The Health Care Journey Continues

By Michael L. Frank

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This is a follow up to an article "A Global Perspective of the Health Insurance Market" written in 2012. After completing our second year as Professors at Columbia University in the Masters in Actuarial Science program (the course was taught by principals at Aquarius Capital, Michael Frank and Don Rusconi), we continued the journey from the first year's class. The course provided an overview of the health care insurance industry, including products, delivery systems, health care reform, reinsurance and capital markets with focus in the U.S. and international markets.

As part of the course, students were given traditional actuarial projects in pricing, reserving and underwriting, as well as other projects and coursework to understand sales, provider contracting, disease management/wellness programs, claims management and finance. The course was an intensive program on the health insurance industry with the objective of providing detailed training as a health actuary while increasing the students' chances of reaching C-Suite roles (e.g., CEO, CFO, COO).

Rather than using a textbook to teach the course, the class material was on PowerPoint (more than 1,000 slides) and more than 200 recent health industry articles. The objective was to help students hit the ground running on their first job. Students also benefited by expanding their resume through research and experience, which is critical in a difficult job market.

Students worked independently, as well as in teams, and made presentations that often took them out of their comfort zones, exposing them to public speaking, project management, networking, and team building. Students were given homework assignments and readings to critique as part of their regular class work. We wanted to make sure that the course also covered a professionalism component, so material included the review of actuarial standards of practice, traditional health actuarial projects, and other professionalism issues.

The 2013 course was similar to the one in 2012, except for the expansion of four key areas, which are as follows:

- Study of international health care systems (ten new countries);
- Impact of health care reform, known as the Patient Protection and Affordable Care Act (PPACA);
- Retiree health systems in the U.S., including research in retiree health valuations (e.g., GASB45);
- Reinsurance.

STUDY OF INTERNATIONAL HEALTH CARE SYSTEMS (TEN NEW COUNTRIES)

Columbia University's actuarial program has students from a variety of countries. Thirty seven of the 40 students in the 2013 class were international students. As a result, the course was designed to study international health care systems, in addition to the U.S. health care system. In the 2012 course, 11 countries were selected by students–Australia, Brazil, Canada, France, Germany, India, Japan, Singapore, South Korea, Sweden, and U.K. This year's course incorporated ten new countries including Austria, Bermuda, Mexico, Netherlands, New Zealand, South Africa, Spain, Switzerland, Turkey, and United Arab Emirates. Students were divided into teams of three or four, and were instructed to research their selected countries' health care system. As part of the course, each team provided both research papers and PowerPoint presentations.

As part of the course, students teach a class for approximately 30 minutes on their specific country's insurance system, reinsurance, regulations, health care reform, market penetration, and roles of actuaries in those countries. Students also networked—with assistance from the professors in the course—with actuaries and insurance professionals in other countries to expand their research. One beneficial result of the class is that some students were able to obtain internships and employment post-graduation of the class through the contacts developed as part of their international project work.

IMPACT OF HEALTH CARE REFORM (PPACA)

With health care reform becoming a day-to-day issue for health actuaries, as well as many individuals and corporations within and outside of the insurance industry, it was important for the course to address

health care reform and its impact in the market (e.g., insurance companies, health care providers, corporations, municipalities). Students were assigned research projects around health care reform, and the results of this research were incorporated into the class. The 2012 course reflected the use of poll surveys to gauge the influence of health care reform on the consumer.

In 2013 course, additional time was devoted to the implementation and timeline on PPACA. Some of the areas studied in detail included:

- Impact on commercial (fully insured vs. self-funded) and government programs (e.g., Medicare, Medicaid, etc.);
- Strategies pursued by insurance companies and HMOs, including marketing, pricing strategy and operations;
- Impact of accountable care organizations (ACOs), as a result of health care reform;
- Impact of health care reform on other organizations serving the insurance industry including insurance brokers, third-party administrators, preferred provider organizations, disease management/wellness companies, technology companies, reinsurers, and private equity;
- Strategies around "pay or play" for corporations, as well as exploring implementation of health insurance exchanges by insurance regulators and health plans;
- Other areas including claims audits, provider billing and wellness initiatives.

RETIREE HEALTH SYSTEMS AND GASB45

Significant class time was spent understanding the Medicare system and health insurance programs available to retirees. Students were exposed to all types of Medicare plans, including Medicare Advantage and Medicare Supplement arrangements. The course was expanded to health students to help them learn about retiree health valuation methods for other post-employment benefits (OPEB), including FAS106 (single employers), SOP92-6 (multiemployer), and GASB45 (municipalities).

In addition to learning about traditional actuarial formulas around retiree health valuations, students were involved in research projects to understand methods used in the market, and summarize results to ascertain trends and benchmarks (averages). We wanted students to get a sense of the output results from a valuation program, since many actuarial firms are utilizing this software, which may be a "black box" to many students and practicing actuaries.

The research involved students gathering valuation reports, which reflected reports prepared by 35 different actuarial firms, reflecting municipalities in 40 states. In aggregate, results were compiled for 114 municipalities with results compiled so that students were able to learn the following:

- Types of retiree benefits offered by municipalities nationwide;
- Types of assumptions and methodologies used by outside actuarial firms (e.g., 35 different organizations);
- Patterns of results so students can obtain insights on what they should expect in results (e.g., benchmarks, ratios, etc.);
- Most common report elements provided by practicing actuaries.

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"THE OVERALL GOAL FOR THE RESEARCH WAS TO HELP STUDENTS BE MORE CONSULTATIVE WITH THE RESULTS ..."

Some highlights identified as a result of students' research are as follows:

- Actuarial Cost Methods: 69.3 percent of all valuations reviewed reflected a selected actuarial cost method of projected unit credit, which is the most common valuation method used for GASB45. The second most common method was Entry Age Normal, which was used 24.6 percent of the time.
- Discount Rates: Discount rates varied widely, with rates as low as 3 percent and as high as 8.5 percent. Students were able to see a high range of discount rates used by actuaries, as well as assumptions made for funded and unfunded retiree benefits programs. 28.1 percent of all municipalities evaluated had funded some portion of its retiree health benefits.
- Health care Inflation (Trend) Rates: Similar to discount rates, students were able to see a wide range of health care inflation rates used with the average first year discount rate being 8.5 percent and the ultimate trend rate assumption averaging approximately 5 percent (average was 4.92 percent).
- Mortality Tables: 69 percent of all valuations reviewed were based on the RP-2000 mortality table, while 71.9 percent of all valuations reviewed reflected some component of mortality improvement.
- Fifty-one percent of the reports had splits for actives vs. retirees for both employee counts and unfunded accrued liability. For those reports splitting actives vs. retirees, active lives reflected 72.6 percent of the total employee count and 58.1 percent of the unfunded accrued liability.

Other trends were also identified by students and reviewed in the course. Results were also illustrated for the class in aggregate, so that students can see trends and relationships between unfunded accrued liability, annual required contribution (ARC), pay-as-you-go amounts, and net OPEB obligations. Students were also able to see different formatting of reports and how results were presented to the end user. The overall goal for the research was to help students be more consultative with results and be able to audit output for reasonableness when calculations are generated out of the actuarial "black box" (valuation program).

REINSURANCE

For the second straight year, the course also included reinsurance. With an ever-changing reinsurance market, we wanted to provide insight to actuaries on health reinsurance, as well as reinsurance for other product lines (e.g., life insurance, annuities, accident products, catastrophic coverages, property casualty products). The course includes an overview of the history of reinsurance, along with providing an overview of the market (e.g., study of various countries, top reinsurers by line of business).

Topics included actuarial, underwriting, claims, auditing, treaties, retrocession, captives, and financial reporting as part of the course. Back in the fall of 2012, we had developed a three-day reinsurance course held in the Dominican Republic, and we incorporated material from that course into the Columbia University program.

FALL 2013

In September 2013, the third class commenced with a total of 55 new students. As part of the class, research projects were expanded from the prior classes and include the following: (1) research on health insurance exchanges in nine states reflecting a combination of state and federally run exchanges; (2) study and evaluation of six publicly traded HMOs; (3) evaluation of four additional healthcare systems—Italy, Israel, Greece and Thailand. We have also incorporated discussions on medical tourism and advancements in healthcare technology.

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We also want to thank the various actuaries and insurance professionals that assisted the students in research. Their participation was very valuable for the course and we hope other actuaries will participate in the future.

Most importantly, a special thanks to the Columbia University graduate students that ventured on this unchartered course called, "A Global Perspective of the Health Insurance Market." Many of those students have gone on to graduate the program and have provided positive feedback on how the course helped them transition seamlessly into their new position. To learn more about the program, visit *http://ce.columbia.edu/Actuarial-Science.* ■