coming soon to the SOA Web site. For more information regarding this research endeavor, please e-mail *livingto100@soa.org.*

Ph.D. grant recipients announced

The CAS/SOA Ph.D. Grants program was instituted to encourage graduate students to complete research in topics related to actuarial science and to pursue an academic career in North America upon completion of the Ph.D. degree program. Grants, awarded on the basis of individual merit, are renewable up to two times upon evidence of satisfactory progress and available funds.

As a result of the competition for the 2004–2005 academic year, the Ph.D. Grants Task Force awarded three initial grants and two renewal grants, and congratulates all the recipients.

Initial grants were rewarded to:

- Hyun T. Kim, University of Waterloo, "Measuring Dependent Risks Towards Required Capital: Search for a New RBC Model"
- Yi Lu, Concordia University, Montreal, Quebec, "On Non-homogeneous Poisson Processes and Their Applications in Risk Theory"
- Amy Orendi, Case Western Reserve University, "The Use of Subjective Probabilities in Determining Whether the Mortality Penalty of Obesity is Understood"

Renewal grants were awarded to:

- Patrice Gaillardetz, University of Toronto, "Equity-linked Annuities and Insurances"
- Bonnie-Jeanne MacDonald, Heriot-Watt University, "Risks Inherent in Defined Contribution Pension Plans"

Call for papers

The Scientific Committee invites authors to submit papers for the 14th International AFIR Colloquium to be held in Boston, Massachusetts November 7-10, 2004. Information can be found at *http://www.afir2004.info/*. The Colloquium is co-located with the SOA/CIA Investment Actuary Symposium. Conference delegates share general sessions as well as networking opportunities, and can attend Investment Symposium sessions, if they wish.

Instructions and guidelines for authors

Topics and originality

- The Scientific Committee welcomes all papers on subjects of investment, finance and risk management. Related topics that are of interest to the international actuarial profession are also appreciated.
- Papers submitted are held to contain original unpublished work, attacking theoretical and/or applied problems related to these subjects.
- A scientific paper may contain (some of) the following elements:
  - Introduction
  - Statement of the problem or research question
  - Overview of literature or methods available
  - Outline of the research method
  - Model definitions and model analysis
  - Practical calculations and results
  - Numerical illustrations of the results
  - Summary of the results, conclusions
  - Questions for further research

Formal procedure

- Scientific papers for the AFIR Colloquium must be submitted by July 1, 2004 in their final form. All decisions by the Scientific Committee regarding acceptance or rejection will be final. There will be no opportunities for revision by the author.
- Papers must be typewritten on one-sided paper. Please include also an electronic copy of the paper, preferably in a PDF format, with the file name and format clearly stated.
- The accepted papers will appear on the AFIR Web site in a downloadable version, as well as in the (hard copy) conference proceedings. After the colloquium, authors are free to submit the paper for publication elsewhere.
- Submission to the ASTIN (Actuarial Studies in Non-life insurance)Bulletin is optional, acceptance for the AFIR colloquium does not imply acceptance for the ASTIN Bulletin.
- The authors of accepted papers are invited to present their paper in a topic session.

Layout

- Papers should be written in English or in French.
- Papers must be between five and 30 pages in length. These page limits includegraphs, tables, appendices, endnotes and bibliographies.
- Notes to text should be endnotes rather than footnotes.
- The first page of the paper should include the title, details of author(s) including name, professional affiliation, address and telephone/fax/e-mail numbers, an abstract in either English or French and keywords. The font for the title should be bold 14 pt. Times New Roman.
- The following shows the preferred format for the first page:
  - Paper title
  - Surname first name
  - Organization
  - Address
  - Telephone: including country + area code
  - Fax: including country + area code
  - E-mail
  - Abstract/resume
  - Keywords

All editing styles should preferably be in the same style as the *ASTIN Bulletin*, and will be clear from checking a recent issue of this journal or download the guidelines for the *ASTIN Bulletin.* Please do not submit papers or abstracts to the *ASTIN Bulletin* editors.

Please send your paper to:
AFIR 2004 Colloquium Secretariat
Julie Young
Society of Actuaries
475 N. Martingale, Suite 600
Schaumburg, IL 60173
e-mail: jyoung@soa.org

Research corner

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The SOA library retains copies of theses completed by grant recipients. Call 847.706.3575.

Deadline for 39th Actuarial Research Conference

A reminder the deadline for early registration for the 39th Actuarial Research Conference (ARC) is approaching quickly. The conference will be held August 5-7 at the University of Iowa, Iowa City, and provides an opportunity for academics and practitioners from around the world

to meet and discuss actuarial problems and solutions. The conference also provides a forum for discussion of general actuarial education issues, particularly as they affect universities. Presentations are made on all topics of interest to actuaries.

The early registration deadline is July 1, 2004 and the housing reservation deadline is July 5.

Additional information regarding the conference—including the registration form—is available on the conference Web

site at *http://www.uiowa.edu/ ~confinst/ production/actuarial/index.htm*.For questions on program information, please contact Jim Broffit at the University of Iowa at *james-broffit@uiowa.edu.* Questions regarding registration, fees or accommodations should be directed to Kelly Flinn at *Kelly-flinn@uiowa.edu.*