



Health Section News

"For Professional Recognition of the Health Actuary"

Accessing and Using Public Data: A Primer for the Health Actuary

by Denise Love

"The twenty-first century will be about velocity: the speed of business and the speed of change. ... An infrastructure designed around information flow will be the "killer application" for the twenty-first century."

— Bill Gates, *Business @ the Speed of Thought*

Transformation of the health care industry is occurring and is long overdue. Despite escalating health care costs, health care quality and access have not improved and may be worsening. Pay for performance, patient safety awareness, consumer-driven health care and advancements in medical informatics and information technology are converging to impose change on a health care industry historically resistant to change.

If the 1990s can be characterized as the years of managed care and quality improvement in health care, then the first part of the 21st century might be known as the years of medical informatics and information technology. The good news for data lovers (actuaries, statisticians) is that health data no longer is an afterthought but it is an essential component of health care delivery, payment and decisions. But the next challenge will be information management. Most of us suffer, not from a lack of information, but from information overload. Search engines are more efficient than ever and within seconds deliver thousands of links to Web sites and documents. For example, a Google search of "public health data" delivers in seconds over 193,000 links to agencies, reports and data sources.

The health actuary can benefit from the diverse array of public data sets generated by federal and state agencies. Knowing what types of data are available and where to look reduces time and effort in accessing the right data for the



right task. Knowing where and how to narrow your data search for the right data source can reduce the search time and effort.

About This Article

This article was written by the National Association of Health Data Organizations (NAHDO) for the Society of Actuaries. The paper is a primer for actuaries with limited experience in accessing and using public data sets. First, a very basic inventory of the major federal and state data sets is provided. Next, a few examples of online and analytic tools and innovative Web portals are described. These tools and portals (which organize and point to content created by others) offer a wide range of content appealing to the novice as well as the most sophisticated researcher. Private or proprietary data sets are not included in this article, as many are not available for general public use.

(continued on page 4)

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SOCIETY OF ACTUARIES

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Chairperson's Corner

by Karl G. Volkmar

As I am writing this, we are more than halfway through the section-year, and this year of unprecedented change in Health Section Council (HSC) responsibilities is going more smoothly than anyone could have imagined!

I would like to extend a big THANK YOU to all who are serving in the new "Council +" structure — HSC members, advisors and friends. These individuals are serving the Health Section membership in a great way, working to combine the strengths of the former Health Benefit Systems Practice Advancement Committee (HBSPAC) with those of the HSC, and to ensure that nothing is lost in the process. I would also like to give a special THANK YOU to my partners during this challenging transition year—Jan Carstens (Board of Governors' partner and chair of the former HBSPAC), Kara Clark (SOA staff partner) and Lori Weyuker (vice chair of the HSC). I can attest that we have all served the membership to the best of our ability (read "availability"), and that my partners are extremely patient people.

As I described in my last Chairperson's Corner, HSC members are serving as coordinators for the Health Section's role in the following areas of activity:

- Secretary/Treasurer - Bill Lane
- Communications and Publications - Lisa Tourville
- Basic Education - Damian Birnstihl
- Continuing Education - John Lloyd, Craig Kalman, Lori Weyuker
- Research - Bryan Miller
- Professional Community - Mark Billingsley

I am happy to report that each one of these individuals has taken the responsibility to coordinate the activities of his/her respective area to heart—both the effort and the results have been outstanding. Please be assured that your elected HSC members are doing a great job for you!

As part of coordinating their particular area of activity (when applicable), HSC members have recruited team chairpersons—those who actually lead and facilitate the day-to-day activities within each area. The HSC is pleased to announce that the following

individuals have agreed to serve as team chairs:

- Communications and Publications Team - Gail Lawrence
- Continuing Education Team - Stu Rachlin
- Research - John Cookson
- Professional Community - Ian Duncan

At this point, our plan is that area coordinators will rotate every year to ensure that new perspectives are introduced on a regular basis. Team chairs will serve on a longer-term basis to ensure that the necessary continuity will be in place. Please note that leadership continuity will also result as those currently serving decide to serve in their roles on a longer-term basis or to transition to other roles within the "Council +" structure.

In a joint HSC/HBSPAC meeting held last December, we agreed upon the following key issues for 2005:

- Healthcare affordability and financing
- Defining, collecting and getting value from data
- Outcomes and cost /benefit studies—actuarial methods to quantify results
- Professional visibility in the health industry

While we always have operational/business items to address, our goal is that many of the activities of the HSC will support the health actuarial profession's efforts in these areas.

Two things I would like to continue to ask of the Health Section membership:

- Please continue to be patient with us as we work through this transition. We are committed to providing higher levels of service, but we are still learning. Don't hesitate to contact me with any questions/comments/suggestions/etc. or if you think we are missing or overlooking anything of importance or significance.
- Please volunteer! If you are interested in information regarding opportunities for service, contact me or Kara Clark of the SOA at kclark@soa.org.

Feel free to call or e-mail me with question or comments at (317) 575-7672 or kvolkmar@uhasinc.com. 📧



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About The National Association of Health Data Organizations (NAHDO)

NAHDO is a national nonprofit membership and educational association, established in 1986. The organization provides technical assistance to and advocacy for public and private health data organizations that collect and disseminate hospital discharge and other health care data. NAHDO regularly convenes leaders in health care information to share best practices and transfer methods and technologies across states and provides formal testimony and consultation to federal and state policy makers around health care data issues. Also, NAHDO is actively involved in national standards development and federal grants and projects to improve the quality, quantity and use of health care data for health care cost, quality and access purposes. Together, NAHDO's senior staff has over 25 years experience in the technical and political aspects of implementing statewide reporting initiatives, including the dissemination of market and policy indicators related to health care cost, quality and access. NAHDO is a subcontractor to Medstat in the Agency for Healthcare Research and Quality's (AHRQ) Healthcare Cost and Utilization Project (HCUP) and through a NAHDO-CDC cooperative agreement provides technical assistance and statistical guidance to states disseminating public health data on the Internet. Visit www.nahdo.org.

About Public Data: 101

Because most publicly available data are generally available (for low or reasonable cost) to appropriate users and generally are accompanied by detailed technical documentation, they are an attractive data source for research and special studies. However, the user must be aware of a data set's limitations. Because many public data sets are collected to administer a program or to pay a claim, they may not be designed to perfectly meet the needs of other types of secondary uses, such as research.

Tips on Accessing Public Data

The myriad of online query tools listed later in this article are reducing the barriers to access to federal and state data sets. However, structured queries and aggregate reports are not likely to meet the needs of the serious researcher or actuary who may want to manipulate detailed data. These users will want to access the micro data files directly from the agency, and to do so, need to understand the legal implications of gaining access to the data. While each state has statutes governing the release and use of public health data, the privacy regulations promulgated under the Health Insurance Portability and

Accountability Act of 1996 (HIPAA) have resulted in additional considerations when requesting a data set. Public health agencies continue to experience inconsistent and sometimes conflicting interpretations and application of the HIPAA privacy regulations when dealing with the collection, maintenance, use and disclosure of health information. For bona fide research, HIPAA requires approval by an institutional review board. For non-research applications, HIPAA provides for a "limited data set" with direct identifiers such as name, address, or fields which individually identify a patient removed or masked. A limited data set must also be accompanied by a data use agreement. For detailed information about the HIPAA privacy rule, see the following links:

<http://www.mc.vanderbilt.edu/root/vumc.php?site=hipaaprivacy&doc=1548> and

<http://www.hhs.gov/ocr/generalinfo.html>

Tips for Requesting Public Data

- Structure your data request to avoid delays or getting turned down.
 - Define your study period. How many years of data do you need versus what is available? For multi-year studies, be aware of changes in hospital ownership over the time period. Codes and definitions may also change between years. Data elements may be added or deleted across years, so data documentation is critical. Be aware of calendar year or fiscal year time frames.
 - Consider the universe. Do you need all hospitals in an area? All geographic areas? Are data available for the scope of your study (e.g., specialty hospitals may be excluded from some statewide hospital discharge data sets)?
 - Be aware of legal or other limitations/restrictions to data release and disclosure. Some states restrict the public disclosure of hospital identity, as does the HCUP national inpatient sample. Some agencies limit public disclosure to aggregated results and restrict secondary release of the data.
 - Most hospital discharge data sets release charges, not cost or payment.

Where to Find Public Health Data

Federal Government Data Resources

The Department of Health and Human Services (DHHS) maintains a broad array of data collection systems designed to monitor disease outbreaks, disease treatment outcomes, injuries, food safety and other public health problems. Individual federal agencies are also providing Web tools to increase access to their own statistics and data sources.



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- Centers for Disease Control and Prevention (CDC) — www.cdc.gov
 - Numerous national-level surveillance data reported by states, ranging from cancer to pregnancy risk assessment data, are maintained by the CDC.
- National Center for Health Statistics (NCHS) of the CDC (www.cdc.gov/nchs)
 - NCHS maintains a host of household and provider-level surveys
 - National Health Interview Survey (NHIS)
 - National Health and Nutrition Examination Survey (NHANES)
 - State and Local Area Integrated Telephone Survey (SLAITS)
 - Survey of Income and Program Participation (SIPP)
 - National Employer Surveys
 - National Immunization Survey (NIS)
 - National Maternal and Infant Health Survey (NMIHS)

NCHS and other DHHS agencies also conduct provider-level surveys that collect data from hospitals, physicians and clinics. Some of these surveys collect information directly from the individuals who use these services, but all of them also collect data from facility records.

- National Ambulatory Medical Care Survey (NAMCS)
- National Hospital Discharge Survey (NHDS)
- National Home and Hospice Care Survey
- Agency for Healthcare Research and Quality (AHRQ) — www.ahrq.gov
 - National Medical Expenditure Panel Survey (MEPS)—An annual household survey conducted since 1996 using the NHIS sample frame.
 - Consumer Assessment of Health Plans Survey (CAHPS)
 - Healthcare Cost and Utilization Project (HCUP)
- Substance Abuse and Mental Health Services Administration (SAMHSA) — oas.samhsa.gov
 - Drug Abuse Warning Network (DAWN) from hospital emergency department records
- Centers for Medicare and Medicaid Services (CMS) formerly HCFA — www.cms.hhs.gov/researchers
 - Medicare program data are widely used to study health and health care outcomes of populations eligible for Medicare coverage. The Medicare Enrollment Database (EDB) contains information on all Medicare beneficiaries. It is an important database because it can link to

other Medicare files. Medicare Current Beneficiary Survey Series (CMS) and the Medicare Provider and Review (MEDPAR) files.

- Health Resources and Services Administration (HRSA) — www.hrsa.gov/data.htm
 - HRSA provides a wide range of data and statistics on maternal-child health, workforce, primary care, rural health and health insurance coverage.

Other federal data:

The Census Bureau, part of the U.S. Department of Commerce, is one of the primary sources of insurance data; it conducts two main surveys responsible for deriving health insurance data—the Current Population Survey and Survey of Income and Program Participation.

Human Services data include the Temporary Assistance for Needy Families (TANF). States provide data on a quarterly basis to the federal government including data on employment, earnings and income from other sources.

Federal Portals

- Quick Access to Federal Government Data (<http://www.fedstats.gov/>)
This site is a gateway to statistics from over 100 U.S. federal agencies and provides direct access to federal agencies, online data resources, mapping statistics and almost any federal statistical resource.
- HHS Data Council Gateway to Data and Statistics (www.hhs-stat.net/)
This Web-based tool brings together key health and human services data and statistics. It is designed to complement other government resources such as FirstGov and FedStats. The Gateway covers federal, state and local government sponsored information.

State Health Data

States are responsible for maintaining numerous health-related data collection systems including vital statistics (birth and death records); hospital discharge abstracts which provide detailed information on hospital patients and the diagnoses and treatments they receive; registries such as the cancer registry system; and programs such as Medicaid and State Children's Health Insurance Program (SCHIP). Much of the data states collect are shared with DHHS for department use in monitoring the health of the nation and administering and evaluating federal programs.

Because states' regulatory powers and service provision activities are broad, the federal government relies on states to collect health data used to study health and health services at the state and federal levels.

Much of the data resources are located with state health departments. The most efficient way to access one or more health department home pages is through the CDC Web site at www.cdc.gov/mmwr/international/relres.html which lists each state health department.

Important federal-state cooperative data initiatives reflect the critical data partnerships between the federal and state governments, where the state implements data collection and management using federal guidelines and standards, and then reports local data to the federal agency. Examples of these cooperatives and partnerships include the following:

- **Vital Statistics Cooperative Program:** The National Vital Statistics System is the oldest and most successful example of inter-governmental data sharing in public health and the shared relationships, standards and procedures form the mechanism by which NCHS collects and disseminates the nation's official vital statistics. These data are provided through contracts between NCHS and vital registration systems operated in the various jurisdictions legally responsible for the registration of vital events—births, deaths, marriages, divorces and fetal deaths. Visit <http://www.cdc.gov/nchs/nvss.htm>.
- **Statewide Hospital Discharge Data Programs:** Over 45 states maintain statewide, discharge data systems that include all payers on all patients admitted to acute care hospitals, including the uninsured. These systems are maintained by state agencies or private data organizations, such as a hospital association. All of these data programs collect inpatient data in a uniform billing 92-based discharge data abstract which may be modified by states to meet local needs. Data access policies vary by state, depending on the legal and organizational policies governing data collection and release. Many of these states also participate in the HCUP project, which provides state-level data files in a uniform or HCUP format. Generally, the state agency provides research-level or more detailed data guided by data use agreements and policies. Many states are disseminating hospital statistics in query format on the Internet. Contact NAHDO at nahdoinfo@nahdo.org for contact information.
- **Healthcare Cost and Utilization Project (HCUP):** HCUP is a family of healthcare databases and related software tools and products developed through a federal-state industry partnership and sponsored by the Agency for Healthcare Research and Quality (AHRQ). HCUP databases bring together the data collection efforts of state data organizations, hospital associations, private data organizations, and the federal government to create a national information resource of patient-level health care data. HCUP includes the largest collection of longitudinal hospital care data in the United States, with all-payer, encounter-level information beginning in 1988. These databases enable research on a broad range of health policy issues, including cost and quality of health services, medical practice patterns, access to health care programs and outcomes of treatments at the national, state and local market levels. More information, databases and tools are available at <http://www.hcup-us.ahrq.gov/overview.jsp>
- **Behavioral Risk Factor Surveillance System (BRFSS):** The BRFSS is a state-level survey developed by DHHS in collaboration with the states to monitor state-level prevalence of behavioral risks among adults. The survey contains a core survey that is common across all states so that comparisons can be made, but flexibility to permit states to add their own questions.
- **Youth Behavioral Risk Factor Survey (YBRFS):** A state-level survey modeled after the BRFSS and targeting adolescents.
- **Surveillance, Epidemiology and End Results (SEER) program for cancer:** The National Cancer Institute administers the SEER program to provide data on cancer incidence and survival. Data are collected from cancer registries in 14 geographical areas covering approximately 26 percent of the U.S. population
- **Medicaid and State Child Health Insurance Programs (SCHIP):** States report encounter data to the CMS Medicaid Statistical Information System (MSIS). MSIS data are used to create an analytic data file, which prior to 1999 was called "SMRF" but now is named "Medicaid Analytic Extract" (MAX). MAX files include claims and encounter records in a revised format. MAX files include encounter data from managed care organizations, but CMS staff does not consider these data to be useful for research purposes, as discussed below. For each state for each year, there are five MAX files, an eligibility file plus four utilization files (the same types that states use

when submitting their data to CMS). Researchers outside of the federal government can purchase these files for approved research activities through a data use agreement with CMS.

- **State Health Interview Surveys:** The national surveys do not support state or local estimates, so many states conduct their own state-specific surveys, and about 25 states have received federal funding from HRSA to conduct state planning grants to study potential ways to expand health insurance. The goal of the program is to support states as they analyze their uninsured populations and healthcare marketplaces in order to develop solutions to ensure health coverage for all state residents. More information can be found at <http://www.hrsa.gov/osp/stateplanning/granteelist.htm>.

The California Health Interview Survey (www.chis.ucla.edu/) is an example of a state health interview survey.

Public Domain Analytic Tools

National measures of quality increasingly used for proprietary, purchasing, public reporting and quality improvement initiatives are the AHRQ Quality Indicators. AHRQ's Quality Indicators are standardized indicators of quality generated from widely available hospital discharge data sets.

The quality indicators were empirically evaluated and refined by Stanford University's Evidence-based Practice Center. Under contract with AHRQ, Stanford assesses the face validity, precision, bias, construct validity and application factors for each quality indicator. This study resulted in the development of three software modules. The software can be downloaded without charge at www.qualityindicators.ahrq.gov/ in SAS or SPSS format (and soon an online calculation tool will be available).

The advantages of the indicators are their public access, complete documentation, standardized definitions and a reference database consisting of 35 state inpatient data sets. The indicators can be used with any hospital administrative data set, including MedPar, state discharge data, payer data and a hospital's internal data. Known limitations of administrative data apply to these indicators as they do to any study involving billing or claims data. Each of the following software modules generates numerators, denominators, observed rates, risk-adjusted rates and smoothed rates for individual indicators.

- **Prevention Quality Indicators (PQIs)** are a set of 16 measures that can be used with hospital inpatient discharge data to identify quality of care for "ambulatory care-sensitive conditions." These are

conditions for which good outpatient care can potentially prevent the need for hospitalization or which early intervention can prevent complications or more severe disease.

- **Inpatient Quality Indicators (IQIs)** are a set of 31 measures that provide a perspective on hospital quality of care using hospital administrative data. These indicators reflect quality of care inside hospitals and include inpatient mortality for certain procedures and medical conditions; utilization of procedures for which there are questions of overuse, underuse, and misuse and volume of procedures for which there is some evidence that a higher volume of procedures is associated with lower mortality.
- **Patient Safety Indicators (PSIs)** are a set of 29 indicators to help health system leaders identify potential adverse events occurring during hospitalization. Twenty-three of the PSIs are provider-level measures and six are area-level measures. The PSIs are a set of indicators providing information on potential in-hospital complications and adverse events following surgeries, procedures and childbirth. The indicators can be used to help hospitals identify potential adverse events that might warrant further study.

Web Query Systems to Disseminate Public Data

State and federal agencies are developing interactive Web query systems to disseminate health statistics on the Web. These sites provide a quick and easy way for researchers to assess the significance of a problem and explore the data prior to purchasing the entire data set for detailed studies. It provides consumers and advocacy groups with aggregate information about a particular condition or procedure. And they can be used to gather national or regional benchmarks for use with local or proprietary data sets. A more complete listing of national, state and local Web query systems can be found at NAHDO's Web site, the Health Information Dissemination Systems Clearinghouse (HIDSC) at <http://www.nahdo.org/hidsc2/hidsc.aspx?id=Users%20web%20applications>.

Table 1 Web Query Tools, Selected Examples

Entity	Name	Description/Criteria	URL
Utah Department of Health	Indicator-Based Information System for Public Health (IBIS-PH)	<p>This system contains standard reports, publications and multiple query modules, which access data on population estimates, births, mortality, hospital use, emergency department use, health surveys, cancer registry and injuries.</p> <p>Emergency department module.</p> <p>Metrics: counts, crude rates, age-adjusted rates, total charges, average charge and median charges.</p> <p>Filters and dimensions: year, diagnosis, procedure, gender, primary payer (including Medicaid, SCHIP), discharge status and geographic area.</p>	<p>http://ibis.health.utah.gov/view?xslt=home.xslt&xml=home/home.xml</p>
Wisconsin	Wisconsin Inquiry Tool for Healthcare Information (WITHIN), Ambulatory surgeries query module	<p>WITHIN, which is based on Utah's IBIS-PH system, allows queries of hospitalizations and ambulatory surgeries (from both hospital-based and freestanding facilities).</p> <p>Ambulatory surgeries query module.</p> <p>Metrics: counts, total charges, average charge and median charges.</p> <p>Filters: type of surgery (170+ options) gender, age group, county of residence, year and primary payer (including medical assistance).</p> <p>Dimensions: year, gender, age group, county of residence and primary payer.</p> <p>Years available: 2001 and 2002.</p>	<p>http://dhfs.wisconsin.gov/within/qspages/qcamb01.htm</p>
South Carolina	Analysis of Emergency Room Discharges by Selected Characteristics	<p>Metrics: total and average charges.</p> <p>Filters: diagnosis category, specific diagnosis, age group, race, gender, primary payer (including Medicaid), county of residence, health service area and health district.</p> <p>Dimensions: county of residence, health service area, DHEC health district and primary payer.</p> <p>Years available: 2002 and 2003.</p>	<p>http://www.ors2.state.sc.us/er.asp</p>

Entity	Name	Description/Criteria	URL
West Virginia	Health IQ 2003	<p>Metrics: number of hospital discharges, charges, inpatient days, average charge and length of stay.</p> <p>Filters and dimensions: gender, age group, county of residence, payer, type of service, discharge status, DRG, APS, MDC, principal and secondary diagnosis and principal and secondary procedure.</p> <p>Years available: 2000-2002.</p>	http://www.hcawv.org/DataAndPublic/IQ/UB03.asp
AHRQ	Healthcare Cost and Utilization Project (HCUP-NET)	<p>HCUP-net generates statistics using data from HCUP's Nationwide Inpatient Sample (NIS), Kids' Inpatient Database (KID) and State Inpatient Databases (SID).</p> <p>Metrics: number of discharges, mean and median length of stay, mean and median charges, percent died in the hospital, discharge status, percent admitted from emergency department, percent admitted from another hospital and percent admitted from long term care facility.</p> <p>Soon will include the AHRQ Quality Indicators statistics.</p>	http://hcup.ahrq.gov/HCUPnet.asp
AHRQ	Medical Expenditure Panel Survey (MEPS)	<p>MEPS has two components: household and insurance. Household component:</p> <p>Metrics, filters and dimensions: hospital emergency room visits, prescribed medicines, perceived physical and mental health status and insurance status.</p> <p>Years available: 1996-2002.</p>	http://www.meps.ahrq.gov/mepsnet/mepsnetintro.htm
NAHDO	Emergency Department Internet Query System (EDIQS)	<p>This query system provides national emergency department statistics and benchmarks derived from the NCHS National Hospital Ambulatory Medical Care Survey (NHAMCS). Users can query general and injury-related ED utilization statistics by patient and hospital characteristics.</p>	<p>Available at the NAHDO site: http://155.98.221.34/ediq/index1.htm</p>

Table 2 Examples of Model Local Web Resources

Local Portal	Characteristics	URL
Massachusetts Health Data Consortium	Catalogues links to health data sites by: <ul style="list-style-type: none"> • Costs/expenditures • Disease/conditions • Drugs • Facilities • Geographic • Insurance • Medical Care/Treatment • Health Care Workforce 	http://www.mahealthdata.org/
Health Foundation of Greater Cincinnati	Maintains a Health Data Resource directory for the Tri-State area of Indiana, Kentucky and Ohio. Created the Online Analysis and Statistical Information System (OASIS) in partnership with the University of Cincinnati. OASIS permits user-defined analysis of data sets in its data warehouse for guided analysis or execution of sophisticated statistical functions. Mapping software permits the generation of maps. SAS logs are generated and downloadable, as are data sets. Detailed documentation of codes and data fields are available for data sets in the warehouse.	http://www.healthfoundation.org/data OASIS: http://www.oasis.uc.edu/OASIS_CODE/Templates/Login.cfm
Family Health Outcomes Project, University of California San Francisco	This site includes excellent information about data, and online access to public health data through FHOP-maintained interactive sites. <ul style="list-style-type: none"> • EpiBC 2005: birth certificate data • Analysis and presentation system • Hospital discharge data analysis and presentation system • EpiMap2 california county map boundary files Downloadable EpiInfor (ver 3.2.2) with full users manual	http://www.ucsf.edu/fhop/htm/pub_health_data/index.htm

Local Portal	Characteristics	URL
<p>Washington State Department of Health</p>	<p>Health Data Section: links you to pages within and outside the Department of Health Web site that contain links to data tables or data for online query and publications. VistaPHw is used across the Washington State public health system as a standardized tool for community health assessment.</p> <p>Statistical guidelines for commonly encountered issues in public health practice. Assume a basic knowledge of epidemiology and biostatistics.</p> <ul style="list-style-type: none"> • Confidence intervals for public health assessment • Population denominators • Racial and ethnic groups in data analyses • Rates for public health assessment • rural-urban classification systems for public health assessment • Small Numbers • Address matching and geocoding data • Human subjects review <p>Many health publications.</p>	<p>http://www.doh.wa.gov/Data/data.htm</p>
<p>University of Michigan's Statistical Resource on the Web for Health</p>	<p>Regularly updated, provides data and statistical resources for topics ranging from A to V (Abortion to Vital Statistics). Statistical Universe indexes and abstracts federal government statistics since 1974; business, association, and state government data since 1980, and international agencies since 1983. About 15 percent of the abstracts link to full text.</p>	<p>http://www.lib.umich.edu/govdocs/sthealth.html</p>
<p>National Association of Health Data Organizations (NAHDO)</p>	<p>The NAHDO-CDC Cooperative Agreement supports a Web site, Health Information Dissemination Systems Clearinghouse (HIDSC) with links to interactive public health Web sites, plus:</p> <ul style="list-style-type: none"> • Statistical guidelines • Soon HIPAA white papers series • Technical papers series 	<p>http://www.nahdo.org/hidsc2/hidschome.aspx</p>

The actuarial community is an important constituency or user group for federal and state data sets. Since these data systems rely on public funding, actuaries can help. Often legislators will want to know who uses the data and its benefits. If you use a public data set for a study or in your

daily work, provide feedback to the agency about the data, what might be improved, and results or findings from your study. This information is helpful to agency staff, especially as they prepare for their budget or sunset reviews. 📧

Optimal Small Group Renewal Methods

by Ross Winkelman

Ask 10 actuaries to describe the best methods for rating small groups at renewal, and you are likely to get 10 different answers. Milliman surveyed 20 small group carriers on their renewal methods and found that they did things very differently. In particular, some plans used risk adjusters while many others did not. This variation indicated a critical need in the marketplace to identify the optimal small group renewal methods and to quantify the value of implementing those methods. Milliman is in the midst of a research study to identify optimal small group methods (The study will be completed as of the date this article is published.) To identify the characteristics of the optimal methods and quantify their value, we are answering a number of important questions:

1. What is the most accurate way to rate small groups at renewal using traditional information and methods?
2. How much do risk adjusters improve precision under real-world conditions?
3. Should risk adjusters be combined with traditional loss ratio approaches? How should risk adjusters be calibrated?
4. Does credibility really increase with group size?
5. What other factors affect credibility?
6. What is the bottom line impact of improving renewal methods?
7. How does what your competitors are doing affect what you should do?

To date, we have reached some surprising conclusions. We have concluded that risk adjusters significantly improve precision, but only marginally do so under real world conditions. This is especially apparent as group size increases and state limits on allowable rate variation due to health status shrink. Risk adjusters should be calibrated for the specific block of business being rated and should be combined with traditional methods to optimize their precision. Traditional information and methods can be optimized to a point where they perform well when compared to methods that use risk adjusters. Finally, the value of improving renewal methods was lower than we originally expected, especially considering that renewal methods compete against new business methods, not other renewal methods.

There are many potential reasons for using risk adjusters in small group renewal rating, including the following:

1. Risk adjusters were developed to predict morbidity, and numerous studies have proven their effectiveness.
2. Risk adjusters can be calibrated to the specifics of a block of business (i.e., relative costs for different conditions, provider networks, benefit design, etc.).
3. Risk adjusters can use prescription drug data by itself and still produce good morbidity estimates. This is a very interesting characteristic as claims completion is not available when a renewal is prepared and prescription drug claims run out very quickly.

Risk adjusters are not free, and licensing costs can be significant. In addition, implementing any new rating methods, including a risk-adjusted small group rating methodology, requires resources. Carriers need to weigh the costs and benefits of any new rating methodology, with the specifics of their block of business in mind.

Study Methods

Last fall, Milliman partnered with two small group carriers and launched a study to identify the optimal methods to renew small groups. We focused on risk adjusters in addition to studying the best way to use all of the information available at renewal, such as historic claims. Our study was performed with real-world conditions in mind, including state rating limits, which can vary substantially. For example, California allows a rating adjustment of only ± 10 percent due to health status, while Idaho allows ± 50 percent. Our error values were calculated relative to allowed rating action. For example, assume two different renewal methods estimate the health status of a group at 1.50 and 1.55. Also assume that the allowable rate variation in the state is only ± 35 percent and actual claims turn out to be 40 percent above average due to health status. In this example, we would identify both methods as producing the optimal answer—they both would assign a health status for this group as high as possible. In a statistical measurement for this case, we would set the mean absolute prediction error (MAPE) equal to zero and we would also set the sum of squared errors to zero (this translates to an R-squared of 1.0).

The other important real-world conditions faced by health plans include turnover and the fact that they are competing against other carriers' new business methods, not their renewal methods. Members active



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during the historic period are not necessarily the ones who will be active during the rating period. Further, even the members that are active at the time the renewal quote is developed may not be around during the entire rating period. This condition dampens the value of historic information for developing projections, because information for only a portion of members is available. We analyzed one set of carrier data and found that approximately 15 percent of the members active during the rating period did not have complete data for the experience period immediately prior to the renewal (eight or nine months of data for first renewal).

Previous studies have quantified the impact of using risk adjusters without considering state allowable rate variation limits. In addition, previous studies have simulated market conditions by pitting renewal methods directly against each other. Under actual market conditions, renewal methods compete against other carriers' new business methods. This is an important distinction. Typical new business methods are significantly less predictive than renewal methodologies, and the distribution of new business predictions is very different than the distribution of renewal business predictions.

We used claims, membership and premium data from a small group carrier, along with their manual rating formula in our study. In addition, we used a large set of individualized data from a variety of carriers. The individualized data did not include manual rates or actual small groups. The carrier information was used to study results under real-world conditions, while the individualized data, with its larger size, was used to measure the impact of relatively small changes in methodology. We were particularly careful not to calibrate methods on the same set of data against which we were testing. Our calibration steps were designed to mirror the approach a carrier would use to calibrate their methods. (We used different time periods for calibration and testing, instead of splitting data for the same time period into calibration and testing pieces. Splitting the data would require more data than most carriers have access to.)

Study Results

We compared the PMPM MAPE expressed as a percentage of the claims PMPM for traditional methods and for traditional methods supplemented with risk adjusters. MAPE is calculated as the absolute value of the difference between PMPM predicted values and PMPM actual values. Smaller MAPE PMPM percentage values indicate better precision. MAPE values decrease with smaller allowable rate variation, because there is less variation to predict. In addition, MAPE values decrease

as group size increases because costs approach the mean as group size increases.

The following table shows MAPE PMPM percentage results for the first renewal using the individualized data. We also studied the marginal improvement in prediction at second renewal and the results were similar.

MAPE (as %)

Methodology	1 Member Uncapped	10 Employees Uncapped	10 Employees ± 35%
Manual Rate	101.02%	36.81%	25.53%
Traditional Methodology	90.75%	33.89%	22.51%
Risk Adjuster Methodology	82.67%	31.95%	20.86%

The methodology used to calculate the error values above is a traditional loss ratio approach, applied in an optimal way (meaning with credibility weights that minimize the sum of squared error and other values calculated appropriately). The risk adjuster methodology uses both risk adjusters and traditional methods.

Implementing any new rating methods, including a risk adjusted small group rating methodology, requires resources.

As shown in the previous table, the MAPE is smallest for the risk adjuster method. Also, the MAPE results are very similar for all three methods (method one being a manual rate without any experience adjustments), especially with rating limits and for larger groups. The distribution of predictions compared to actual results presented later in this article helps understand this further.

R-squared measures the percentage of the variation from the mean that is explained by the rating methodology. An R-squared of one indicates that the method explains all of the variation from the mean, while an R-squared of zero indicates that the method does not explain any of the variation from the mean. Therefore, greater R-squared values indicate better precision. The following table shows preliminary R-squared results for the first renewal (second renewal results were similar).

R-Squared

Methodology	1 Member Uncapped	10 Employees Uncapped	10 Employees ± 35%
Manual Rate	0.0571	0.0438	0.1617
Traditional Methodology	0.1645	0.1638	0.2779
Risk Adjuster Methodology	0.2408	0.2527	0.3081

As shown in the R-squared table, the risk adjuster methodology outperforms the traditional methodology for one-employee groups without rating limits, and for larger groups. As the group size increases, there is less variation from the mean to explain. However, the risk adjuster methodology still does a better job of explaining that variation than traditional methods.

We also tested using traditional information by place of service (inpatient, outpatient, prescription drug). Our results are very promising and some error measures actually show this methodology outperforming methods that use risk adjusters. This approach results in a low credibility weight for historic inpatient costs, and relatively high weights on historic outpatient and prescription drug costs.

Another way to compare methods is to look at how well they assign groups into their cost categories—below the allowable rating variation, within the rating variation and above the rating variation. Assigning members into broad cost categories is a strength of risk adjusters and we expected them to perform well using this measure.

The following grid shows the nine possible combinations of actual and predicted costs relative to the allowable rating variation with the x-axis being predicted costs, and the y-axis being actual costs (the example illustrated is relative to ±35 percent allowable rating variation). All errors are expressed as a percentage of base rates:

ACTUAL	Actual > 1.35. Predicted < 0.65. Error = 70%	Actual > 1.35. Predicted within 0.65 to 1.35 Error ≈ 35% on Avg	Actual > 1.35 Predicted > 1.35 Error = 0%
	Actual within 0.65 to 1.35 Predicted < 0.65 Error ≈ 35% on Avg	Actual within 0.65 to 1.35 Predicted within 0.65 to 1.35 Error = Actual – Predicted	Actual within 0.65 to 1.35 Predicted within 0.65 to 1.35 Error ≈ 35% on Avg
	Actual < 1.35 Predicted < 0.65 Error = 0%	Actual < R.L. Predicted < R.L. Error ≈ 35% on Avg	Actual < 0.65. Predicted > 1.35 Error = 70% Predicted
PREDICTED			

For example, the top middle cell in the grid above describes a situation where the carrier estimates that costs will be within the allowable rate variation (between 65 percent and 135 percent of manual

rates), but costs actually turn out to be greater than the allowable rate variation (more than 35 percent above manual rates).

In the same grid, we have included the MAPE (or a rough estimate of the average MAPE) specific to each cell. For example, in the upper left cell, actual costs are greater than the allowable rate limit, while the prediction would be made below the allowable rate limit. Therefore, the Mean Absolute error in this instance would be the full length of the rating variation or 70 percent (actual costs are limited to 1.35 x manual rates, and predicted costs are limited to 0.65 x manual rates in the error calculation, so the difference is 0.70 x manual rates).

The following grid, using the definitions just mentioned, presents the proportion of groups in each cell for traditional methods with a ± 35 percent rating variation, and one employee groups:

Traditional Method, 1 Employee Groups, ± 35%

ACTUAL	0%	15%	6%
	0%	20%	2%
	0%	54%	3%
PREDICTED			

When we ran regressions against historic loss ratios and manual rates for predicting costs, the weight for historic loss ratios was very low (about 15 percent). The previous table shows that the predicted costs do not go below the allowable rating variation because of this low credibility for historic costs.

The table below shows the results for the risk adjuster method (one employee groups, ± 35 percent rating variation). This method has a fairly high weight for the risk adjuster (about 80 percent). As can be seen by this table, 32 percent of the groups were predicted to have costs below the allowable rate variation.

Risk Adjuster Method, 1 Employee Groups, ± 35%

ACTUAL	2%	8%	11%
	3%	13%	7%
	27%	25%	5%
PREDICTED			

The risk adjuster puts 51 percent of the groups into the “correct” categories (highlighted on the diagonal), while the traditional method only puts 26 percent of the groups into the “correct” categories.

The following table shows the results for the risk adjuster method for groups of 50 employees:

Risk Adjuster Method, 50 Employee Groups, ± 35%

	0%	7%	0%
ACTUAL	0%	91%	0%
	0%	2%	0%
	PREDICTED		

As this table shows, 91 percent of groups end up with costs within the allowable rate variation and are correctly predicted to be in this range. Further, the risk adjuster methodology does not estimate any groups outside of this range. The table for the traditional methodology is nearly identical.

These results show that traditional methods and renewal methods perform very similarly when rating limits and group size are introduced into the analysis.

Analysis on Carrier Data

As discussed earlier, we also modeled optimal methods on carrier data. This analysis addresses important limitations in the analysis based on the individualized data, including the following:

1. The individual analysis was performed by randomly creating groups from individual information as opposed to using actual small groups.
2. The full manual rating formula was available for the carrier’s block of business.
3. The Standard Industry Code (SIC) information and rating variables were available. SIC rating variables estimate morbidity differences due to the industry of the group. Therefore, SIC rating adjustments can (typically) be used in addition to health status factors, essentially increasing the total allowable rate variation due to health status.
4. The actual turnover information was available. Because employees and members leave and enter employers, historic information (i.e., claims, diagnosis codes, etc.) is only available for a subset of the members being rated.

Our results for the carrier data show that methodologies that include risk adjusters lose much of their advantage under real-world conditions. Some of these real-world conditions could possibly be mitigated through process improvement (e.g., getting medical applications for new enrollees).

The absolute error is larger than that calculated in our individualized analysis because of turnover, and possibly adverse selection. The groups present in a block of business are only those that accepted a renewal rate. Therefore, they include groups who sought a new business quote from another carrier, and decided to accept the renewal quote.

These results show that traditional methods and renewal methods perform very similarly when rating limits and group size are introduced into the analysis.

While our analysis of the individual and carrier data considered the total health status factor variation allowed by states, we did not model the impact of state limits on the amount that the health status factor can vary from one year to the next (i.e., the health status factor cannot increase by more than 15 points). This additional constraint further limits rating action and dampens the predictive ability of any renewal method (i.e., you cannot move rates as much as your rating method predicts that you should).

We assumed that nine or 21 months (first renewal and second renewal respectively) of paid claims data would be available for both the traditional methods and risk adjuster methods when renewal rates were developed. If less data is available at the time renewal rates are developed, the differences between the two methods could change slightly. We would hypothesize that risk adjusters would lose less value because prescription drug databased risk adjusters perform well and prescription drug data completes more quickly than medical data.

The commercially available risk adjusters identified as top performers in the 2002 SOA study include ERGs, DxCGs, RxGroups and several others.¹ We used the ERG risk adjuster software in our analysis. This risk adjuster was identified as the most predictive in the SOA study. This study was focused on quantifying the predictive power of the commercially available risk adjusters. It was not intended to consider risk adjusters in the context of small group renewal rating.

(continued on page 23)

¹ See the 2002 research study sponsored by the SOA, “A Comparative Analysis of Claims-based Methods of Health Risk Assessment for Commercial Populations”

Taking a Closer Look at Enterprise Risk Management

by Kara L. Clark

This article is Part I of a two-part piece on Enterprise Risk Management. Part II will appear in the next edition of Health Section News.

Enterprise Risk Management (ERM) was named as one of the top 20 best new ideas related to management by the editors of *Harvard Business Review* in 2004, and yet it doesn't seem to factor significantly on the radar screens of most of the health actuaries I talk to in the course of my work.¹ As a staff member of the Society of Actuaries, my exposure to ERM has grown considerably over the past couple years. It's now a key element of the SOA's strategic direction—one we're working on in full partnership with our sister organization, the Casualty Actuarial Society (CAS). How is ERM different from and an improvement over traditional risk management? After all, banks and insurance companies have been managing risks in some incarnation for years; otherwise, they wouldn't be in business. Part of the answer to this question is addressed in this article.

The intention of this piece is to introduce the general premise of ERM to those of you who are just now starting to hear about it. We're likely all familiar with the Ruskin quote, "The work of science is to substitute facts for appearances and demonstrations for impressions." In this case, however, I'm going for the very unscientific "gist" of it.

What is Enterprise Risk Management?

As an evolving discipline, there is no one single definition of ERM. The CAS Committee on Enterprise Risk Management defined it as follows (the italics are mine):

"ERM is the discipline by which an organization in any industry assesses, controls, exploits, finances and monitors risks from all sources for the purpose of increasing the organization's short- and long-term value to its stakeholders."

There are three main take-aways from the CAS definition. The first is that ERM is about integration; that is, moving from a siloed view of risk to one that is holistic. It involves looking at the correlations

between risks across the organization. Which risks get worse when they are combined, and where are there some natural hedges? The area of integration is one in which ERM takes "traditional" risk management to a new level.

The second is that it can involve opportunities related to risk. ERM is not only about minimizing or mitigating risk, although that more traditional view is certainly part of it. But if you don't seize strategic advantage from ERM, you are missing out on some of the benefits it can provide to your organization.

Finally, it is a discipline that can apply to any industry. In healthcare, actuaries tend to work for insurance companies, health plans and consulting firms. ERM provides us an opportunity to apply our skill sets to other stakeholders within healthcare, such as providers, pharmaceutical companies, medical device companies and other industry suppliers.

What are the Benefits of ERM?

At its core, ERM is about seeking and identifying better information to make better decisions. Dr. Shaun Wang, FCAS, ASA, highlights the following elements of ERM's value proposition in the March 2004 newsletter of the Risk Management Section²:

- Risk opportunities
- Robust risk intelligence information
- Alignment of incentives
- Cost reduction
- Better coordination

At the ERM Essentials Workshop in Chicago on May 1, I heard Prakash Shimpi, FSA, and David Ingram, FSA, talk about how the ERM process can provide "credible insights." That is, we can't anticipate and plan for every possible contingency, but if we plan for "enough," we can develop some credible insights that we can then draw upon when and if something "unlikely" does happen. One example would be the relatively recent New York City blackout. By and large, there was an absence of panic during that event, which may have been due in part to the new emergency procedures developed by NYC authorities as a result of the 9/11 attacks.



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¹ *Breakthrough Ideas for 2004: The HBR List*. (2004) Harvard Business Review. Vol 82, Number 2: 13-37.

² Wang, Shaun (2004). *Where is ERM Heading?* Risk Management (newsletter of the SOA's Risk Management Section). Issue No. 1: 4-7.

The ERM Movement

A few regulatory catalysts over the past several years have spurred the ERM movement in a few industrial pockets—primarily overseas and within the banking industry. How ERM has played out in those areas (for example, employing various ALM and other sophisticated financial techniques) may look different than it might within U.S. healthcare, which may be another one of the reasons why it seems to have a lesser foothold in our industry. Yet many of the newer regulations and catalysts apply to healthcare organizations as well—Sarbanes-Oxley, rating agency pressures and the general public demand for greater transparency—which suggests that ERM may well have a place in healthcare in the near future.

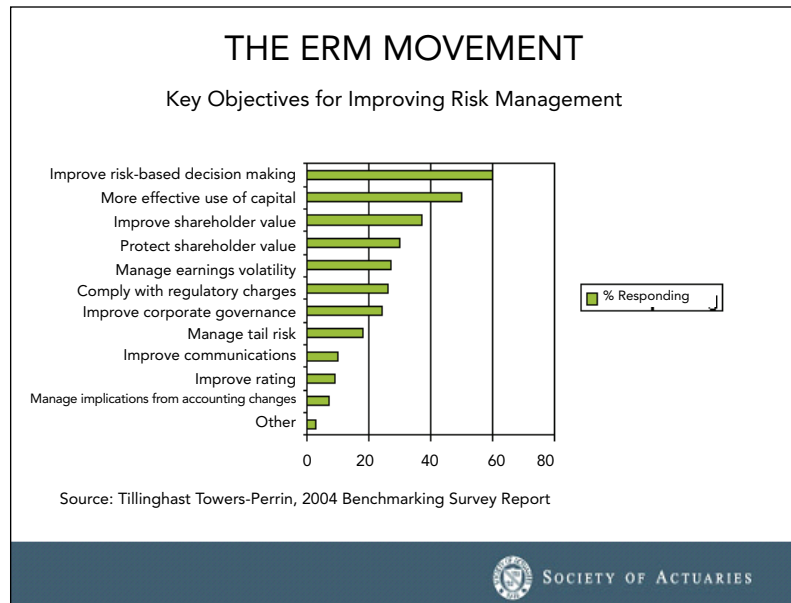
The Tillinghast 2004 Benchmarking Survey Report on risk management practices of senior executives of large insurance organizations around the world noted that “86 percent of respondents said that ERM is more of a priority today than it was a year ago.” The graph from that survey illustrates the prior point about ERM’s benefits. As you can see, the most common answer given as a “key objective for improving risk management” is about better decision-making, and the top three are really more about potential up-sides than defensive measures (compare “improve shareholder value” to “protect shareholder value”).

This discussion isn’t to suggest that ERM doesn’t have its challenges. One of the most significant as an organization considers implementing ERM is being able to justify its expense. ERM will cost an organization in both hard and soft dollars. What kind of return might it generate for this investment? It can be challenging to identify and measure losses that didn’t happen because an effective ERM process was in place. Exploited opportunities due to ERM present another measurement challenge. For example, how do you accurately or fully quantify the impact of your firm in being “first to market” instead of second? And even if you are able to quantify these avoided bad outcomes or capitalized opportunities, are you able to demonstrate that they are really the result of an effective ERM program? Despite these challenges, however, ERM appears to have a lot of momentum in the marketplace.

The ERM Process

I hope you’re starting to get a feel for ERM. I’d like to go into a little more depth now and discuss the steps involved in the ERM process.

Risk is the product of two essential ingredients: uncertainty (both in likelihood and magnitude) and preferences. Preferences are key. Even with



uncertainty, if we don’t care which outcome happens, we don’t have a problem. In the case of ERM, we are concerned about the preferences of the owners of the enterprise, who will care about the totality of the organization, over the preferences of any other group, who may have a more siloed, individual perspective.

ERM is an action-oriented process. And while it is creative, dynamic and proactive, it also requires the application of a consistent, disciplined framework. At a very high level, this framework involves three major steps:

- Risk identification and classification
- Risk measurement and prioritization
- Risk management and aggregation

An important tenet of the identification and classification step is to include all key exposures—even those that are extremely unlikely and/or those that are very hard to measure quantitatively. It can be easy to miss sources of risk; new sources are created or evolve constantly. The need to identify all sources of risk—and *quickly*—is one of the reasons why ERM requires a disciplined process.

Common risk categories that you’ll often see described relative to an ERM framework include:

- Market risk - external factors that affect the entire economy and/or specific industries
- Credit/underwriting risk - selection and monitoring of counterparties
- Operational risk - process quality and control

The SOA's Health Risk Management Group has been focused on this "risk identification" step for the past year or two, and in the process, has developed a "risk mapping" document for health plans/health insurance organizations that can be used in support of this step. The risk categories defined in this document are grouped a bit differently from those previously outlined, in order to more readily illustrate relevance to the health insurance marketplace. The current version of the risk mapping document can be found at http://rmtf.soa.org/lrm_mapping_hcr.doc.

The next step, risk measurement, involves identifying unfavorable outcomes and the likelihood they will occur. It also involves identifying and understanding the relationship between the drivers and potential outcomes of a process or event. If those drivers change, how might the outcomes change? As you might know or can imagine, this risk measurement step is easier said than done. Some of the challenges involve (but are not necessarily limited to):

- A lack of data
- "Tail" data – or potential outcomes with very low probabilities, where we have even less data
- An ever-changing environment

Therefore, risk measurement can be described as both an art and a science. For some of the more nebulous risks (such as reputational risk), it might require the use of a 1/2/3- or High/Medium/Low-type scale. It's important that a risk not be ignored or discounted simply because it's difficult to precisely assess.

At its core, ERM is about seeking and identifying better information to make better decisions.

Once individual risks are measured, you also want to aggregate them at the enterprise level. This step will involve taking into account and recognizing their correlations. Which few highly unlikely events have a manageable impact if they happen in isolation, but turn into the "perfect storm" if they happen at the same time? Are there any natural hedges that emerge once you look at risk exposures across the organization?

Finally, the ERM process involves risk management. Risk management requires first establishing the organization's risk-tolerance levels in order to set objectives and develop action plans relative to the risks that have been identified and measured. These action plans should allow the enterprise to operate within its risk boundaries while protecting key resources and satisfying external monitors.

Frequency	Severity	Method(s)
Low	Low	Self-Insure
Low	High	Insure
High	Low	Loss control; partial insurance
High	High	Avoid

There are various means for managing risk. From a financial perspective, some of the traditional ways include³:

New financial management techniques are emerging to offer a wider range of possible tactics for dealing with various risks. The management of other nonfinancial risks (operational, strategic, etc.) may involve contingency planning or conducting "fire drills". For example, an insurance policy may be available to protect a firm financially from product liability, but the negative impact to a firm's reputation because of a product failure can't be managed in the same way.

Recent Developments in ERM

As we've already seen through the results of the Tillinghast survey, there's a move in the market toward the idea that there is more to risk than buying insurance, and that a good risk management process can enhance value to an enterprise by reducing risk and increasing transparency.

In a broadcast on CNN's "The Money Gang," Prakash Shimpi discusses this aspect of the importance of enterprise risk management, as well as how an actuary's skills are well suited to this position of strategic importance. You can view the media clip of this interview on the SOA's Web site, at <http://www.soa.org/ccm/content/about-soa-member-directory/SOA-actuaries-in-action/>

In Part II of this article, we'll take a closer look at how the evolving discipline of ERM can be applied to healthcare organizations (referring to the health risk mapping document noted above), and finally, how you can start to incorporate ERM principles into your daily work. In the meantime, feel free to contact me with your experiences and questions about ERM. I'd appreciate hearing from you and learning more about how ERM is being discussed and applied by healthcare actuaries.

I would like to thank Cheryl Krueger and Narayan Shankar for support in the development of this article, and Rajeev Dutt, Trevor Pollitt, John Stark and Sudha Shenoy for peer review. 📧

³ Baranoff, Etti G. (2004). *Mapping the Evolution of Risk Management*. Contingencies. July/August 2004: 23-27.

Highlights from the Annual Meeting of the Group Underwriters Association of America

by Ruth Ann Woodley and Alyssa Zabloudil

The first jointly sponsored Group Underwriters Association of America/Society of Actuaries meeting was a success with many industry professionals finding value in having members from both organizations in attendance. Since actuaries and underwriters work so closely together in managing risk for their companies, the sessions provided opportunities for honest discussions facing the industry today. Sessions covered topics on group life, disability, medical and dental.

The meeting was held at San Francisco's Grand Hyatt on Union Square from May 22-25. Featured speakers, such as Terry McAuliffe (former Democratic National Committee chairman) and Dr. Dale Henry (noted educator and speaker), and fun activities, like a city tour and dinner on Fisherman's Wharf, rounded out the experience. A description of session highlights follows.

Group Life and Disability

On the group life and disability side, 2004 industry profits improved for long-term disability, short-term disability and group term life products. Profit improvement was due primarily to lower loss ratios. Investment returns and sales growth are continuing challenges for the industry as a whole.

Both actuaries and underwriters are becoming more creative at increasing sales for their companies. There has been little market growth in the ancillary markets—the industry is just churning business between companies. The greatest opportunity for growth is seen in the worksite market as employers continue to be challenged by concerns over the rising cost of health care.

There is an increasing number of risk management tools at the fingertips of actuaries and underwriters. Companies who can efficiently mine data and use it to manage their blocks of business (on both macro and micro levels) will be the most successful. There was considerable evidence at the SOA/GUAA meeting of companies becoming more efficient with data management (i.e., maximizing the use of census data when underwriting a case and using various business analysis tools for financial underwriting).

The well-known "Let's Talk Shop" sessions at GUAA allowed actuaries and underwriters to compare industry practices and talk about risk management solutions to common issues facing many companies.

The Long-Term Disability and Life Experience Committees of the Society of Actuaries have been working hard to develop new valuation recommendations for long-term disability claims and group life waiver claims. The LTD experience table is expected to be finalized later this year and a valuation table proposal is expected in 2006. Preliminary results indicate little variation in overall reserves as compared to Table 95a.

Medical

On the medical side, "Let's Talk Shop—Medical" offered a chance for participants to share their ideas and experience with recent market trends. Many agreed that customers are reluctant to change carriers this year and new case sales are unusually difficult to come by. A few companies are trying to improve their close ratios by offering new features like longer-than-12-month rate or fee guarantees or guaranteeing network discounts. Many are working hard to keep rates competitive by quoting multiple plan design options or expanding medical underwriting to larger case sizes. Some other trends discussed were bariatric surgery (covered by most carriers), consumer directed plans (lots of quoting but few sales so far) and increased requests for coverage of early retirees with no employer contribution.

"Troublesome Trends in Buying Behavior" covered some of the ways that brokers and customers are increasingly structuring plans to steer their better risks into an ASO plan and their high-cost employees into a fully insured HMO. Milliman actuary Leigh Wachenheim discussed some specific trends and issues observed, in particular: 1.) setting up a new fully insured subsidiary that happens to include higher-cost members while the remainder of the group is ASO, 2.) establishing a high-deductible insured plan and a fund to reimburse employees for some or all of those costs, without disclosing the existence of the fund during the quote process and 3.) establishing employer and employee



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contribution levels that incent healthy members to choose the ASO plan with lower benefits over the fully insured HMO. (She referenced the article “New Risks for Health Insurers and HMOs” by Steve Kaczmarek and Bill Thompson, available at <http://www.milliman.com>.) Underwriting leaders from Tufts Health Plan shared case studies on how some live cases were handled.

Recommendations for managing (and hopefully reversing) the situations discussed were: reducing benefit levels on the HMO product to bring the plan and employee contribution closer to the ASO; requiring that the HMO be the only plan offered in areas where it is available; reducing pooling levels so customers see more of their own experience in the rates; or setting rates that cover the increased costs and further anti-selection expected at the next enrollment (while giving the client plenty of notice on those large increases). One case study demonstrated great success reversing a situation where a carrier had only a small and disproportionately sicker piece of an account’s membership. They decided to aggressively set rates below the other offered plan to attract a healthier membership, and so far they have seen a dramatic change in their memberships’ profile. In addition, some carriers have refused to work with certain brokers who have demonstrated a tendency to use these types of tactics against the HMO.

“What’s Happening to Stop Loss?” featured a range of perspectives from a stop-loss reinsurance actuary (Ira Slotnick of Converium), an actuary for an insurer writing stop loss on its own ASO accounts (Greg Sullivan of Cigna Healthcare) and an underwriter for an insurer writing stop loss with TPA’s (John Llenaugh of Mutual of Omaha). All agreed that the market is still somewhat soft and it is difficult (if not impossible) to sell the high rate increases needed to cover leveraged trend. Determining the value of network discounts to stop loss is also a challenge, especially when relying on data from outside TPAs or MGUs who may not have access to details about hospital contract provisions for catastrophic claims. Some underwriting techniques and rules continue to

be used to protect the carriers—no one has given in to pressure for multi-year rate guarantees, and lasers are still common. Some in the industry have considered or tested using predictive modeling tools in underwriting, but most have found it cannot take the place of manual review by specialized nurses and underwriters.

Dental

The session, “Direct Reimbursement Plans” described this unusual but growing option, where employers reimburse a set percentage and/or dollar amount of employee claims, without restricting covered providers or procedures. The presentation showed that some employers have found they can define their own benefit structure to limit costs while also reducing employee confusion and complaints. In “Tackling Challenges for Group Dental from Small Groups to Jumbo Cases,” SOA members Ray Martin and Neal Luitjens discussed typical industry parameters by case size segment, such as target loss ratios, morbidity loads, distribution systems and costs and plan designs.

There were also several interactive dental sessions including “Let’s Talk Shop—Dental,” which covered how many of the same trends seen on medical affect this product, and the increasing prevalence of voluntary and even individual plan offerings. In wide-ranging conversations on the “Generalist vs. Specialist Underwriter Model” and “Developing the Underwriter” participants shared ideas and lessons learned on effective organization structures and practices.

The efforts of the GUAA and SOA members who worked to put this meeting together are greatly appreciated. Group benefits actuaries are encouraged to attend a meeting in the future. More information about the Group Underwriters Association of America, including a calendar of future events, is available at <http://www.guaa.com>. 📧

What's New on the Rx Management Horizon?

by Jeff Schulte

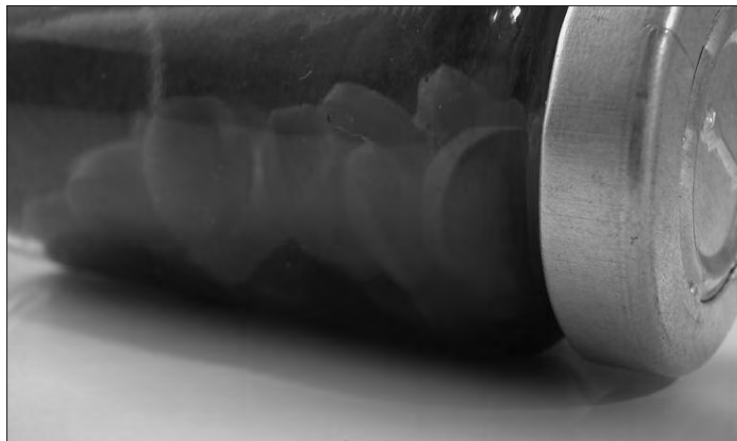
Today you can't really pick up any health care publication without being barraged by articles focusing on rising drug costs, Canadian and international drug importation regulatory issues, Attorney General pharmacy investigations and the ongoing Medicare Part D Rx Program implementation adventures. The effective management of prescription drug utilization and coverage continues to represent one of the biggest challenges facing insurers, managed care organizations, employers and consumers alike. As of October 2004, more than 200 new drugs are currently awaiting formal FDA approval and many of these represent very expensive, high-tech formulations and specialty injectables that will raise the pharmacy cost trend even higher into 2005 and beyond. Other notable recent drug trends are highlighted as follows:

- Rx utilization continues to increase at a dramatic rate. Today 46 percent of Americans take at least one Rx per day, and nearly one third of adults are on multiple Rx regimens.
- The average cost per brand drug has risen from \$45 in 2000, to nearly \$80 today.
- Consumer directed advertising has proven to dramatically shift the prescription utilization patterns in effect today. Studies have shown that approximately 40 percent of the time patients suggest a specific brand name drug to their physician (usually as a result of an ad seen on television) and as much as 75 percent of the time the physician actually prescribes the requested brand or similar medication.

Alternative Prescription Program Offerings

Today, carriers, managed care organizations, employers, associations and sponsoring organizations are exploring new prescription program options including:

- **Discount Rx Programs** – With this program, the actual funded Rx benefit is eliminated and is replaced with access to national retail and mail order pharmacy networks providing discounts on all medications with no reimbursement risk to the sponsoring organization. Most national pharmacy benefit managers provide this type of program at little to no cost to the sponsor. In addition, it is usually possible to create an arrangement whereby a small revenue stream is generated for the sponsor from program participation.



The effective management of prescription drug utilization and coverage continues to represent one of the biggest challenges facing insurers, managed care organizations, employers and consumers alike.

- **Comprehensive Value-Added Discount Program Offering** – Many times the Rx discount program is combined with ancillary discounts on dental, vision, hearing, chiropractic, retail products and other benefits to create a more comprehensive, value-added package that can be offered at price points ranging from little or no cost up to levels that are comparable with funded benefits. Many of our clients have begun to offer these programs to their members in lieu of traditional health insurance packages. These discount programs typically utilize Rx discount offerings as the lead product and they can be private labeled for the client to increase and enhance customer loyalty and retention. The product offerings also frequently generate some consistent back-end revenue for the sponsoring organization.
- **Stand Alone/Carved out Rx Benefits** – Similar in evolution to the movement in the dental industry to carve out dental benefits and provide stand-alone offerings, many organizations are now looking to market a separate, stand-alone funded Rx benefit to their various points of distribution. As providers for these products continue to gain experience in managing adverse selection and Rx risk, programs are beginning to gain momentum in this market, including the following more popular benefit design configurations:

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- Generic co-pay, brand discount
- Two- and three-tier co-pay programs with appropriate front-end deductibles, annual maximums, etc.
- Mandatory generic programs

As with dental, the risk or “paper” for these programs can be held internally or can be secured through outside risk arrangements

- **Higher Member Cost Share Designs** – Taking on many different forms, benefit designs have been established with the consistent goal of making the member, employee or insured responsible for a greater portion of the overall Rx drug cost. From member cost share averages in the 10 to 25 percent range just a few years ago, many plans are now achieving shares of more than 50 percent by laying in:

- Higher front-end deductibles
- Combination co-pay and coinsurance benefit designs
- Mandatory or very aggressive generic incentive utilization programs
- Step therapy programs designed to direct first line therapy to the lowest possible priced Rx
- Plan stop losses on back side
- More defined formulary that limits brand drugs within selected therapeutic categories

- **Defined Contribution Programs** – These programs are pre-arranged pools or funding levels established for Rx expenditures that will redirect management of Rx “budgets” onto the shoulders of the consumer and away from the sponsor. Many of our clients and associates are beginning to promote these types of programs within their marketplace. Our prediction is that with prolonged uncertainty regarding potential governmental intervention into Rx coverage nationally, and with continued increases experienced in Rx cost, more organizations will look toward these types of new program offerings in their ongoing efforts to minimize their Rx risks and stay competitive in a very challenging marketplace. Many large payors are now actively developing programs that will be marketed to all levels of consumers, which in our opinion will also help drive the marketplace adoption.

With the prospect of continued rising pharmacy costs looming over the heads of providers throughout the country, many sponsoring organizations are actively exploring ways to provide competitive pharmacy benefits, while lowering or minimizing their ongoing pharmacy risk through alternative discount-only programs without funded benefits, increased cost sharing on funded benefits and defined contribution programs. We look for continued attention to growing concern over costs with the continued introduction of specialty injectable medications and high-tech treatments. ❏

Commercially available risk adjusters use member data and diagnosis information to assign each member into their demographic category and any relevant condition categories. Regression analysis can be used to best fit these category groupings to actual prospective costs. In this way, the specifics of the block of business can be reflected.

ERGs map each individual into their age/gender category and any of 120 condition categories. The condition categories include diabetes, heart failure and AIDS/HIV (an individual can be included in more than one condition category). ERGs also identify conditions where comorbidities are important. For example, there are separate condition categories for diabetes without comorbidities and diabetes with comorbidities.

In the study, we investigated whether the weights for different components should depend on the level of the factor and the group size. We concluded that the greater that the risk adjustment factors and/or loss ratio factors were, the greater the weight they should receive in the calculation.

Competitive Simulations

As noted earlier, renewal methods do not compete against other renewal methods. Instead, they compete against other carriers' new business methods. Therefore, simulation models should quantify the benefit of one method over another as the change in how those methods compete against new business methods.

New business methods are not straightforward to model, as new business rate setting often relies upon underwriter judgment. We had access to the uncapped new business health status factors assigned by one of our partner carriers. Using this

information, we developed a Bayesian distribution for the new business HSFs. This distribution assigned the likelihood that an underwriter would assign various health status factors based on the actual outcome for the group (i.e. given that actual results were 150 percent greater than manual, what is the probability that the underwriter assigned a HSF of 0.81 to 0.90, 0.91 to 1.00, 1.01 to 1.10, etc.). This distribution resulted in a stochastic new business health status factor that we could compare against the health status factors assigned by various renewal methods.

Our initial simulation models indicate that renewal methods that use risk adjusters just slightly outperform renewal methods that do not use risk adjusters. The marginal value of improving renewal methods decreases as the predictive ability of your competitors' new business methods decrease. In other words, if you compete against carriers with very poor new business methods, you will realize less gain in profits by optimizing your renewal methods than if you compete against carriers with better new business methods. It follows that the best use of resources may be in improving new business predictability.

Conclusion

Optimal methods for small group rating depend on many variables, most significantly the goals of the company, size of the block of business, current competitive positioning, state regulations and available resources. One place to start improving your methods is to review how you are using the information and tools you currently have to ensure that you are using them optimally. Depending on your goals and the characteristics of your block of business, it may or may not make sense to invest in more sophisticated tools such as risk adjusters. ♣



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Risky Business in the Big Easy

Highlights from the 2005 SOA Spring Health and Pension Meeting

by Ross Winkelman and Chris Stehno

The 2005 Society of Actuaries Health and Pension Sections Spring Meeting was held in New Orleans at the Hilton New Orleans Riverside Hotel June 15-17. The Cajuns were well-equipped for our visit, and attendees were ready to "laissez les bons temps roulez," which means, "Let the Good Times Roll!" Great music was pouring out of every nook and cranny on Bourbon Street and not a bad meal was to be found (even the airport restaurant had delicious Oyster Po' Boys).

We do not think any of the attendees actually conquered Bourbon Street, but based on groups we saw running around, the meeting attendees gave its rowdy joints a fairly good run (we know they'll miss the authors at the Funky Pirate). Thursday night's riverboat cruise, primarily set up by Linda Damitz and Lois Chinnock of the SOA, was a big success. We started out at the dock near the hotel and cruised the Mississippi for three hours, with great food, drinks and a three-piece Dixieland band providing the entertainment. Despite the obvious attractions outside of the meeting, the sessions were well attended and the list of expert speakers was long and distinguished.

The format for this year's meeting included embedded seminars alongside the traditional 90-minute sessions. The seminars presented a single topic in greater depth over two or more sessions. The embedded seminars were set up so that attendees could go to a part of a seminar and still gain valuable knowledge, or they could go to the entire series and really cover a topic in-depth. This year's embedded seminars included "Financing Chronic Care," "Affordability: The Market Response," and "An Introduction to Care and Disease Management Interventions." We caught up with Amy Pahl, the 2005 Spring Program Committee Chairperson, and asked her about the new format. She said, "The new embedded seminar format was generally very well received. The sections worked together to develop the topics and content. I think this collaboration was the key to making them so successful."

Covering the meeting was a daunting prospect. In total, there were over 70 sessions and 140 presenters, including 51 guest speakers. Given that the two of us could only be in a couple of places at once, and we had a limited amount of space in this issue in which to cover the meeting, we may have not mentioned your favorite session or presenter but it was not due to lack of interest!

SOA President Stephen Kellison opened the meeting at the general session by speaking about the ongoing image campaign: Actuaries turn risk into opportunity and are the best-kept secret in business. New ASAs and FSAs were recognized and warmly welcomed to the Society. The candidates for 2006 president-elect spoke, explaining their visions for the SOA. The interested reader can find these speeches on the SOA Web site at http://elections.soa.org/elections_2005/video.html.

David Axene of Axene Health Partners spoke at the provider contracting session. He presented the results of a survey of health plans' provider contracting methods. The survey resulted in some interesting conclusions regarding best practices, including the following:

- 1) Plans using actuaries in their provider contracting efforts were getting better results than those not using them. Among other things, this allows health plans to tighten up the link between provider contracting targets and pricing assumptions. Further, actuaries should report within the provider contracting areas to encourage full participation and disclosure.
- 2) Health plans emphasizing a collaborative approach to contracting between the health plan and providers were seeing process improvements and better outcomes. This approach requires open sharing of data, which leads to (and requires) trust between the health plan and provider.
- 3) Incentives improved the performance of provider contracting staff.



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- 4) When changing methods a “just do it” strategy seems to get the best results (i.e., pain spread over a shorter period of time, less disruption).
- 5) Contracting strategy should be coordinated with medical management strategy for best results.

Cathy Murphy-Barron of Milliman also spoke at the provider contracting session. She talked about the physician reimbursement issues that are receiving the most interest at the moment. A large number of patients would like to get their simple questions answered via e-mail. Surveys suggest that doctors are open to this idea as long as they are compensated for their time. The idea is gaining interest with health plans that realize paying for e-mail consultations may prevent higher -ost office visit claims. These consultations are particularly useful for monitoring patients with chronic illness and also provide ready-made documentation for the patient file.

Cathy also discussed pay-for-performance arrangements where physicians receive a bonus for meeting quality of care criteria. This approach aligns financial incentives with improved outcomes. Some of the quality measures Cathy has seen in use include preventive care measures (such as pediatric immunizations and mammograms), appointment access, patient complaints, turnover rates, use of practice guidelines, HEDIS measures and member satisfaction surveys.

We asked Cathy if there are any pitfalls associated with pay for performance. She replied, “Whichever quality measure is chosen, the doctor must be able to quantify it and impact the outcome. If not, then the payer may inadvertently penalize doctors rather than provide a reward based on outcomes that they can influence.”

One of the co-reporters for this article, Chris Stehno of Milliman, presented on lifestyle-based analytics at the session on lifestyles and health costs. In this session, Dr. Thomas Kravis of Reden & Anders reported on the complications and costs tied to obesity. Dr. Kravis went on to say that one of the biggest difficulties for actuaries in estimating these costs is that the disease is not coded and therefore difficult to measure/predict.

This led nicely into Chris Stehno’s presentation on a new technique for the estimation and prediction of lifestyle-based health risks like obesity.

Lifestyle-based analytics uses consumer data sets such as demographic, financial, psychographic (buying trends) and lifestyle to build predictive models which can be used for individual medical trends, costs analysis and underwriting. This led to a lot of discussion surrounding what exactly “big brother” knows about us (and that we should use cash instead of plastic).

The session on electronic medical records was both exciting and troubling. It was somewhat disappointing to learn how far off electronic records really are. The timeline for 80 percent adoption was predicted to be about 10-plus years out according to Dr. Eugene Kroch of the Wharton School. This projection was based on the adoption curves for other technologies, including home computers, email, and VCRs. A long list of reasons for adopting electronic medical records was presented, along with the barriers (unfortunately a long list as well). All in all, it appears that the future in this area is very promising, although we are going to have to wait a while for it to arrive.

There was great discussion in the small group roundtable session, lead by William Lane of Heartland Actuarial Consulting and Bernard Rabinowitz of USHEALTH Group. Attendees discussed the challenges of operating in the small group market and what hot button issues they were facing. The impending doom promised by association health plan legislation was discussed only briefly. People clearly did not want to ruin the good vibe of the Big Easy. Some noted that employers are increasingly purchasing supplemental plans that cover costs underneath a deductible where a high deductible plan is the primary coverage. The combination of the high deductible plan and the supplemental coverage creates a very rich overall benefit package. Pricing for the high deductible plan does not recognize this rich overall benefit design, although some carriers have been able to file separate benefit factors depending upon whether or not supplemental coverage was present.

The session on making disability insurance affordable was as much a session on the definition of “affordable” as it was a session on disability insurance. Going into the session, one might have assumed that affordability was directly related to premium cost. However, after listening to and following up with Bill Obert at Unum Provident and Raza Zaidi at Aetna, we discovered that affordability means different things to different groups.

In the voluntary blue-collar work-site marketplace, the expected definition of affordability is used where affordability is directly related to premium cost. In this market, participants must choose between disability coverage and other basic needs. Scott Haglund of Principal Financial Group cautioned that although cheap products can be developed, making sure to meet the needs of the insured should be carefully considered. In the executive/professional markets, affordability becomes less an issue of premium and more of a question "can I afford to not have this insurance?" And finally, in the eyes of the employer, affordability is not determined by looking at the disability product alone, but instead by looking at the product in relation to the total employer healthcare costs.

During the session for health product opportunities for smaller insurance companies, the topic of scheduled medical plans generated spirited discussion, especially concerning public policy implications for these products. The target market for scheduled medical coverage is primarily a lower-paid, hourly and temporary employee. In a follow-up with Tad Verney at Disability Insurance Specialists, he noted concerns that employees would be buying coverage that would be inadequate for their medical needs, and that policyholders might not truly understand the nature of the coverage being provided. This could lead to a high level of consumer dissatisfaction with these products.

The Stop Loss Risk-Based Capital Working Group Needs You!

The National Association of Insurance Commissioners has requested that the American Academy of Actuaries (AAA) review the various risk-based capital formulas for medical excess of loss business. They also recommend one formula that will be used for all carriers (HMOs, Blues plans, A&H insurers, P&C insurers) writing this business. As a result, the AAA has created a Stop Loss Risk-Based Capital Working Group.

The goal of the working group is to develop a stop loss risk-based capital formula that is:

- Reasonable, relative to other products
- Theoretically sound
- Relatively simple
- The same for life/health carriers, health organizations and property/casualty carriers
- Applicable to a number of products (specific and aggregate stop loss, HMO reinsurance, provider excess, carrier medical excess reinsurance)

The working group needs experience data from carriers writing medical excess of loss business. All experience will be submitted to the AAA and will be kept confidential. The experience provided to the working group will be summarized by Academy staff, will not contain the names of the carriers and will be protected by confidentiality agreements between the data owners and the Academy and supporting confidentiality agreements between the Academy and the working group members.

The request for assistance went out at the end of May. If you received the information, please contribute your data. If you write medical excess of loss insurance or reinsurance and haven't received a request, please contact Geralyn Trujillo at Trujillo@actuary.org. Thank you. 📧

Advocates for this coverage point out that comprehensive care is not financially feasible in this market, and these products play a valuable role in bringing some level of coverage to the underinsured market. To address the public policy issues, carriers should take care to educate agents and consumers on the nature of the coverage being purchased, be clear in marketing materials and not overstate the coverage provided. In addition, they should consider offering these plans in combination with other coverage such as a high-deductible medical plans or critical illness insurance in order to provide more comprehensive coverage.

Coverage of the meeting would not be complete without reporting on Wednesday's entertaining Health Section luncheon where a story from the

prior day's NBC Today Show was shown. The story's lead-in was "What do actuaries and cowboys have in common?" Well, to spoil the surprise ending, the answer is "absolutely nothing." The story covered a study done by *careerjournal.com*, which ranked different professions in terms of variables such as income, stress, physical demands, outlook, security and work environment. Actuaries were ranked at the top and cowboys were ranked at the bottom of this list. Why are cowboys ranked so low? To paraphrase a quote from the cowboy interviewed for the story – "sometimes you get bit by things."

All in all, the Big Easy was big fun, but now it's time to go home and rest up for the Annual Meeting in October. Hope to see you there. 🍷

IAA Disability Income Product Team

The Health Section of the International Actuarial Association (IAA) has formed a number of product teams to provide its members with a forum for discussion of international health insurance issues. Among these newly formed product teams are Income Protection Insurance, Long-Term Care Insurance and Critical Illness Insurance.

The IAA is an association comprised of various national actuarial associations, including the Society of Actuaries and the Canadian Institute of Actuaries. If you are a member of one of these national organizations, you are already a member of the IAA. Members of the IAA have the opportunity to join the IAA Health Section, which is a grassroots organization designed to bring together health actuaries from around the world. The new product teams will assist the IAA Health Section in its activities by providing specialized expertise on niche products.

One major focus of The IAA Health Section and its product teams are preparing a health track for the International Congress of Actuaries, to be held in Paris from May 29-June 2, 2006. Each of the product teams will be planning one or more sessions for this meeting. These teams will also support planning efforts for other international meetings, such as the East Asian Actuarial Conference scheduled for September 2005 in Bali.

Along with preparing sessions for these meetings, the IAA Health Section is also interested in fostering other forms of communication among international health actuaries. It is in the process of developing an online newsletter, e-mail listservs and Web sites with links to information sources of interest to health actuaries. The product teams will be actively involved in all of these efforts.

All of the IAA Health Section product teams are currently seeking new members and the need is particularly great for the Income Protection Team. If you or your colleagues have experience or interest in international issues, or if you know of actuaries working in these fields overseas, please consider joining (or inviting them to join) one of the new product teams by contacting Dan Skwire at dan.skwire@milliman.com. 🍷

New Opportunities Call for Actuarial Pioneers ... Are You One?

Think of a pioneer as "someone who opens up new areas of thought, research or development or one who ventures into unknown or unclaimed territory." (Webster's Dictionary)

The SOA's current image campaign is based on the belief that the actuarial skill set has value that extends beyond technical analysis into other operational and strategic roles. We know there are actuaries demonstrating this expanded value today, thereby modeling the dynamic and relevant image of the profession we are seeking to promote.

Specifically, actuarial pioneers are:

OUTSIDE the traditional sectors of insurance companies, reinsurance companies and consulting firms applying their actuarial skill set to new, nontraditional roles such as chief risk officers, financial planners, entrepreneurs and personal actuaries.

INSIDE the traditional sectors, applying their actuarial skill set in nontraditional ways to become chief marketing officers, chief risk officers, CEOs, etc.

Pioneers who are identified will inspire the profession, create practical pathways for career development and potentially serve as spokespersons to business leaders. They will be profiled through articles, Web sites and media releases.

The anticipated time commitment for a pioneer is small. Minimally, it will involve communicating some basic information to SOA staff and, at a maximum, involve a few interviews for articles or media events.

Names and contact information are to be submitted via e-mail to pioneers@soa.org. Individuals are free to nominate themselves or recommend others. SOA marketing staff will follow up on each nomination.

Upcoming Conferences

Critical Illness Insurance Conference
September 12 - 13, 2005
Renaissance Harborplace Hotel - Baltimore, MD

Anyone who currently has or is investigating a critical illness insurance product will gain invaluable knowledge from this event, especially product development specialists, marketing officers, sales professionals, senior operations executives and industry consultants.

Critical Issues in Individual and Small Group Health Underwriting
September 19 - 20, 2005
The Palmer House Hilton, Chicago, IL

Health and medical insurance underwriters and underwriting managers, along with VPs of new business, pricing and product design actuaries who are in the Health Section, medical officers and others in the health insurance industry worldwide, are sure to benefit from this education-packed seminar! 📧