Article from:

Health Watch

January 2016 – Issue 76

Letter from the Editor

By Kurt Wrobel

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This *Health Watch* is focused on a topic that has received a considerable amount of attention in the business community and the media—the opportunity to use advanced analytics and behavioral economics to improve outcomes and predict future results. While this opportunity is often referred to in broad terms as "Big Data," this edition will drill down on the topic and help define the actual application of the concept with several specific case studies. These case studies highlight a wide variety of different modeling techniques that could be deployed in addressing important business questions and improving the provision of care.

Greg Pence begins the discussion by highlighting the opportunities available to deploy advanced analytics and the skills necessary to do this modeling. He also showcases a case study where he used a mixed decision tree and duration model to develop a care coordination and patient registry program to more effectively manage patients. In addition to highlighting an interesting statistical technique, the analysis also shows that our technical work can go well beyond financial questions and could have a significant impact on health outcomes.

Sheamus Parkes continues with Pence's themes by discussing the statistical techniques he has used to predict which facilities within an accountable care organization (ACO) would produce the most cost effective outcomes. He also discusses the importance of having a broad statistical knowledge base and programming skills.

Using advanced analytics, John Albert tackles a topic that has been widely debated among large group underwriters and actuaries–the development of credibility factors. Instead of using a static formula or simplified heuristics, he provides us with a more explanative definition and then uses stochastic modeling to more accurately estimate these factors.

In her interview with Alan Mills, Mary Beth Moran focuses on a modeling technique that Mill's has long advocated for extension into the actuarial field. The agent-based modeling approach uses individual based parameters to guide the decisions and behavior of different agents in a complex system. The collected actions of these individual actors then determine the outcome of the wider system.

In direct contrast to the agent-based approach, Thomas Getzen discusses a macro model for estimating the long term trajectory of future health care costs. He suggests that by focusing on the bigger picture variables in the system, one can more accurately estimate the future.

After addressing more complex modeling, this edition moves to a discussion of behavioral economics by John Stark. Unlike most economic models, behavioral economics predicts how individuals will behave by explicitly assuming that they will be suboptimal in their decision making in certain circumstances. One particular prediction that seems interesting in light of our Affordable Care Act (ACA) experience is the concept of loss aversion. As Stark notes, individuals experience much more anxiety when losing something, versus joy in gaining something, even given equal value. This could explain, in part, the anxiety that many people have been experiencing with the cancellation of their insurance policies.

Philip Castevens continues with the behavioral economics discussion by using its tenants to explain the differences in health care costs among parents, married people, and employees.

In their respective articles, Kristi Bohn and Juan Herrera focus on the actuarial value calculator and the minimum value calculator. As many of us know from our rate development work, the ACA has many details that could have an important impact on our rates and the

underlying benefit packages offered in the market. These articles focus on the methodologies used in these calculators and propose potential future improvements to these models.

The edition concludes with a detailed discussion of the Risk Management and Own Risk and Solvency Assessment (RMORSA) Model Act that

was recently approved by the NAIC and is being adopted by legislatures across the country. As highlighted by Eli Russo, Lee Resnick, and Jacky Kwan, the guidelines include establishing an appropriate governing process, developing a methodology to quantify risk, and ensuring adequate capital reserves are in place to support the risk accepted by the organization. ◾

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Not surprisingly, these are the same top topics that rose to the top in the survey conducted two years ago. We will continue to provide our members with information regarding these topics in the upcoming year.

There were many comments requesting more dental focused items. As a result, the Health Section Council approved the formation of a **Dental Special Interest Group**. We hope to get this group started by January 2014. This group will be open to all interested members. The group will be a forum for more frequent communication and professional discussion. Information regarding this group should be available soon; look to our e-newsletter and join the listserve.

We were pleased to receive a number of offers from Health Section actuaries to **volunteer** their services in our future work. We are a council of only 12

elected members and about 15 active "friends" to help coordinate activities, so we can use additional help. The more **volunteers** there are to work with us, the more we can accomplish to serve our membership.

If you are interested in volunteering, please fill out the volunteer interest form found on the SOA Health Section website (*http://www.soa.org/professional-interests/health/hlth-detail.aspx*) or contact me at *donna.kalin@milliman.com*, or contact any member of the Health Section Council. ◾