The Newsletter of the Society of Actuaries
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JUNE 1993

# THE Actuary

## Canada's emerging health care system

by Shannon Patershuk

Health care in Canada is emerging as a different system from that of the early 1980s. The principles embodied in the Canada Health Act of 1984 — universality, comprehensiveness, portability, accessibility, publicly funded administration — remain intact. However, refinement of these principles such as reasonable access has occurred as budgets come under tighter control.

The system has evolved from the first provincially funded hospital system in Saskatchewan before 1950 to an interlocking set of ten provincial and two territorial health insurance schemes today. These schemes cover hospital, diagnostic, and medical services, plus provincial coverage supplemental to the Canada Health Act, such as subsidized or free drug coverage for seniors. Provinces are required to provide services defined under the Canada Health Act, and they determine the allocation of resources and services.

### Actuarial input

Until recently, the change in health care has evolved at a steady pace. Recent emphasis on reducing federal and provincial deficits, however, has sparked more rapid change.

What contributions can the actuarial profession make to the changing cost and design of the public health care system? The Canadian Institute of Actuaries (CIA) has set up a task force to address relevant financing issues. Its scope includes examining current costs, projecting future trends in costs, developing options to deal with

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### In the midst of transition

## Reform and re-reform

by Janet M. Carstens

I recently moderated a seminar on health care reform at the Society of Actuaries meeting in San Diego. To prepare for that seminar and to complete my assignment for two task forces of the American Academy of Actuaries, I reviewed the literature on U.S. health care reform that had crossed my desk in the past few months. After two 16-hour days, I was tired, overwhelmed, and confused. I found myself wondering whether specific state proposals replaced proposals issued for the previous month or if they were additions to that state's previous month's legislation.


### State reform accelerates

Despite what happens on a national level, U.S. health care reform is moving at a very rapid pace. In many instances, state reform legislation is being re-reformed. What is contributing to this flurry of state activity?

The high cost of health insurance coverage and the many uninsured individuals provided the impetus for a serious political debate on health carereform. In the past few years, the

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**Guest Editor responsible for this issue**
Sam Gutterman, FSA



**Correspondence should be addressed**
*The Actuary*
P.O. Box 105006
Atlanta, GA 30348-5006



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Walter S. Rugland, President
Diane Wallace, Vice President
James F. Reiskytl, Secretary and Treasurer
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## Editorial

# Involvement of the actuary

by Sam Gutterman

One of the most important roles that an actuary plays is that of a problem solver. For us to be successful in that role, three elements must exist:

1) **The actuary becomes involved in problem identification and issue design early in the process.** This means overcoming any stereotypes of the actuary as only a technician. It means gaining recognition for the potential value of actuarial methods to quantify and manage risks on a broader level in the preliminary stages of business problem solving.
2) **The actuary has in-depth knowledge of the risks involved and of the business to which the risks apply.** An actuary's experience in interpreting large amounts of or inadequate data, predicting potential problems, and setting up comparison standards can be invaluable in helping fashion solutions and long-range perspectives.
3) **The actuary effectively communicates the suggested solution.** An actuary who can distill information into a concise, understandable form that not only presents a solution that can be translated into action, but also explains the thinking behind it, successfully performs a value-added service more likely to be called for again.

### How do we become more involved?

In both the public and private sectors, actuaries often have become involved only when invited and only in specialized areas in which our reputation has already been established. I believe we can overcome this inertia through increased proactive activity by the American Academy of Actuaries (AAA) and the Canadian Institute of Actuaries (CIA), as well as by individual initiative.

Actuaries' involvement in public policy may be slowly increasing, as demonstrated by recent activities in national health care outlined in Judy Bluder's article in this issue of *The Actuary*. This issue emphasizes health care issues, with major articles on the Canadian health care system, reform activity on the state level, community rating, and psychiatric disability.

As actuaries come forward in the spirit of President Walt Rugland's campaign, "Ask An Actuary," emerging issues in practice areas other than health lend themselves to actuarial input. One way to begin becoming involved is to personally contact an SOA Vice President in charge of that practice area or an appropriate Section Council chair with ideas of where more research, articles, or papers would be useful. The *1993 Yearbook* lists those leaders, and the *Directory* includes their addresses and phone numbers. I urge you to take action if you want to champion or actively participate in a particular issue through SOA activities.

Another tactic is to prove your usefulness in problems outside your traditional role and increase your visibility within your workplace by addressing practical business issues. You may need to aggressively pursue becoming a part of multi-functional teams being formed in your company.

### Involvement means broadening our perspectives

In our roles as advisors to carriers, providers, and purchasers of services, actuaries often are concerned only with the best method of allocating and projecting costs, without questioning whether those costs are too high, either at a micro or macro level. It is easy to accept that such public or business issues are outside the scope of actuarial science.

It is important, however, that we

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## What do you think?

*The Actuary* wants to print its readers' opinions on health care issues. How do you feel about the issues affecting the actuarial profession, society, and other players in what may be significant changes in our health care delivery/financing system? Please send your letter to the editor by July 1. An insert in the September issue will include your views.

# A look at community rating

by Alice Rosenblatt

In recent years, medical insurance rate-making in the United States has incorporated such factors as age, sex, industry, geography, historical claim experience, policy duration, health status, and plan design. Carriers have used these to match the best prices with the best risks and to help avoid adverse selection.

Recent state reform of the individual and small group health insurance market has prohibited or limited the value of some of these rate-making factors.

Questions arise as reform efforts continue to focus on increasing access and affordability of medical care. Should older or high-risk individuals (or employers with such employees) pay more for their health coverage? Should younger or lower-risk individuals subsidize others? Community rating has been one approach used to address these issues.

## finition and changes in community ing

Pure community rating can be defined as a system that recognizes only geography and plan design and overall experience of the "community." Community rating by class refines this approach by adding certain demographic characteristics, such as age and sex. Adjusted community rating refers to the addition of historical claim experience.

Many Blue Cross and Blue Shield plans were using pure community rating at a time when health care costs were much lower. As the market became more competitive and many insurance companies began to use risk classification, many Blues plans changed their rating practices to avoid adverse selection. Other Blues plans were unable to change their rating practices due to legislation. At the beginning of the HMO movement when it was important to be federally qualified, most HMOs also used community rating. Many HMOs itched from pure community to mmunity rating by class or adjusted community rating when allowed by federal qualification standards.

Most players in today's insurance market experience-rate employer groups with 50 or more employees. Many of these groups rely on some form of self-funding, which sometimes avoids certain carrier-related retention charges and permits an employer to avoid state mandated benefits and state premium taxes.

## Advantages and disadvantages of community rating

Your view of pure community rating is affected by how you feel about its effects on the allocation of health care costs across society and the incentives inherent in various rating methods affecting the level of these costs. The impact of community rating obviously varies widely among different population segments or groups, depending on their level of expected cost.

A significant advantage of pure community rating to an individual or small group is lack of a penalty (higher than average premium) for poor health status, high previous claims cost, or older age. In addition, compared to a risk classification employer-centered health system, incentives preventing job mobility may be reduced.

A disadvantage of community rating is that it increases cost for those who are better risks. On average, they subsidize the poorer financial risks. If medical insurance is not mandatory in a pure community rating system, these better risks may choose not to purchase insurance at all.

Many larger employers who are experience-rated or self-insured may resist joining a community pool for the following reasons:

- The cost of health care could increase for many employers whose experience has been better than the pool's experience. A reduced incentive for prevention of overuse of health care services may result.
- Some employers have invested in or promoted lifestyle programs, including smoking cessation, weight reduction, or exercise facilities. These employers expected to see their investments offset by reduced costs for medical insurance.
- An emphasis on cost control and accountability for a more efficiently run system may be more difficult if employers' costs do not directly reflect the cost of their own health care program. They often hold their insurance carriers or administrators (for self-funded plans) accountable for utilization review and accuracy of claim payment.

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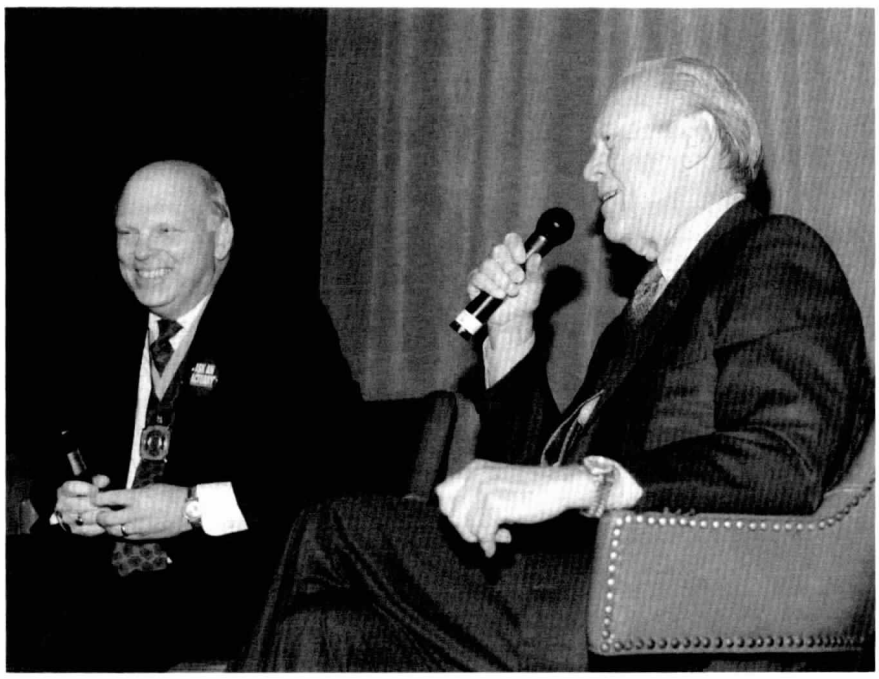


*Keynote speaker for the San Diego health and pension spring meeting, President Gerald Ford (right), exchanges quips with Society members and SOA President Walter Rugland (left) during the Q&A session.*

# Government doors opening to actuaries

by Judy Bluder
Assistant Staff Editor

The U.S. and Canadian governments now recognize that actuaries have valuable insights into public policy issues. This is especially evident with President Clinton's health care reforms.

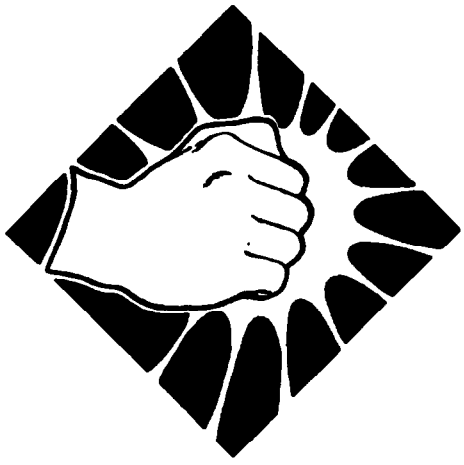
"It's important for actuaries to know that the government is coming to actuaries as professionals for help," said Guy King, chief actuary with the Health Care Financing Administration (HCFA).

### Actuaries given entry through health care reform

Howard Bolnick, chair of the American Academy of Actuaries (AAA) Health Practice Council; John Bertko, chair of the AAA Committee on Health and Welfare Plans; Bart Munson, chair of the AAA Committee on Health; and Guy King, with other staff from HCFA, including Sally Burner, supervisory actuary with HCFA, met for the first time in February with Ira Magaziner, President Clinton's senior adviser for policy development, and Ken Thorpe, a Health and Human Services official.

The first AAA project related to the task force's efforts analyzed the effect of moving from a mixed rating system of underwriting health insurance to a pure community rating system. Actuaries who analyzed the collected data were Greg Herrle, consulting actuary with Milliman & Robertson, Inc., and chairperson of the SOA Health Section Council; Gordon Trapnell, president of Actuarial Research Corporation; Alice Rosenblatt, senior vice president and chief actuary with Blue Cross/Blue Shield of Massachusetts; Tony Hammond, research actuary with the Health Insurance Association of America; Harry Sutton, senior vice president and chief actuary with RW Morey, Inc.; and Gerald Shea, assistant actuary with Blue Cross/Blue Shield Association. The resulting report was submitted to the Clinton Health Care Task Force, said King, a member of the Analytical Support Team and Finance Group.

"It was gratifying to me to see all these actuaries with different perspectives coming together to develop this



information on community rating," King said. "They all shared their data. It was an effort to get out the best product without any axes to grind."

At about the same time the Clinton administration began work on health care reform, Jean Wodarczyk, a partner at Coopers & Lybrand, was approached by a staff member from the Republican Senate Health Care Committee who wanted background information to build a health care proposal from the Republican side of the fence. "I described the practical implications of including Medicare in the national health care proposal," said Wodarczyk, a member of the SOA Committee on Health Benefit Systems Practice Advancement. "Because most in government have spent much of their careers on the inside, it is harder for them to realize what would happen if Medicare was shut down. We [actuaries] can give unbiased information so they can make good political decisions."

Another group integral to developing a national health care plan, the Cost Audit Group, chaired by Richard Ostuw, vice president with Towers Perrin, is reviewing the methodology and assumptions used in the cost estimates done by the Quantitative Analytical Working Group. Ostuw works with six other actuaries and one health care economist in the Cost Audit Group. "We hope our work will provide greater confidence in the cost estimates of the health care reform program, by which some policy decisions are influenced," Ostuw said.

### Actuaries cross ProPAC portal for first time

This year for the first time, actuaries were appointed as members of the Prospective Payment Assessment Commission (ProPAC). Robert J. Myers, former chief actuary and deputy commissioner of the Social Security Administration, and Jae Wittlich, senior vice president and chief operating officer-group benefits with CNA Insurance, will both serve three-year terms on ProPAC. The commission, consisting of several members representing all sides of health care, is responsible for advising Congress on Medicare policy and broader issues of effectiveness and quality of health care delivery in the United States.

Myers, a past president of the Society of Actuaries, was selected to serve on the commission because of his in-depth knowledge of Social Security and Medicare. Wittlich represents the payer side of the health insurance industry. Although neither were selected specifically to fill actuarial roles, both agree their actuarial skills will be useful.

"The government needs the skills actuaries bring to the table," Wittlich said. "There should be well reasoned approaches to many areas in government. ProPAC is just one area where our analytical skills can be used."

He said there are many interrelated issues in the health care arena that have a long lasting impact. "Too often, people want a quick fix and don't look at the overall long-term impact," Wittlich said. "That's where actuaries can come in."

"ProPAC's executive director and other directors of ProPAC recognize the benefit of our actuarial backgrounds," Myers said.

### More enter into projects

Two actuarial task forces of the AAA Health Practice Council produced reports in May that the Clinton task force used. One, chaired by Rosenblatt, examined the use of health risk adjustments, and another, chaired by Julia Philips of Milliman &

Robertson, looked at the cost and implications of alternative standard benefits packages, according to Gary Hendricks, director of government information and chief economist at the AAA.

"If rating reform goes along with national reform and the goal is for consumers to select a health plan based on medical and administrative efficiency rather than risk selection, than we will need the risk adjustment mechanism," said Rosenblatt.

The AAA and SOA also are providing actuarial expertise and data to Congress. They conducted a survey of premiums charged to small groups for the Congressional Research Service (CRS) and had a series of meetings to discuss the reports mentioned previously. Edwin C. Hustead, director of government consulting for Hay/Huggins, has assisted the CRS in analyzing national health care reform, the number and health care costs of the uninsureds, and the effect of community rating on employer premiums.

Actuaries individually and as members of the AAA have provided testimony for various Senate and health subcommittees. They are working on such topics as state small group health reform initiatives and transition issues related to changing the structure of the health care delivery system.

**Knocking on other doors**

Wodarczyk said that states aren't waiting for the federal government to "make up its mind" on health care. "Actuaries can help in the political process by providing high quality information [for these state governments]," she said.

In addition, a new Canadian Institute of Actuaries Task Force on Canadian Health Care Financing is examining this issue on behalf of the profession and may provide a report of its findings to the Canadian government.

"There is no end to how the profession can get involved in government," Bolnick said. "But we need to carefully separate politics from professional issues. We need to spend more time cultivating health policy makers to turn to actuaries for answers. They need to recognize that many of the issues they face are actuarial in nature."

# Work of the SFAS No. 106 Implementation Task Force

by Jean Wodarczyk and Ethan Kra

The public is relying on the actuarial profession to assess the liabilities associated with post-retirement benefits. The Society of Actuaries recognized that it could play an important role in bringing a variety of perspectives to the actuary practicing in this new discipline. Actuaries practicing in the SFAS No. 106 arena include those with experience in health care and pensions, large and small consulting practice, and insurance companies.

The Society's Statement of the Financial Accounting Standards Board (SFAS) No. 106 Implementation Task Force was formed to consider the needs of practicing actuaries, inform the appropriate standing committees of these needs, and prompt these committees toward quick resolution of any outstanding issues. This task force was designed to accomplish specific tasks in a short period.

**Response to Academy Standards of Practice**

The task force's first assignment was to respond to the Academy of Actuaries' proposed Standard of Practice for SFAS No. 106. The task force addressed the pragmatic aspects of the proposed standard and informed the Academy of implementation issues.

**Seminars**

Public demand is strong for high quality actuarial support of SFAS No. 106 practice compliance. This is a new practice area presenting special challenges to actuaries, and the task force identified the need for two seminars. The first seminar in February 1993 introduced the broad concepts of SFAS No. 106 compliance to actuaries new to the practice. The June seminar was for actuaries familiar with basic issues relating to SFAS No. 106 measurement and compliance. The June seminar devoted the first day to case studies for the practitioner who needed to expand his or her knowledge in specific areas. The second day addressed topics from a consulting viewpoint. Based on feedback from actuaries attending these seminars, additional seminars will be developed. It is anticipated that at least one seminar will be given each year for the next few years.

**Exam restructuring**

The task force next reviewed the SOA exam syllabus. Topics relevant to the SFAS No. 106 practice are scattered throughout pension and group topics. To complete a survey of all the relevant topics, a student would have to attain Fellowship in one practice area and sit for additional topics in another discipline. The task force is working with the Examination and Basic Education Committee to review this situation.

**Coordination between Academy and SOA committees**

The task force has linked with Academy committees to monitor the development of the FASB Q & A document and assure the tools will be available to support the requirements of SFAS No. 106. Other developments from the Academy will be monitored. Similarly, the task force liaisons with the Retirement Systems and Health Benefits Systems practice area committees and their various task forces will assure that additional tools be developed as appropriate. Research efforts of the various committees currently are being investigated and coordinated.

**Ongoing needs of practicing actuaries**

This is a new, exciting, and challenging area for the actuary. You are encouraged to contact a task force member with questions, professional needs, or ideas you would like to share. Members are listed in the *Directory* and include us as co-chairs, Bill Farquhar, Judy Latta, David Trindle, and David Wells.

**Jean Wodarczyk is partner, Coopers & Lybrand, Chicago. Ethan Kra is managing director with William M. Mercer, Inc., New York.**

# SECTION CORNER

*This column reports on activities and newsletters of all special interest Sections on a rotating basis. This month covers the Financial Reporting and Education and Research Sections.*

**Financial Reporting Section**
Membership in this Section stands at 3,045.

Lead articles in the March 1993 issue of *The Financial Reporter* include "A Demutualization Primer: Part 1. A Management Perspective" by Bruce Darling and "A Market Value Balance Sheet: Why and How" by Matthew C. Modisett. An article by Douglas C. Doll on "LHATF Report on Life Insurance and Annuity Projects" also ran in that issue.

The Section sponsored a seminar, "Postmortem on 1992 Valuation Actuary Opinion — Looking Forward to 1993," on June 3-4 in Florida.

**Education and Research Section**
This Section now has 708 members. Arnold Shapiro is this Section Council's chair-elect beginning in October 1993.

The March 1993 issue of this Section's newsletter, *Expanding Horizons*, edited by Bruce L. Jones, covers a full range of topics. Esther Portnoy's article on "ASA Requirements to Increase" leads off the issue. Other articles include "The CIA's Continuing Professional Development Standards" by Peter Gorham, "Actuarial Science at the University of Montreal" by Louis Doray, "Master's Degree Programs in Actuarial Science" by Howard Young, and an article by Warren Luckner discussing the "Actuarial Science Program at Nankai University, Tianjin, People's Republic of China."An article on the highlights of the Research Section's last council meeting in February discusses a budget item approved to create semiannual reports on the economics of entry-level actuarial employment.

The Section is planning a breakfast at the SOA annual meeting in New York on October 19. It also is sponsoring at that meeting a session on research papers for FSA credit, a teaching session on graduation, and a panel discussion jointly sponsored with the International Section on actuarial programs in other countries.

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# Psychiatric disability claims: problem or opportunity?

by Richard Lewis

In the past decade, psychiatric disabilities have emerged as one of the fastest growing, most expensive, and most difficult categories of disability claims. Group insurers, individual disability insurers, workers compensation insurers, and self-insured employers all struggle with the management of such cases. The Social Security Disability Insurance program has experienced an increase in mental/nervous entitlements from under 3% to more than 15% of new cases since the early 1980s.

**What is the cause of increase?**
Three factors cause this situation:

1) Medical/social acceptance — Diagnosis, treatment, and medical recognition of psychiatric illnesses, coupled with societal acceptance of such illnesses, have increased in the past 20 years. In the 1950s or 1960s, it was unusual for an individual to claim psychiatric illness except in the most severe circumstances. Often, there was resistance from medical practitioners. Today such diagnoses and claims are common and accepted.
2) Economic/job stress — During the past 10 years, a transformation has occurred in the work place. Job stress from increased productivity demands, new information technology, and rapid decision making is endemic. Traditional worker/company relationships and loyalties have been fractured. This fosters greater willingness for employees to file disability claims.
3) Ineffective psychiatric disability claim management — Psychiatric disability claims are difficult to evaluate and manage. Issues include organic versus inorganic diagnoses, the subjective measurement of functional loss, and difficulty in obtaining clear and useful input from treating specialists. A lack of medical and psychiatric rehabilitative expertise from insurers, administrators, and employers may have much impact on claim continuance.

In addition, limits on psychiatric benefits in employers' health plans may be a contributing factor. Such limitations can cause individuals to defer treatment or to be undertreated. This can result in periods of intermittent short-term disability that conclude in a more severe episode of serious longer-term disability.

**Rehabilitative model key to effective management**
Given these realities, what can an insurer do to more effectively manage psychiatric disabilities and improve experience from such claims?

To achieve return-to-work and claim closure consistently, the claims management function must operate on the basis of a rehabilitative model for mental illness. Management also must have staff resources able to effectively operate within the model's requirements.

The Boston University Center for Psychiatric Rehabilitation developed and uses the rehabilitation model on the next page. It provides an excellent framework for psychiatric disability case management.

The model considers three different stages of mental illness: impairment, disability, and disadvantage. Historically, our efforts in claims management have been too focused on the impairment stage, where much of the decision-making rests on determining diagnosis. This can be very difficult in psychiatric claims and requires specialized claims management resources and training. The underlying issues of restrictions or inability to perform work activities often are not addressed.

With physical disabilities, such functional limitations usually deal with limited or restricted ability to perform observable physical functions. Psychiatric illnesses impact behavioral, social, and cognitive abilities. Examples include social adjustment skills, ability to read and follow instructions, ability to deal with work process changes, ability to participate effectively in work teams, and adjustment to workplace stress.

The third stage of the model also

## The Rehabilitation Model For Severe Mental Illness

| | Stages | | |
|---|---|---|---|
| | **Impairment** | **Disability** | **Disadvantage** |
| **Definitions** | Any loss or abnormality of psychological, physiological, or anatomical structure or function | Any restriction or lack of ability to perform an activity and/or role in the manner or within the range considered normal for a human being (resulting from an impairment) | A lack of opportunity for a given individual that limits or prevents the fulfillment of a role that is normal (depending on age, sex, social, or cultural factors) for that individual (resulting from an impairment and/or a disability) |
| **Examples** | Hallucinations, delusions, depression | Lack of work adjustment skills, social skills, or ADL* skills, which restrict one's residential, educational, vocational, and social roles | Discrimination and poverty, which contribute to unemployment and homelessness |

*Source: W.A. Anthony, M.D. Cohen, and M.D. Farkas,* Psychiatric Rehabilitation *(Boston: Boston University, Center for Psychiatric Rehabilitation, 1990) *ADL is activities of daily living.*

has a direct bearing on claim costs. A disadvantage in a disability insurance and benefits environment usually involves barriers to return-to-work. In the United States, with the advent of the Americans with Disability Act (ADA), such barriers must be removed. Returning to work, even where medically possible, can be very difficult. In such instances, it is often easier for the employer and the employee to continue the claim. This obviously worsens claim costs and claim duration.

### Resources needed to apply model

To follow this model and focus not only on the impairment but also on functional loss and effective return-to-work programs, an insurer or administrator must have appropriate technical resources, tools, and procedures. Claims personnel must have sound training in evaluating psychiatric disabilities, be provided specialized tools such as diagnostic specific questionnaires and appropriate reference materials, and have access to specialized medical technical resources such as psychiatrists, psychiatric nurses, or psychologists. Templates that provide a consistent approach also are helpful for dealing with specific types of psychiatric disabilities.

### Job accommodation programs important

The importance of return-to-work in limiting costs and providing rehabilitation is extremely important in psychiatric disability cases. While research on the value and impact of work on recovery is limited, it is clearly being demonstrated at Boston University. Its program of psychiatric rehabilitation has focused primarily on individuals with severe disabilities and very limited or no work experience. Nevertheless, the university's success rate has been remarkable in enabling people to enter and successfully participate in a working environment.

Often the problem from a claims management perspective is dealing effectively with the employer, who may not understand or sympathize with the individual's problems. The employer may not be flexible in modifying the work environment to allow the person to return to work successfully. Again, with the ADA, such barriers and attitudes must be addressed, if for no other reason than to deal with the potential liability employers face who do not offer reasonable accommodations when appropriate.

An enlightened insurer should take the lead in informing employers of their obligations and enabling them to develop cost-effective accommodation programs. Again, these accommodations deal with different issues than those of physical disabilities. Reasonable accommodations include schedule or job modification, exchange of secondary tasks among employees, modifications to the physical environment for employees who may have difficulty concentrating, and changes in interpersonal communication and work scheduling.

It is particularly incumbent on insurers whose contracts have time limits on psychiatric claim payments to work with their customers in job accommodation. A common provision in group LTD that limits benefits to 24 months for individuals unless they are institutionalized is almost certain to be a significant trigger point for reasonable accommodation requests. Because the insurance contract can trigger that event, insurers should warn the employer and give specific suggestions and technical assistance for reasonable accommodation.

For employers, the entire return-to-work philosophy and environment must be examined. Conflict exists between enlightened return-to-work programs and line management goals and objectives. Line managers often are driven by production requirements that they feel do not support part-time work or significant changes in job structure. An employer's challenge through communication, education, and appropriate incentives is to facilitate return-to-work and help all parties see it as a positive benefit of working at that organization.

While psychiatric disability is complex and challenging, it should not be viewed as a problem but as an opportunity. It is a large enough area of claims incidence that a significant improvement in average duration can have a major impact on the profitability of a disability product. We now have some evidence that psychiatric rehabilitation and case management work, so this area should be very fruitful in positive claim resolution. It should be possible to achieve a 10-20% improvement in the overall duration of such claims. To do so, however, administrators and insurers will have to invest in appropriate resources, training, new protocols and tools, and in more effective communications and cooperation with their customers.

**Richard Lewis, not a member of the SOA, is managing director, Health and Welfare, Price Waterhouse, Chicago.**

## Health care in Canada cont'd

costs, and actively participating in the public discussion of these issues.

Clarity of design is essential in projecting cost trends and suggesting alternatives. This is not easy because of the many stakeholders and decision makers in the system. This article discusses some of the areas that would benefit from actuarial quantification, risk analysis, and perspective.

### Accessibility

Reasonable access to medical and hospital services means an absence of barriers to essential services. Most Canadians have accepted some waiting time for non-essential services.

Most of the 10 Canadian provinces recently reviewed their health systems and published reports dating from 1987 through 1991. Common to these reviews was the recommendation to broaden the definition of health, shifting the emphasis from curative to preventive. Health outcomes are to receive more emphasis, because increased health care funding in the past few years has not improved life expectancies significantly nor improved other health indicators.

In contrast to more access to preventive health, Canadians perceive that access to full health services has been rationed. Non-essential services have been reduced.

Individuals who want to avoid waiting lines for high-tech treatment have selected U.S. providers, regardless of cost. Some clinics have been operating privately in Canada. Thus, access gradually has become a two-tier system, with the second tier accessed by those who can afford convenience and upgrades to basic services.

Actuarial skills could help in pricing the second tier to the public system, illustrating imbalances between the supply of services in Canada and the United States and projecting outcomes of various alternatives.

### Comprehensiveness

All medically necessary hospital and medical expenses must be provided for under the Canada Health Act. The public health care system in Canada expanded over the past 40 years to include hospitalization, diagnosis, medical services required under the Canada Health Act, and prescription drugs added by provincial governments because of public demand. The change to "deinsuring" reverses this trend to a shift toward the private sector, primarily for non-essential services.

Prescription drugs have become a major component of health care. More costs now are incurred for drugs than for physician services. Drugs increased from 9% to 14% of total health care from 1980 to 1990. Employers' drug plans have escalated in cost, adding to the shift in public to private expenditures.

Required actuarial analysis includes the effective change in comprehensiveness of coverage and projections of the resulting needs and consequences. Specifically, actuaries should review the limits of deinsuring allowed under the Canada Health Act and the associated cost savings.

### Publicly funded administration

Although the provinces have jurisdiction of health care, the federal government shares on a 50/50 basis the expenses of provincial health care for hospitalizations and medical services that meet the design principles in the Canada Health Act. Federal budget problems and increasing demand for health care resulted in caps on federal transfer payments and an increase, to about 30%, of provincial budgets spent on health care.

A drop in relative federal funding raises concern about provincial compliance with the principles in the Canada Health Act. The provincial burden and the increased access to health, as well as curative health care, creates the need to re-examine many public sector design decisions.

Use of actuarial costing methodology can improve decision making in critical financial situations. Long-term projections of health care associated with aging demographics and the magnitude of health care expenditures in the last year of life will enable future public decision making to be based on more relevant information. Decision makers need to understand the relationships among public funding, compensation to health care providers, plan design, utilization, and health care outcomes. A broader definition of health creates far more complex outcome measures than the traditional health care outcome measures, such as infant mortality rates and life expectancies.

Analyzing and understanding the components of significant cost variables are basic to the actuarial profession. Unfortunately, Canadian actuaries now have limited involvement with publicly funded administration. This situation may change.

### Universality

All provincial residents have coverage, regardless of employment, age, or ability to pay premiums. However, the emerging two-tier health delivery system appears to be inconsistent with this principle. Should public funds be used to pay for convenience and upgrades?

Internationally, many variations in health care systems result from similar principles. The Canada Health Act's basic principles, such as universality of essential service, must be recognized when comparing national systems. Actuarial scrutiny of how the principles affect benefit design would be beneficial.

### Portability

Portability of public coverage for individuals moving between provinces has not changed significantly. However, some health care coverage for travel to the United States has been deinsured. Residents now are covered outside Canada up to the amount paid in the home province. With increased global mobility, portability of health care coverage refinements is needed. Actuarial help in defining global portability could benefit all stakeholders.

### Conclusion

The rate of change in the Canadian health care system is now more revolutionary than evolutionary. For example, more than 50 hospitals in Saskatchewan were closed. The focus on the overall health of the community and more individual incentives creates more change. Resources have been reallocated accordingly. This expansion, however, coincides with budget cuts and creates a risk of reduced service.

It is time for the CIA to be proactive in supplying quantitative tools and to contribute to the public debate. Clear focus, vision, and appropriate decisions are necessary to prevent undermining the achievements in health care to date.

Actuarial involvement in public health care issues in both Canada and the United States must not only address emerging health care issues, it also must predict them. Participants in both systems claim there is enough money in their systems, and what is required is to use the existing resources appropriately. Actuarial skills can help confirm or dispute this claim.

**Shannon Patershuk is actuary and senior consultant with MLH+A, Inc., Edmonton, Alberta, Canada.**

# New SOA material addresses hot health topics

by Richard Bilisoly
SOA Education Actuary

If you would like to expand your actuarial expertise in the Health Systems practice area, then you may be interested in new syllabus material added to the Group Benefit Track courses in the spring and fall of 1993. Many topics included in these courses go beyond basic principles into "hot" practice areas. These areas include flexible benefits, managed care, continuing care retirement communities, long term care insurance, post-retirement life and health benefits (including SFAS 106), and national health policy. Following are new course readings.

**Course G-320 — Design and Distribution of Group Benefits**

- Chapters 1, 2, 3, 7, and 9 in the new book, *Group Insurance*, edited by William F. Bluhm (ACTEX 1992)
- Readings in recent volumes of the *Record of the Society of Actuaries (RSA)* — "Health Care Trends Update," *RSA* 16 No.1; "Brave New World of Health Care," *RSA* 17 No. 3A; "How Will Society Deliver Adequate Health Care to All?" *RSA* 17 No. 4A
- Study Note 320-45-93 — Creditor's Group Insurance Guideline Canada 1992

**Course G-420C — Group Financial Management and Regulation - Canada**

- Chapters 28, 30, 31, and 34 in *Group Insurance*

**Course G-421U — Group Financial Management and Regulation - U.S.**

- Chapters 10, 28, 30, 31, and 34 in *Group Insurance*

**Course G-422 — Group Insurance Pricing**

- Chapters 13, 14, 17, 18, 21, 22, 25, and 26 in *Group Insurance*
- *Actuarial Issues in the Fee for Service/Prepaid Medical Group* (1992) Sutton and Sorbo

**Course G-520 — Cost Containment/Managed Care for Health Benefits**

- Chapters 12 and 19 in *Group Insurance*
- Readings in recent *RSA*s — "Effect of Resource-Based RVS in Medicare on Private Health Insurance" and "What Employers Can Do To Reduce Medical Cost," *RSA* 17 No. 3A
- Chapters 9 and 10 in *Actuarial Issues in the Fee for Service/Prepaid Medical Group* (Second Edition 1993) Sutton and Sorbo

**Course G-522 — Continuing Care Retirement Communities and Long Term Care Insurance**

- Actuarial Standard of Practice No. 18 — Long Term Care Insurance
- Readings in recent *RSA*s: "Financing of Long Term Care Costs: Government Proposals," *RSA* 18 No. 1B; "Long Term Care Insurable Events: Emerging Prominence of ADL Benefits," *RSA* 18 No. 1A
- 1991 Long Term Care Continuance Tables - E. P. Barnhart, *Proceedings of Conference of Consulting Actuaries* 1991
- Study Note 522-33-93 Interim Report (Revised) to NAIC Life and Health Actuarial Task Force from SOA Long Term Care Valuation Task Force
- Study Note 522-32-93 Group Long Term Care Topics

**Course G-523 — Post Retirement Life and Health Benefits**

- Study Note 523-24-93 Retiree Life and Health Plan Funding Vehicles
- Study Note 523-26-93 Actuarial Methods for Retiree Life and Health Plans
- "Postretirement Medical" *RSA* 18 No. 1B
- Study Note 523-31-93 Retiree Medical Liabilities: Problems and Solutions

**Course G-525 — Flexible Benefit Plans - U.S.**

- *Fundamentals of Flexible Compensation* (Second Edition 1992) Gifford and Seltz

Please call the SOA Study Notes Department, 708/706-3525, to order study notes. Please call Joanne Temperly, 708/706-3500, to order other material.

## In memoriam

Wesley W. Fulford ASA 1960, FIA 1953

Humbert J. Graziadei ASA 1937

## Community rating cont'd

**The instability of community rating in a mixed premium competitive market**

In many states, a mix of rating practices co-exist, with some carriers using pure community rating, while others use all or most of the rating variables. This may create an adverse selection spiral for carriers using pure community rating. The better risks can find coverage at rates lower than the pure community rate with carriers that use rates reflecting age and health status. The remaining community risk pool then deteriorates in health status and age, which drives up the pure community rate, forcing still more of the better risks to leave the community pool.

Even in the states that have prohibited or limited some of these rating practices, a significant transition issue exists, because the risk pools of each existing carrier have a different average claim cost.

Some carriers have been using medical underwriting to select the best risks and using aggressive rating to compete for these best risks. They can end up with the lowest price if forced to do pure community-rating, even if these carriers are the least efficient in medical management.

**Methods of overcoming the instability**

Methods using risk adjustment have been developed to avoid the adverse selection situation described. Reinsurance mechanisms have been instituted in various states over the past several years to spread the cost of high risk individuals. Health care cost is heavily influenced by the few high amount claimants. A recent study by a Blues' plan of insured individuals found that 4% of claimants generated 48% of claim costs.

Recently introduced legislation in New York includes a process by which the relative degree of risk in various blocks of business results in a system of monetary transfers among carriers. In New York, the risk adjustment transfer uses differences in the age/sex distribution in the various carriers' risk pools to determine if the particular carrier will make or receive payment from the pool. The carrier with younger insureds generally would make payment to the carriers with older insureds. In addition, a catastrophic reinsurance system pays predetermined amounts for particular treatments, such as organ transplants.

*continued on page 15 column 3*

## Reform cont'd

National Association of Insurance Commissioners (NAIC) adopted model rating and access legislation for health insurance coverage to control rating practices and address the uninsured problem. The model regulation affects the coverage of individuals and small employer groups and limits allowable rating variables, rate variations, and underwriting practices used by health insurers. The model also incorporates a reinsurance mechanism to help level the playing field for insurers who may experience a disproportionate amount of high-risk insureds due to the legislation.

### State legislation varies

As states began to adopt legislation, individuals and special interest groups provided an overwhelming amount of information on their version of the causes of the health care crisis and the correct approach to reform.

States assimilated some of this information along with the model legislation. As a result, we have at least 24 states with health care reform legislation and almost as many variations. Some states chose to adopt the NAIC model with slight modifications to allowable rating limits, applicable employer group size, allowable case characteristics, or reinsurance provisions. Some states are requiring carriers to guarantee issue a minimum benefit package to all applicants.

Other states have incorporated unique provisions for coverage and funding. For example:

- New York requires community rating for all individual and small group products and, beginning in 1994, requires products to satisfy an anticipated loss ratio of 75%.
- California allows liberal initial rate variations but grades the limitation to a more restricted level by July 1996. The state also has established voluntary purchasing pools for employer groups.
- Florida recently enacted a version of managed competition that establishes Community Health Purchasing Alliances in specific geographic territories to purchase managed health care coverage for employers and individuals. The plan also establishes accountable health partnerships that are required to enroll and provide health care services to all individuals, regardless of health status.
- Minnesota established integrated service networks to provide employers with the advantage of a large pool for insurance purchasing. The reform package will be financed with a tax on the gross revenues of health care professionals, hospitals, and managed care organizations.
- Oregon enacted legislation that prioritized coverage of health care services for those eligible for Medicaid.

### Too early to assess results

As states continue to devise methods to reform their health care systems, the inevitable question is, "Which method works best?" One advantage of having 50 states with 50 varying forms of reform legislation is that it allows concurrent evaluation of alternate approaches. However, state legislation often addresses state-specific circumstances and the strength of special interest groups within the state. What may work best in one state may not work as well in others.

Very few states have had health care reform legislation in place for a significant length of time. For those that have, results are not yet credible. Many states barely had one type of health care reform implemented before another proposal was on the table. It may be a long time before any reliable results can be tabulated.

### Back to the basic objectives of reform

In the midst of this flurry of activity, it is worth revisiting the initial premises for reform: affordability and accessibility. Are states really implementing reform legislation that will affect health care costs and decrease the number of uninsured?

For example:

- Health purchasing cooperatives and integrated service networks have been promoted as a way for small employer groups to purchase health insurance coverage with the purchasing power of large employer groups. Since much current activity seems to be directed toward allowing or requiring these entities to continue to pay traditional brokerage commissions, will they accomplish this objective?
- Much of the current reform legislation encourages establishing new types of relationships with providers and emphasizes the importance of delivering quality care. Do we continue to train specialists when we need primary care physicians, or do we encourage the use of nurse practitioners to deliver primary care services? Should the insurance industry have a voice in addressing these societal issues?
- Most small employers who do not provide health insurance coverage to their employees cite the high cost of insurance as the reason. Proposals that restrict a carrier's ability to vary rates among small groups imply that premium rates for lower cost employer groups will have to increase to cover the cost of insurance coverage for the higher cost groups. Without an employer mandate or some type of tax subsidy, will more small employers/employees find the cost of insurance coverage unaffordable? Are we providing access at the expense of affordability?
- One of the proposals to control health care costs is to reduce administrative expenses. However, variation in state reform legislation increases the administrative expenses for carriers operating in many states. The use of reinsurance mechanisms in some states also may increase administrative expense, because carriers are encouraged to underwrite individuals to determine which risks to cede to the reinsurance pool. Reinsurance mechanisms also can result in double adjudication of claims, increasing administrative expense. Even if these increases are minor, are they consistent with the intent of reform?
- Minimum benefit plans are being promoted as a way to provide access to coverage at an affordable price. To make costs affordable, benefits must be carved out to where some may find the coverage unattractive. Some claim that if the minimum benefit plan has too many benefits carved out, it may adversely impact health. Since low option benefit plans have routinely been available, does the imposition of state-mandated standardized minimum benefit plans really address affordability issues?

Our challenge in the midst of reform is to address these and other key issues to ensure that we are developing viable financing vehicles for cost-effective health care delivery.

**Janet M. Carstens is a health care consultant in the Minneapolis office of Tillinghast.**

# SOA starts health claims database project

by John Bertko

The Health Section, working with Society of Actuaries' staff, has announced the selection of a research team for a new catastrophic claims database project. Kyle Grazier, Ph.D., of Cornell University, working with health actuary Dennis Daugherty of Coopers & Lybrand, won a competitive bid to collect and analyze large claims (greater than $25,000) data from contributing health carriers. Grazier has a great deal of experience with analysis of employer claims data and has completed related studies using private carrier data to study the differences between pre- and post-retirement claims experience of employees and retirees. The SOA proposal evaluation task force regarded the combination of actuarial experience with academic rigor as a unique opportunity to contribute to the actuarial profession's resources.

The project will consist of several phases, including collecting data from the contributing companies, merging the data into a single uniform database, and analyzing results. Results may include an inter-company continuance table and resources to answer questions on health care reform reinsurance issues.

Mark Doherty, SOA director of research, reports that more than 30 companies have responded positively to a preliminary request to supply data for this project. These companies originally were solicited through the efforts of the Health Section Council and meeting announcements. Additional companies (insurance companies, Blue Cross/Blue Shield organizations, HMOs, and self-insureds) are encouraged to join the project. Those interested should contact Mark Doherty at the Society office for more information.

**John Bertko is principal with Coopers & Lybrand, San Francisco.**

## The complete actuary

# Anyone ready for a full-day seminar?

Society members consistently have attended management topics offered at spring and annual meetings. Many of the comments the Committee on Management and Personal Development receive indicate that topics may not have been given enough time in the normal meeting format to do them justice. We agree and are planning to take the big step into the world of full-day seminars.

The committee needs to know what topics are of enough interest to attract attendees. This little survey is easy, non-binding and, best of all, if you return it completed, you will be entered in the drawing for a fee waiver for the seminar.

### Survey of Management Topics for a One-Day Seminar

- ☐ Team Building
- ☐ Effective Writing Skills
- ☐ Re-engineering
- ☐ Management 101 for New FSAs
- ☐ Effective Presentations
- ☐ Project Management
- ☐ Performance Assessment, Feedback, and Coaching
- ☐ Planning and Goal Setting
- ☐ Other _____

Would you be interested in attending a one-day seminar? **Yes/No**

Should a seminar be in conjunction with a spring or annual meeting? **Yes/No**

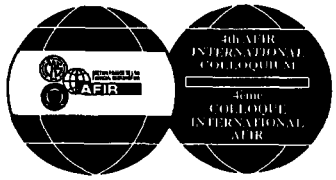
Would you be more likely to attend if one of the above topics were held in conjunction with a three- to four-day technical seminar? **Yes/No**

**Please mail to:** Richard Geisler, ThomsonManagement Solutions, RD 2 Box 465, Plainfield, VT 05667 or **Fax to:** Dale Tuttle, SOA office, 708/706-3599

# AFIR to conduct colloquium

The 4th AFIR International Colloquium is scheduled from April 20-22, 1994, at Buena Vista Palace in Orlando, Florida. The colloquium will be held in conjunction with the SOA spring meeting and cosponsored by the Casualty Actuarial Society.

AFIR, Actuarial Approach for Financial Risks, is the financial section of the International Actuarial Association (IAA). AFIR addresses financial issues and risks that concern actuaries, and it promotes the exchange of ideas between the actuarial profession and other financial experts.




The 4th AFIR Colloquium seeks papers emphasizing scientific contributions from academicians, both actuaries and non-actuaries, and from other professionals employed in the financial services industry.

For more information about the colloquium or the submission of papers, please call Colleen Fiore at the Society office, 708/706-3547.

# RESEARCH CORNER

The Society of Actuaries and other organizations representing actuaries in North America award several prizes for research papers. Below is a list. Those interested in submitting papers should contact the sponsor for full details.

## Research Prizes

**The Society of Actuaries**

- The Annual Prize for the best *Transactions* paper
- The L. Ronald Hill Memorial Prize for the best employee benefits paper
- The Triennial Prize for the best paper by an Associate of a recognized actuarial organization
- Investment Section Prize for best paper by Section member on investments

**Actuarial Education and Research Fund**

- David Garrick Halmstad Memorial Prize for the best research paper in an English language actuarial journal
- Everett Curtis Huntington Prize for the best paper given Fellowship credit for research in FEM option
- Practitioners Award for the best practical research paper
- John Culver Wooddy Prize for the best reinsurance paper

**Canadian Institute of Actuaries**

- Best paper by a member

**Conference of Consulting Actuaries**

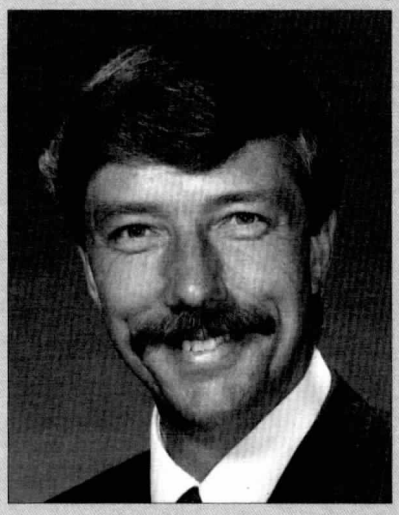
- John Hanson Memorial Prize for the best paper on employee benefits in the *Proceedings of the CCA*

**Casualty Actuarial Society**

- Dorweiler Prize for the best paper on advanced insurance topics
- Michelbacher Prize for the best paper in response to call for discussion papers program
- Woodward-Fondiller for the best paper on original research of an advanced insurance problem

# FACTUARIES

*This is another in a series of profiles of members of the Society's Board of Governors.*



**Name:** Robert (Rob) L. Brown

**Current hometown:** Waterloo, Ontario, Canada

**Current employer and function:** University of Waterloo, Associate Professor

**Marital status:** Married

**Children's names and ages:** James R., 17, and Allison J., 15

**Birthday:** February 25, 1949

**Birthplace:** Lindsay, Ontario

**My first job was:** Delivered morning paper from age 8 to 17; made green garbage bag (summer 1968); delivered milk (summers 1966 and 1967); actuarial student at Head Office Insurance Company

**People in high school thought I was:** An egghead and nerd, which upset me

**I'd give anything to meet/have met:** Most inspirational person I have met is Nathan Keyfitz. I would like to have met Winston Churchill.

**The number of exams I flunked:** SOA three times, CAS one time. I wrote Part 6 six times and failed it three times.

**The book I recommend most often:** *The Hitchhiker's Guide to the Galaxy*, all four books in the trilogy

**The movie I own the tape of:** *Casablanca* and *Kelly's Heroes*

**Nobody would believe it if they saw me:** Smoking. Doing absolutely nothing.

**The TV show(s) I stay home to watch:** *Cheers* (I watched the Blue Jays World Series win at the SOA Board of Governors Dinner, October 1992, Washington, D.C.)

**If I could change one thing about myself, I'd:** Just plain relax a lot more

**When I'm feeling sorry for myself, I:** Go for a hard run. The post-run chemicals set me right.

**My fantasy is:** To have been a politician of note

**The silliest thing I've ever done:** Skinny dip in ice-filled water and run a 50-kilometer race

**If I could do it over, I'd:** Redo high school

**My proudest actuarial moment:** Starting my year as the President of the Canadian Institute of Actuaries at its 25th anniversary gala in Quebec City. Party, party – eat your heart out, Bill Clinton.

**I'm passionate about:** Protecting those in the population who can't protect themselves

**My favorite way to spend a Sunday:** A morning run in a wooded area. The rest of the day with my family, preferably outdoors.


# Group actuaries going to the dogs

by Virginia R. Young

Recently a blurb advertising health insurance for pets wandered across my desk. As a group health actuary interested in new products — especially in today's political environment — I was intrigued by the idea of group insurance products for animals. (I could say something about this being a dog-eat-dog world, but I won't.)

My ideas on health insurance for cats and dogs in this article could be generalized to other species and to other products. In fact, some actuaries may wish to specialize in, say, tropical bird flocks (remember, this is group insurance) just to be able to work for companies located in warmer climates. (By the way, I'm in Wausau, Wisconsin. Look it up.)

Cats are so independent they're not likely to purchase health insurance. In fact, they will probably self-insure their ordinary medical costs. To manage their really big claims, they will buy cat-astrophic coverage.

An aside to actuaries working in individual insurance. A friend of mine proposed that one could develop multi-life insurance for a single cat. For example, one product that might have a lot of appeal is a death benefit that pays on the ninth death of the insured cat. In addition to the usual actuarial pricing variables, one would use a factor for pre-existing deaths. Also, don't forget that important policy provision, namely the suicide claws.

By now, your mind is churning over other multi-life products for cats, such as an annuity payable from life three through life five, with a benefit paid at the eighth death if it occurs at least ten years after the fifth death. Variations abound!

Back to the group track. In contrast to the habits of cats, dogs naturally form packs and always for purposes other than the purchase of insurance. One could argue, however, that the group is a cooperative that provides social insurance to its members. Dog packs, therefore, satisfy the first rule of group underwriting. On the other hand, packs don't have very good credit ratings, so I asked some friends, "Who will buy this insurance?" They answered, "The owner, of course. After all, it's a master policy."

Pricing variables include some of those used for humans, such as age, sex, and industry. Let me suggest three categories for the industries of dogs: working, hunting, and all other — also known as froo-froo. In addition, geographic location will influence medical costs of dogs. For example, if the density of traffic is high, then more accidents will occur. An offset to this effect is that most urban dogs are not allowed to run freely. Area factors also will take into account the incidence of diseases, such as Lyme disease. If the frequency of canine infection is not known, then the actuary can wave a magic dart and back into it by looking at statistics for the rate of human infection for the relative populations of deer, humans, and dogs.

It looks like consulting actuaries will have plenty of work to do in gathering data to use in developing a rating manual: Health Cost Leashlines.

Academic actuaries will have new areas to research, such as furry set applications in insurance and bulldog cur-edibility. "Where will these academic actuaries work?" you ask. De Pauw University, of course.


"For full protection we recommend 9 separate life insurance policies."

If you too are a group health actuary who sees group health insurance for animals as a wonderful career opportunity, team up with me, and we'll be reigning cats and dogs.

**Virginia R. Young is senior actuarial assistant with Wausau Insurance Companies, Wausau, Wisconsin.**

# Actuarial puzzlers make strong showing

Julian Ochrymowych, *The Actuary's* puzzle editor reports that several actuaries participated in the American Crossword Tournament, March 26-28, 1993, in Stamford, Connecticut. He and Marcia Sanders placed in the top 25% of the 192 competitors. Lois Abel, a rookie who read about the tournament in *The Actuary* (February 1993), made a strong first showing.

The highlight was watching actuaries Ellen Ripstein and Doug Hoylman compete with non-actuary Trip Payne for the top three spots in a sudden death contest, according to Ochrymowych. Simultaneously solving a larger-than-life, difficult grid before the audience, the three experienced a tense ordeal. Hoylman placed third and Ripstein placed second. "It's heartening to have two actuaries finish so near the top," Ochrymowych said. "If only Mr. Payne would consider an actuarial career...."

## Book review

# Many disciplines used in book tracing native Americans

by Robert J. Johansen

*The First Immigrants From Asia, A Population History of the North American Indians*, A.J. Jaffe with Carolyn Sperber. Published by Plenum Press, 233 Spring Street, New York, NY 10013, 1992, xxiii + 333, ISBN 0-306-43952-2. $39.50 ($47.40 outside U.S. and Canada)

Dr. A. J. (Abe) Jaffe calls on the disciplines of demography, anthropology, archeology, geology, geography, ethnology, and statistical and actuarial theory in a panoramic sweep of history and prehistory as he traces the North American native people from their wanderings in Asia across the Bering land bridge to North America.

Without a written history, Jaffe applies his knowledge, experience, and plain common sense to archeological and other data to reconstruct migrations across North America and the transition of many tribes from hunters and gatherers to an agricultural existence. Jaffe uses analyses of skeletal remains to derive estimates of birth and death rates and tribal/family relationships. He notes physiological limits on fertility, the apparent high mortality of primitive people, and that substantial numbers existed when the early colonists arrived from Europe. He justifies his estimates of pre-Columbian vital statistics as compatible with a very slow population growth over millennia. He also shows that some others' estimates would produce results incompatible with any reasonable estimates of the population of North America when Columbus landed.

In the third of 13 appendices, Jaffe explains his derivation of pre-Columbian life tables (agriculturalists live a bit longer, men longer than women). Without skeletons of children (whose bones don't survive), he extended the adult life tables back to age 0 by developing a relationship between $e_0$ and $e_{20}$ for high mortality populations.

Jaffe confined his analyses to the people in the geographic areas of the United States and Canada. He describes the devastating effects of European colonization on the native populations and their recent increase in numbers to equal the probable population in 1492. In discussing recent trends, he documents inconsistencies in U.S. and Canadian census enumerations and definitions. He also suggests how to adjust and interpret the data for trends. He raises many questions about the pre-Columbian civilizations, pointing out that many questions can never be answered and answers to others can only be conjectured. The deductions and logic are fascinating.

In this interdisciplinary view of the extended history of the native people of North America, Jaffe provides a full picture, explaining what he has done and why. Actuaries reading this book will add to both their knowledge of history and of applying common sense judgments to assumptions, results, and conclusions drawn.

**Robert J. Johansen is consulting actuary at Life Actuarial Services, Yonkers, New York.**

## Editorial cont'd

address fundamental issues and not just their outcomes. The needs of the ultimate users of the system or product being reviewed must be addressed, not just our immediate client. For example, many actuaries believe high cost is the primary cause of lack of universal access to health care. Trying to "solve" the health access issue without addressing the cost issue may only exacerbate the longer-term problem.

As professionals involved in evaluating the consequences of risk, the potential reach and value of the methods we employ can be surprisingly broad. We have to make the extra effort necessary to make a real contribution to business and public policy.

**Guest Editor Sam Gutterman, a Vice-President of the Society of Actuaries managing the Health Benefit Systems Practice Area, is director and consulting actuary at Price Waterhouse, Chicago.**

## Section corner cont'd

The Education and Research Section is sponsoring the 28th Annual Actuarial Research Conference at the University of Wisconsin, Madison, from August 19-21 in honor of Professor Jim Hickman.

This Section administers the ASA/FSA grant program and has awarded 21 grants to universities (2 FSA and 19 ASA) since the program began in 1990.

## Fall Seminar Calendar

| | | |
|---|---|---|
| September 20-21 | Valuation Actuary Symposium | San Francisco<br>San Francisco Marriott |
| October 4-5 | Multivariate Duration Analysis | Boston<br>MIT Faculty Club |
| October 6-7 | Multivariate Immunization Theory | Boston<br>MIT Faculty Club |
| October 17-20 | Annual Meeting | New York<br>New York Marriott Marquis |
| December 6-7 | Critical Issues in Underwriting | San Francisco<br>Marriott-Fisherman's Wharf |

# Dear Editor:

### A look at future math education

If you have not spoken to a teacher recently, you may not be aware of how much elementary and high school math education has changed since your school days. The National Council of Teachers of Mathematics (NCTM) published a landmark document in 1989 called *Curriculum and Evaluation Standards for School Mathematics*. It outlines NCTM's vision of what the school math curriculum should include in the next decade. I highly recommend that you read this document, available from NCTM by calling 703/620-9840.

You also may not be aware that each state has a coalition of teachers, parents, and business leaders who are interested in improving math education. Actuaries would be an excellent resource to help bring more real-world math into the classroom. I encourage you to contact your state math coalition. Their addresses are available from Joan Donahue at the Mathematical Sciences Education Board, 202/334-1488. Get their newsletters and discover how you can contribute to their efforts.

**Jerome E. Tuttle**

### Consequences of new ASA requirement

After reading *The Actuary* article (April 1993) on the planned strengthening of the ASA designation, I am compelled to comment on what I see as a likely consequence of these course changes. The article states that anyone who has earned the ASA designation before July 1995 will not be affected. However, after reviewing the changes to the curriculum, I do not believe this statement is entirely accurate.

Although they will not be required to take additional exams to retain their Associateship status, they will be affected. This change in educational requirements will create two classes of Associates, placing many pre-July 1995 Associates at a distinct disadvantage. Many "career" Associates with several years working in the industry may have enough practical experience to offset the negative impact of not having passed Courses 200, 210, 220, and 230. However, those of us who have only recently become Associates may find that our work experience is not enough to outweigh the obvious benefits of completing the Series 200 courses.

Of course, pre-July 1995 Associates can study for and attempt to pass Series 200 courses. The disadvantage is that their Series 200 credit will be valid for at most nine years if they decide not to attain full Fellowship status. Persons attaining Associateship under the strengthened program will receive permanent credit for Series 200 courses without having to proceed to Fellowship and without having to make such an all-or-nothing decision.

The Society can rectify this inequity either by allowing pre-July 1993 Associates to reapply for Associateship under the strengthened curriculum once they have successfully completed Series 200 requirements or by eliminating the expiration of any Series 200 credits earned by pre-July 1993 Associates. Such action will strengthen the ASA designation for all Associates, not just those obtaining their designation after July 1993. Without providing such an alternative, the Society's plan will weaken the ASA designation earned by pre-July 1995 Associates.

I fully support the Society's efforts to make the Associateship designation a more valuable commodity in the insurance industry if such action does not devalue the standing of another segment of its active membership.

**James W. Brumbaugh**

### Reply from Marta Holmberg, SOA Education Executive

We are aware that fairly recent ASAs may share the concerns raised by James Brumbaugh. As he points out, the potential negative impact for an individual is a short-term one that can be addressed in two ways: by acquiring valuable practical experience and by completing the Series 200 (Core) basic practice examinations. The latter course of action could fill the gap while the individual acquires more practical experience.

In a sense, the need for the Series 200 examinations is a temporary one for a new ASA who is not going on to FSA. We recognize, of course, that the possibility of later losing the Series 200 credits because of the current rule is not a happy one. However, it is not intended that the rule would be applied automatically. The E & E Committee is reviewing the underlying policy and related rules with an eye to ensuring that policy concerning course validity is fair and reasonable. The review may well lead to some changes in that policy.

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### Community rating cont'd

One of the biggest obstacles to many of the risk adjustment methods that have been proposed, such as Ambulatory Care Groups (ACGs) or Diagnostic Cost Groups (DCGs), or the use of self-reported health status indicators, is the huge expense involved in collecting, processing, and verifying the needed data.

A perfect risk adjustment method would allow consumers to price shop, based on a premium or contribution that reflects a carrier's ability to manage medical and administrative costs efficiently, not the particular risk characteristics of that carrier's block of business. Such a risk adjustment method would need to be reliable, unbiased, easily calculated with data readily attainable, timely, and accurate.

The trade-off for risk adjustment methods is between accuracy and simplicity. The goal should be to find a model that is accurate enough to create a level playing field and simple enough to minimize administrative costs.

**Alice Rosenblatt is senior vice president and chief actuary with Blue Cross/Blue Shield of Massachusetts.**

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## Mail alert

Second ballots for the Society of Actuaries' 1993 elections will be mailed to all Fellows on July 20. Ballots must be returned to the Society office by August 20.

# ACTUCROSSWORD

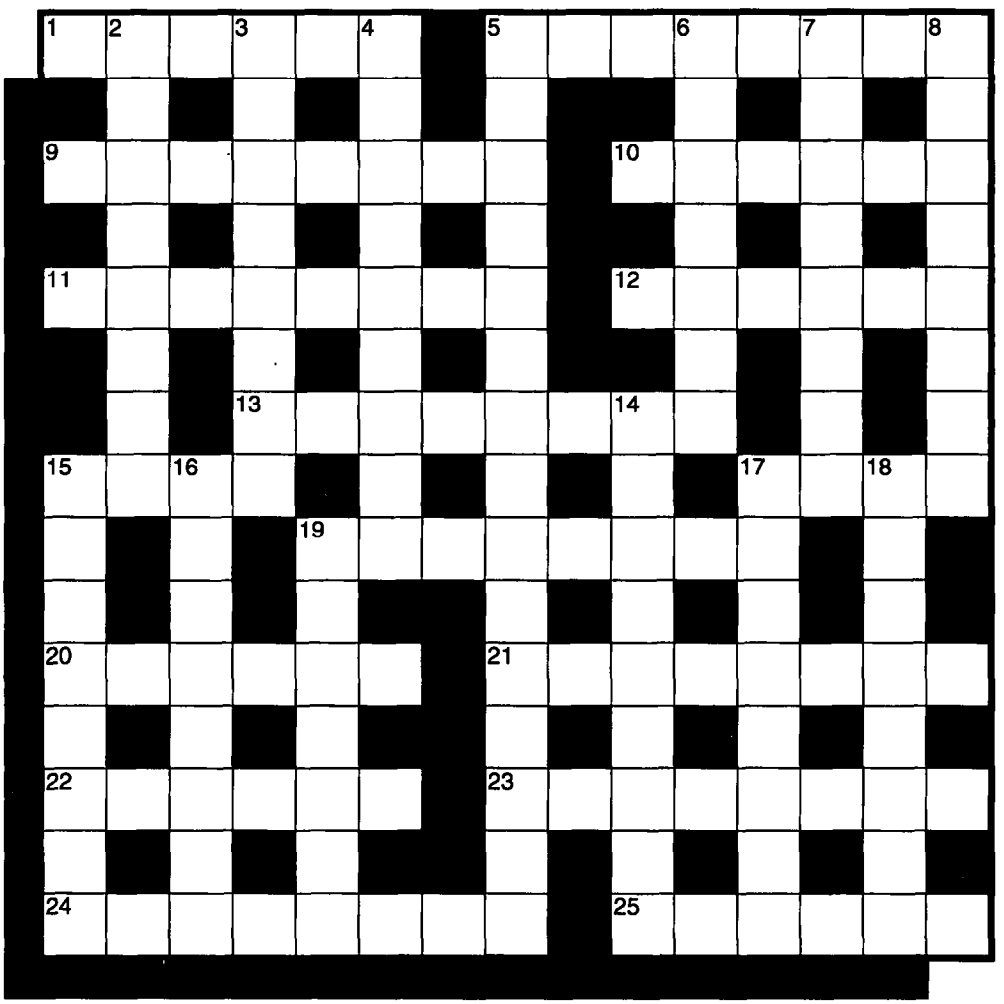
## by Bob Hohertz

### Across

1. The greatest must, to reform (6)
5. Knew old queen, one consorting with a perennial climber (8)
9. Blasé air addled gargantuan Alcofribas Nasier (8)
10. Princess following queen leads to dissent (6)
11. Saw a purchase order going to the auto makers (8)
12. Tutor of Achilles in an ancient letter, and not backwards (6)
13. Brood about mother's ball of perfume (8)
15. Penetrating power shows in polished gem (4)
17. A foreign service returned from a great distance (4)
19. Cold wind, to the French (8)
20. Inflexible pressman pressed (6)
21. Lydian queen whom Hercules served cut ninety-nine — about the bellybutton? (8)
22. Goddess of mischief without a way to fly (6)
23. Happy in Opper's strip, young tough (8)
24. Expulsion of evil from Mexico's tied up with the onset of ruin (8)
25. Loses vital power accompanying the Chicago railway engine (6)

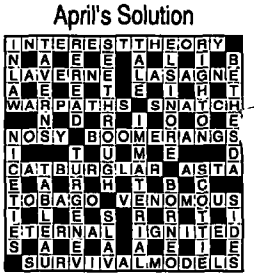
### Down

2. Drunken pirates had finally wandered (8)
3. Accomplished sort, like a real dynamo (8)
4. With Hedda Gabler's husband outside, Daughters of the American Revolution backed a shopkeeper (9)
5. Three kings of New York, according to Irving. Fools! (4,3,2,6)
6. But at the end, this way leads to there (7)
7. Composer, coming from Morroco coast, produces "Scum" (8)
8. Settler from Scottish island, half German (8)
14. Rock pile. Solids circles or ovals no matter how you cut it (9)
15. Give necessary items to period carriage (8)
16. In Rome, go roughhousing an Apache (8)
17. At a condition to go around in (8)
18. Organize it, vacate eccentric (8)
19. Questioner held in, thus (7)



**100% Solvers - February:** L Abel, W Allison, HG Anderson, D Apps, A Bailey, D Baillie, T Boehmer, E Broge, E Brosseau, J Brownlee, R&M Buck, G Cameron, J Carr, R Carson, S Colpitts, E Crane & J Jackomin, P&E Danyo, J Darnton, F&M David, M Eckman, R Fleckenstein & P McEvoy, C Galloway, E Goldstick, P Gollance, J Grantier, G Hansen et al, G Horrocks, R&J Koch, L Lana, D Leapman, T Luker, W Lumsden, M Lykins, M MacKinnon, D Maher & C Kinsman & R Trautmann, R Martin, P&J May, G Mazaitis, J Mereu, R Miller III, B Mowrey, L Oxby, J Palmer, J Raich, F Rathgeber, E Ripstein, J Roszkowski, G Sherritt, M Swyers & M Gornet, H Tate, E Thompson, M Thompson & D Elbaum, E Tittley, B& J Uzzell, M Vandersteeg & A White, D Weill, R Weitzenkamp, RM Whitby, A Whiton, M&D Williams, S Winch-Furness, V Young, F Zaret

April's Solution




Send solutions to: Puzzle Editor, 35 Smithfield Court, Basking Ridge, NJ 07920