



Health Watch

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Letter From the Editor

By Greg Fann

“Don’t trust your gut on this one, the media, or President Trump. Trust math.”¹ That was the advice from a recent commentary on how to interpret the likely impact of discontinuing cost-sharing reduction (CSR) payments in the individual market. This pronouncement resonates with actuaries, as an objective understanding of the results of mathematical computations is what generally informs our opinions. In a news cycle filled with outlandish punditry, our sober insights are often muted and lost in the noise. When our work is cited, we are held in high regard and recognized as being objective and dispassionate in our opinions.

On the CSR issue, technical articles had been written by actuaries prior to the similarly conclusive August 2017 Congressional Budget Office (CBO) report explaining the interaction of the CSR payments and ACA subsidy mechanics. The paradoxical impact of higher induced premiums resulting in higher subsidies and lower net premiums (potentially driving higher enrollment) for many eligible enrollees was specifically highlighted. Despite the warning, the advice was not widely considered. Virtually every media outlet indicated that “all of the experts were surprised” by the “higher than expected” initial open enrollment results² and were caught off guard again with the statistics at the end of open enrollment.

In this 85th issue of *Health Watch*, it’s fair to look back and say that our track record of articles is not one of experts being surprised by mathematically rational results. So what is our track record? What are our articles about? When I became editor of this newsletter last year, my first words were to let you know why you should write *Health Watch* articles. This issue completes my one-year stint as editor; JoAnn Bogolin has graciously agreed to take charge for the next year. Following up on “why to write,” I want my closing words to highlight “what to write.” It’s the most frequent question I received as editor: “I want to write an article. What are the guidelines?” It’s really simple. Ready? Write what actuaries don’t know that they should know. Don’t promote any organizations and don’t write the same thing that everyone else is writing. Write what you know best in your own unique style. As you read through this publication, you will notice some distinctive insights and flairs among the authors, but all promote learning.



We begin this issue with three pieces highlighting the Strategic Initiatives of the Health Section. I interview Jay Hazelrigs and Kelsey Stevens, the leaders of the Value-Based Care initiative. Jay and Kelsey provide insights on the formation of their committee, the direction they chose to embark on and an update of their work in progress. David Dillon, with commentary by the respective authors, highlights the key points of the most recent article from the Commercial Health Care: What’s Next? initiative. Please see his piece in the March 2017 issue of *Health Watch* for a broader summary of their work.

These articles are followed by a summary of recent recommendations from the Public Health Strategic Initiative. Bethany McAleer, Sara Teppema and Jim Toole discuss the important need for public health professionals to quantify cost-benefit analysis to support justification for funding requests.

Next, we have a leadership interview with Steve Tutewohl, the chief actuary at Evolent Health. He offers insights and practical advice about continuous learning and leadership growth. His recommendations are useful, regardless of where you are on your career path.

As promised in the prior issue of *Health Watch*, we have insightful actuarial commentary on commercial market changes in 2018 related to the Affordable Care Act (ACA) markets. This issue is loaded with ACA and Medicare content, just in time to get you ready for the busy spring season.

Leading off the ACA discussion on the implications of stoppage of the CSR payments is Dean Ratzlaff. With a journey back and a look ahead, he writes about the earlier-discussed paradoxical impact of CSR payments being defunded. The open enrollment results are common knowledge today; this article was written

prior to open enrollment, when some actuaries were aware of the potential outcome but it had not yet been confirmed. Joe Slater and John Culkin take on the sensitive topic of funding health care costs for individuals with pre-existing conditions. They argue that coverage should be provided for the public good, but that incorporating “uninsurable risks” into voluntary insurance markets poses permanent challenges. With data to support their argument, they propose a solution akin to traditional high-risk pools, with insurance assessments and tax revenue providing the funding for high-cost individuals, allowing individual health markets to be priced more attractively.

Shifting to Medicare Advantage, Karena Weikel discusses the need for actuarial skills in the complex world of risk adjustment calculations. While the focus of her article is Medicare Advantage, actuaries working with ACA risk adjustment methodology will recognize similar challenges and the need for actuarial insight. Next, Karan Rustagi explores the well-known frustration of integrated delivery systems not aligning incentives and optimizing performance. He uses a practical illustration of Medicare Advantage bid calculations to demonstrate how an integrated health system can meet its shared goals. To wrap up the Medicare section, Greg Sgrosso explains the importance of reconciling financial data early in the pricing process. He argues that this will provide confidence in the underlying data and allow the actuary to focus on the ultimate project goal.

In our final section, Joan Barrett reviews the actuarial control cycle and discusses the increased demands and enhanced modifications with advances in predictive analytics. Her article offers considerations that actuaries will need to address in the future. Didier Serre and Joanne Buckle follow with an exploration of the ROI of genomic testing. They offer key considerations

regarding why investing in genomic testing requires some financial gymnastics. Marilyn McGaffin, the leader of Health Section Subgroups, provides a description of subgroup activity and all the need-to-know details for getting involved. Kwame Smart, an integral player in the planning of the health sessions at the 2017 Society of Actuaries (SOA) Annual Meeting & Exhibit, closes this issue with a summary of the well-attended Boston conference.

I have enjoyed the opportunity to serve as editor of *Health Watch* and thank all of the authors who have made this past year a success. In the future, I will continue to offer my insights to a publication that has served health actuaries and the general public well; I humbly ask you to consider the same. And one more thing to always remember before I go: trust math. ■



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ENDNOTES

- 1 D.J. Wilson, Guest Commentary: The Benefits of Trump's CSR Decision, *Alaska Journal of Commerce*, October 16, 2017, <http://www.alaskajournal.com/2017-10-16/guest-commentary-benefits-trump%E2%80%99s-csr-decision#.WetP2bpFvok> (accessed December 7, 2017).
- 2 Paige Winfield Cunningham, The Health 202: Four Possible Explanations for the Shocking Obamacare Enrollment Figures, *The Washington Post*, November 10, 2017, https://www.washingtonpost.com/news/powerpost/paloma/the-health-202/2017/11/10/the-health-202-four-possible-explanations-for-the-shocking-obamacare-enrollment-figures/5a04720530fb045a2e002ecb/?utm_term=.485509468b52 (accessed December 27, 2017).

Chairperson's Corner

By Sarah Osborne

When I was a student at the University of Central Missouri (UCM), a friend suggested that I check out the actuarial science program. I had never heard of it, but I was told that it was a great program for people who like math. After doing some research on this actuary thing, I found that all I had to do was pass some tests and I would be granted access to this career with low stress, good pay and high demand. Supposedly the exams were challenging, but being the straight A student I was, I was not worried about that. Bring it on!

Like an unassuming squirrel running across the road to grab that tasty acorn, I was flattened by the truck of exam reality. Fail??? How could this be? I had never failed an exam in my life! Eventually I peeled myself off the pavement and tried again, and I learned what it was like to really study. With the encouragement and direction of Dr. Jean Tao and a lot of hard work, I left UCM with my actuarial degree and an exam under my belt.

I started my career at an insurance company in Kansas City, Missouri, and continued to take actuarial exams. I had some great mentors along the way, whom I don't think I've ever properly thanked. So, I'd like to give a shout out to Jay West, Edd Bailey, Delaine Hare and Gayle Brekke. I learned many different things from each of these people, and I am truly thankful for the time that they invested in me.

By 2009 I had earned my way to the Fellowship Admissions Course (FAC), where I met Brian Pauley. Although it was the only FAC I've ever attended, I must say it had to have been one of the best. I met a lot of pretty awesome soon-to-be Fellows, and I think we all had more fun than would be expected at this sort of thing. Afterward, I stayed in touch with several of these individuals, including Brian.

Fast forward a bit, and Brian was elected to the Society of Actuaries (SOA) Leadership & Development Section Council. He reached out to me about running, so I said I would think about

it. He then had Olga Jacobs, council chair at the time, reach out to me. Next thing I know, I'm getting off the phone with Olga and I've somehow committed to running. Ack! What did I get myself into? Do I have time for this? Can I do it? What if I lose the election? Suddenly I was having bad flashbacks from third-grade student council elections.

The thing is, when you stretch out and get uncomfortable, great things happen. Although I'd done some light volunteer work through the spring Health Meeting and exam grading, this was the point where I really dove in. And it has been a more rewarding experience than I could have ever imagined. I can't thank Olga and Brian enough for giving me the little push that I needed. And, for anyone out there who is thinking about taking the next step in leadership or volunteerism, I encourage you to go for it!

Now being on the Health Section Council, I am truly honored to be serving this year as the chairperson. I also want to give special thanks to Brian Pauley for his past three years of service on the council, including his last year as chairperson. I have so much respect for Brian and am truly blessed to call him a friend. He is a tremendous leader and has left some big shoes to fill. I am also assured by the fact that our council is filled with rock star actuaries, including our vice chair, Karen Shelton, and our secretary/treasurer, Jackie Lee. They both hit the ground running when they joined the council, and I can't wait to see what we accomplish this year. We also have a phenomenal SOA staff partner, Joe Wurzbarger, who does an amazing job supporting our group.

We have a lot of exciting initiatives as a council this year that I hope our section members will value, including a new Public Health web-exclusive series and the ongoing Commercial Health Care web-exclusive series at www.theactuarmagazine.org. Please visit our section website at www.soa.org/health to check out all the great things that are going on and ways that you can get involved. If you have any input for our group, please don't hesitate to reach out and share your feedback with me. I would love to hear from you and look forward to serving you this year. ■



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Up Front With the SOA Staff Fellow

By Joe Wurzburger

“With all due respect, sir, I believe this is gonna be our finest hour.”

Gene Kranz was the lead flight director of NASA’s Apollo 13 manned moon-landing mission. Attempting to land on the moon was an exceptionally complex endeavor, and Kranz’s team was as talented and prepared as anyone on the planet at executing such a difficult task. But as viewers of the classic 1995 film *Apollo 13* recall, a crisis of epic proportions ensued. An explosion on the aircraft after a seemingly routine procedure left a laundry list of challenges Kranz’s team needed to address.

One of my favorite exchanges of the movie illustrates both the urgency of the situation and the remarkable leadership exhibited by Kranz:

Henry Hurt: We’ve got the parachute situation, the heat shield, angle of the trajectory and the typhoon. There’s just so many variables, I’m at a loss—

NASA Director: I know what the problems are, Henry. This could be the worst disaster NASA’s ever experienced.

Gene Kranz: With all due respect, sir, I believe this is gonna be our finest hour.

Kranz utilized the various perspectives and strengths of each of his team members, masterfully alternating between listening to their ideas and making timely and difficult decisions. He faced the challenges head on but also realized he couldn’t solve them alone.

Today’s health actuaries also face a laundry list of challenges. They may not be of the same dramatic nature as those faced by Kranz’s team, but they may feel just as insurmountable.

At times the conditions we face on our mission change as quickly as those faced by Kranz’s NASA team. I write this having just returned from the 2017 SOA Annual Meeting & Exhibition, where Dave Dillon moderated a fantastic session featuring several insurance commissioners. As they discussed various issues, including many related to the Affordable Care Act, Dave saw a notification on his phone. Sure enough, in the moments since his session had started, word had come out about a bipartisan agreement to continue to fund the ACA’s cost-sharing reductions for

two more years. He read the notification to the audience, and just like that the conditions had changed. By the time you read this, I assume those conditions will have changed another half dozen times or so. How is a health actuary supposed to keep up?

As I flew home from the Annual Meeting, I read Gary Keller’s fabulous book, *The ONE Thing: The Surprisingly Simple Truth Behind Extraordinary Results*. In it, Keller argues convincingly that success is directly determined by how narrow you can make your focus. He says multitasking is a lie and quotes Steve Uzzell: “Multitasking is merely the opportunity to screw up more than one thing at a time.” A person must identify the one thing he or she can do that will have the greatest impact; focus on anything else is simply a distraction.

So what is the one thing that a health actuary must focus on?

Clearly it is the Affordable Care Act. That is, unless the shift in payment models from volume to value is more your thing. Or perhaps it’s the astronomical costs of new specialty drugs. Or the rising costs of health care overall. Maybe the biggest issue right now is the opioid epidemic. Or I know! Antibiotic resistance. Or maybe . . .

You get the point. There are too many “things” to choose just one. So how can we effectively tackle them if we believe Keller’s basic premise that we only hurt our own productivity by multitasking?

The answer, I believe, is to divide and conquer. And it is a large part of the reason why the Health Section exists. I don’t believe any one person can effectively tackle the voluminous challenges facing health care. Luckily, we have more than one person available. In fact, the Health Section consists of roughly 4,000 incredibly talented actuaries who are more than up for the challenge. Each of you have unique skills you bring to the table, and I imagine each of you would be able to choose your “one thing” if asked.

Much as Gene Kranz trusted his talented crew to tackle the list of challenges facing the Apollo 13 mission, with each member of the team focused on his or her particular task, so do we look to each of you to bring your talents and focus to the challenges facing health care. The odds may seem insurmountable, but with the power of each of you focusing on your one thing, health actuaries will be key contributors to the success of this mission.

In fact, I believe it will be our finest hour. ■



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Value-Based Care: The Role of the Health Care Provider Actuary

A Health Section Strategic Initiative

By Greg Fann

In 2015, the Health Section Council launched a new committee to identify areas worthy of focused research to supplement the education of health actuaries. The Strategic Planning Committee comprises a small group of council members charged with developing Strategic Initiatives, recruiting the best and the brightest volunteers and shepherding the initiatives through completion. Each initiative includes about 15 volunteers and is completed in roughly 18 months. Written reports are generally accompanied by presentations at Society of Actuaries (SOA) meetings and other forums.

The first two initiatives have been completed. The final documents can be found here:

- “Evolution of the Health Actuary: A Health Section Strategic Initiative”: <http://healthwatch.soa.org/?issueID=4&pageID=1>
- ACA Exchange Initiatives Program: <http://www.theactuary.com/magazine.org/category/web-exclusives/aca-initiative/>

I have had the privilege of chairing the Strategic Planning Committee since October 2016, soon after the Value-Based Care Initiative, our third strategic initiative, was launched. I recently caught up with the initiative leaders, Jay Hazelrigs and Kelsey Stevens to talk about where they are and where they are going with the project. I hope this interview provides a good flavor of how initiatives are formed, committees are recruited and strategic directions are determined. More important, I hope it excites you to read the upcoming report. If you have an idea for a future initiative concept, I would love to hear about it—please drop me an email.

Health Watch: How did this initiative form?

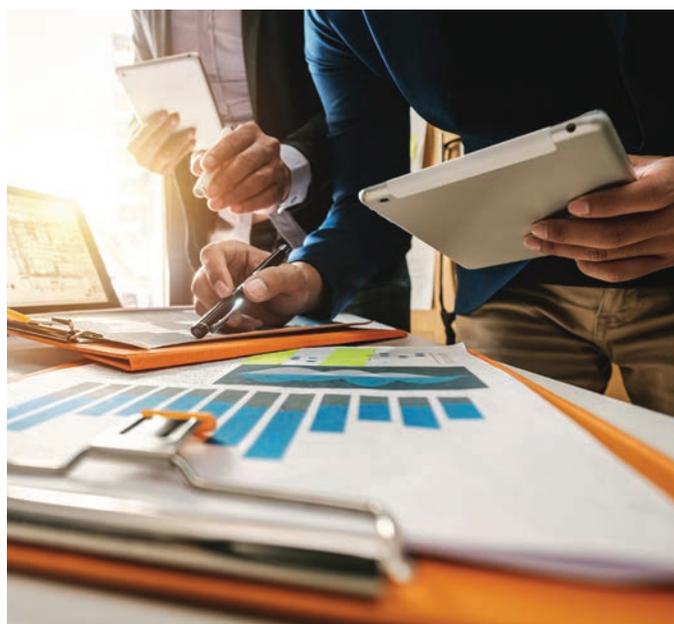
Kelsey Stevens: This particular initiative was started in the spring of 2016. With the passage of the ACA [Affordable Care Act], there has been a greater need for actuaries in the health care

provider space as more and more financial risk is being shifted from payers to providers. Just as actuaries provide expertise to payers regarding financial risk, we believe these unique skills are transferable, and actually necessary, to support health care providers in their efforts for managing value-based care (VBC) arrangements and other new initiatives in their businesses. As such, this group was formed to dive deeper into the extremely broad topic of the role of the health care provider actuary.

HW: How did you become interested in getting involved?

KS: I became interested because I am a health care consulting actuary and am getting more frequent requests to represent health care providers in a wide array of analyses including, but not limited to, contract analyses, predictive modeling and provider performance analyses. I wanted to learn more about the opportunities available to actuaries supporting provider groups/health systems. In addition, I wanted to volunteer for the SOA and meet new people with similar interests.

Jay Hazelrigs: I have similar reasons for wanting to be a part of this initiative. As a practicing provider actuary, I have seen the providers’ growing need for actuaries. This need is expected to only increase with time, and although actuaries are well equipped to help with financial risk matters such as contracting, a provider actuary is typically asked to bridge the financial risk implications to other critical areas of a provider’s VBC business, such as population health management and network management. Thus, this was one of my goals—to ensure that this initiative highlights the interactions and reliance among financial risk, population health management and network management within the context of providers and value-based care.



HW: Who is on the committee?

JH: We have a fairly broad group of health care actuaries on the committee, including both payer- and provider-experienced actuaries and actuaries employed at health plans as well as consultants. Additionally, the group has some experience in the U.K.; thus, we do get to compare from time to time how the U.S. system compares to the U.K. system. If we think about maybe who we don't have on the committee, I would say our wish list would have probably consisted of actuaries who are employed at a provider or health system and perhaps an actuary intimately involved with alternative payment models with CMS [Centers for Medicare & Medicaid Services].

HW: How did you decide which direction to go?

KS: In the beginning, we spent time trying to define value-based care and provider payment reform in an attempt to set direction for our group and to define/visualize an end product/outcome. We quickly learned that this was an extremely broad topic and it was nearly impossible to cover it all. We gathered ideas from all team members via brainstorming sessions and eventually came to the collective decision that our goal would be to define the role of a provider actuary. There was a lot of back-and-forth discussion about who the target audience should be for our final deliverable, and we eventually agreed that we would focus first on educating ourselves and fellow actuaries before aiming any efforts outside of the actuarial profession.

HW: What are the different domains? What is their unique focus?

KS: Our team met face-to-face in June of 2016 to flesh out a game plan and came up with three overarching domains under the broad umbrella of defining the role of a provider actuary: Enterprise & Financial Risk Management, Population Health & Quality Management, and High-Performance Network Management.

Enterprise & Financial Risk Management refers to the business and financial matters related to the payment for the delivery of health care. This involves a dynamic risk assessment of both revenues and costs. Relative to the traditional fee-for-service framework, the financial ramifications of value-based care are complicated and challenging to a provider, and actuaries can help these organizations prepare, implement and manage the technical details of these new models.

Population Health examines the need for the provider actuary to understand the composition and health status of the

patients included in a VBC relationship and how population health interventions improve outcomes. Population health encompasses more than just the diagnosis and demographic information about the individual that may be quantifiable, but also socioeconomic factors, community norms and resources, and external forces that may be influencing the health status of a given group of people. An important part of the process is to identify members who need management before their disease progresses or they have an expensive acute event.

High-Performance Network Management, also known as network design or provider selection to form a network, has wide-reaching implications and has multiple goals, such as reduction and management of medical expenses—"smarter spending," according to CMS—and improvement of quality by selecting providers to participate in the network that have been shown to have better quality outcomes. Network design can be constrained by regulatory and adequacy requirements. These boundaries may vary by state and one should ensure that the network [has been] designed within these constraints to meet the goals stated.

Value-based care is not a "nice to have"; it's a must-have in today's health care environment.

HW: These ideas have been tried before with limited historical success. Are prospects really different now?

JH: The idea of integrated delivery systems and providers taking on risk is not new, but there has been a renewed focus on these value-based arrangements lately. Additionally, providers and payers are better equipped today to understand the nuances and management of the covered populations—that is, risk stratification, population health management programs, and so on. Patient engagement, provider engagement and technology have improved tremendously since the 1990s and will continue to play a part in providers' ability to be successful in VBC arrangements.

HW: Political forces changed during your initiative timeline. Has value-based care been impacted by policy implications or other relevant environmental changes over the past 18 months?

JH: I think the Triple Aim objective continues, as does providers' commitment to VBC, regardless of the political landscape.

Moreover, the unfortunate fact is that VBC is not a “nice to have”; it’s a must-have in today’s health care environment.

HW: What did you learn through this process?

KS: Not only did I learn about our subject matter, I also learned some unique perspectives about how providers think. For payer actuaries this experience has been eye opening. For example, it is challenging to start thinking about health care costs as revenue items rather than claims.

JH: Probably goes back to the old saying, the more I learn the less I know; however, we are hopeful that this Strategic Initiative will give actuaries a good foundation for understanding the role of a provider actuary.

HW: Who should read this paper? What should they expect to learn?

KS: As mentioned earlier, our deliverable is being prepared assuming health actuaries are our primary audience. The goal of this paper is to build the necessary foundation for health care actuaries to support health care providers in managing their value-based care arrangements and initiatives of their businesses. After reviewing the paper, readers should have a better understanding of the current provider environment and how their business is changing as a result of external influences like ACA/ Triple Aim, MACRA, and so on. They should walk away with a clear understanding of the skill sets (high level) that are needed for providers to be successful in the new VBC world, particularly, which of these skills are currently being fulfilled by actuaries and which are expected to increase in demand in the future.

HW: When will the paper be available?

JH: It will be available in early 2018, and it is our hope that others will take the baton and run with it to help build upon the paper’s ideas and messages, especially those that we were not able to dive further into at this time.

HW: What sessions at the Health Meeting will cover this?

JH: We will have one session at the Health Meeting in Austin that will summarize and formally conclude the work of this Strategic Initiative. We hope to see you there. ■



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Commercial Health Care: What's Next?

A Health Section Strategic Initiative

By David Dillon

In June 2017, the Society of Actuaries (SOA) Health Section released a new strategic initiative entitled Commercial Health Care: What's Next? This initiative was designed to be an anthology series of articles focusing on education and research concerning key issues in health care reform. This article contains a condensed summary and excerpts from the fourth article that was released in the series. The full article and newly released companion pieces are located at <http://www.theactuarmagazine.org/category/web-exclusives/commercial-health-care-whats-next/>. Excerpts from the article "Creating Stability in Unstable Times" are reprinted with permission from the Society of Actuaries, Schaumburg, Illinois. Copyright © 2017 by the Society of Actuaries.

CREATING STABILITY IN UNSTABLE TIMES: A LOOK AT RISK ADJUSTMENT AND MARKET STABILIZATION

By Julie Peper, FSA, MAAA, Danielle Hilson, FSA, MAAA, and Michael Cohen, Ph.D.

When individual market instability under the Affordable Care Act (ACA) is discussed, the same themes are often heard: not enough young and healthy enrollees; issuers leaving the market in specific counties or altogether; less consumer choice as issuers have stopped offering richer and wider network plans. It is often asked if the individual market is sustainable long-term and if these issues can be fixed. In order to understand if the market can become more stable and sustainable, it must first be understood what is driving the current instability.

The passage of the ACA created an environment in which individuals with pre-existing conditions could no longer be medically underwritten or otherwise discriminated against. In an insurance market of guaranteed issue and bans on pre-existing condition discrimination, one of the most important needs for a stable market is to minimize adverse selection, both in the entire market and within market subsegments.

To have a balanced risk pool with limited market selection, the market must have a reasonable distribution of enrollees.

In order to encourage the younger and healthier individuals to enroll in the individual market, the ACA has an individual mandate, subsidies based on income and enrollment limitations. Other key factors for maintaining a balanced risk pool were risk mitigation programs, including risk corridors, reinsurance and risk adjustment. Other factors that have had an impact on the individual ACA risk pool include outreach and advertising, Medicaid expansion and regulatory uncertainty.

Risk Adjustment

While the impact of adverse selection by market varies significantly by state, the impact of adverse selection within a market has seen similar results in many states. For there to be no adverse selection within a market, the financial impact of insuring any member must be similar across all members for a particular issuer. Risk adjustment was designed with the primary goal of compensating issuers for not being able to charge premium rates that align with the underlying cost and risk of enrollees. Risk adjustment is a budget-neutral program that redistributes funds, within each state and market, from issuers with lower-risk, lower-cost enrollees to issuers with higher-risk, higher-cost enrollees. While the risk adjustment program compensated issuers with higher actuarial risk with higher risk adjustment transfers, it had some shortcomings for certain segments of the population.

We conducted an analysis using 2015 ACA-compliant data, which included approximately 5 million people from more than 100 issuers in more than 20 states. We also completed a similar analysis for the state of Nevada. The analyses reviewed market stability through the lens of profitability and most findings were consistent at the national and state levels.

- Premiums, net of risk adjustment transfers, are higher than claims for bronze and significantly lower than claims for platinum. This indicates that bronze is relatively more profitable in the individual market while platinum is less profitable. The opposite is true for the small group market.
- Relative profitability for PPO plans is notably worse than HMO plans.
- Members who had at least one medical condition that flagged a risk adjustment transfer had higher relative profitability.
- Older enrollees are more profitable than younger enrollees.

Any change to the risk adjustment model has an impact on the profitability of market segments, which impacts the stability of the market. It is assumed that any changes made are intended to improve the risk adjustment model and market stability.



However, if the new models are not released prior to the rating deadline and issuers are not able to identify the impact of the model changes, this uncertainty could have the opposite effect and create additional instability.

Pricing Changes and the Current Status

The individual market looks very different now than it did in 2014. As of the first quarter of 2017, large premium increases have improved profitability.¹ Despite initial concerns for 2018, every individual in the country has the option to purchase a plan on an Exchange. However, issues still remain. Federal policy uncertainty fueled premium increases or issuer exits. Premiums for those not receiving subsidies may be prohibitively expensive in some areas.

Many states are taking it upon themselves to improve the stability of their individual markets including taking advantage

of state innovation waivers (or 1332 waivers). Through this option, states are able to change portions of the ACA as long as the changes meet a certain set of requirements known as guard rails. To date, several states have had 1332 waivers designed to improve market stability accepted.² While the current state activities are encouraging and may improve market stabilization, there are still several other factors that will need to be improved to truly achieve market stability, including clarity at the federal level, regulators actively working to anticipate market dynamics, and long-term solutions to address overall health care costs.

There are still high levels of market uncertainty and instability. States have been trying to increase stability by focusing on improving the risk pool. While federal and state-specific changes are considered, it is important for all stakeholders to internalize the lessons of the previous few years. Policies can have unintended consequences, and ensuring that issuers and the public understand the rules is necessary for successful implementation of any market stabilization program. ■



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Public Health: Actuaries Weighing in on Healthy People 2030

A Health Section Strategic Initiative

By Bethany McAleer, Sara Teppema and Jim Toole

Since the 1980s, the U.S. Department of Health and Human Services' Office of Disease Prevention and Health Promotion (ODPHP) has set an agenda for improving the health of Americans through its Healthy People initiative. Every 10 years, ODPHP updates its goals and framework for the coming decade. According to the Healthy People website:¹

Healthy People has established benchmarks and monitored progress over time in order to:

- Encourage collaborations across communities and sectors
- Empower individuals toward making informed health decisions
- Measure the impact of prevention activities

In late 2016, ODPHP began work on Healthy People 2030, shaping its vision, mission, foundational principles, plan of action and overarching goals. This work resulted in a report titled *Recommendations for an Approach to Healthy People 2030* and a request for comment on those recommendations.²

Healthy People 2030's vision is a society in which all people achieve their full potential for health and well-being across the life span. The framework outlines foundational principles, a plan of action and goals that are admirable. However, the Society of Actuaries (SOA) Public Health Task Force (created by the Health Section's Strategic Initiative for Public Health) believes the framework could be strengthened by acknowledging the importance of cost-benefit evaluations in prioritizing and securing resources to support its initiatives. The members of the task

force were inspired by the goals of Healthy People 2030, and we recently provided a comment letter on the framework.

Our comment letter discussed the fact that actuaries' data-driven view of health and health care calls us to quantify the costs of programs and services as well as the downstream savings that various investments can generate. We believe that this objective view is sometimes missing from the clinical and public health discourse, and yet it is a view that is absolutely necessary for informed decision making. Applying a return-on-investment approach to clinical and public health initiatives allows decision makers to identify programs that are working effectively and could be expanded as well as those that may need to be revised. Without that view, money could continually be invested in programs that aren't generating expected results.

The SOA Public Health Initiative has a subgroup to enable networking among SOA members and friends who are interested in engaging in discussion on public health and population health topics. We have some planned activities, such as periodic conference calls, a group on SOA Engage (<https://engage.soa.org>), sessions at the SOA June Health Meeting and a web-exclusive series of articles on www.theactuarymagazine.org. Please join us by reaching out to Dee Berger (lberger@soa.org).

In addition, public health systems in general struggle to ensure steady and sufficient funding for their initiatives, as most of the money that supports public health is discretionary funding. Until there is widely accepted evidence of the financial benefits of public health programs, initiatives such as Healthy People 2030 will not receive the prioritization and financing needed to fully reach their goals. For this reason, we strongly recommended that the framework explicitly reference the importance of cost-benefit evaluations to help secure continued funding for its clinical and public health programs with demonstrated financial value. We also recommended that the framework expand its goals to include the promotion of the impact that prevention, wellness, safety and health equity initiatives can have on overall U.S. health care spending.

We hope that the Healthy People 2030 Committee will consider our comments and add a cost-benefit lens to its admirable framework in order to better ensure the sustainability and expansion of the great work that health and health care professionals do every day. ■



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Leader Interview

With Steve Tutewohl

Steve Tutewohl, FSA, MAAA, is the chief actuary at Evolent Health. He has nearly 25 years of health actuarial and analytics experience and built his career on combining those two disciplines to position both providers and payers for financial success. He recently led the merging of two actuarial departments during a corporate acquisition. Brian Pauley, FSA, MAAA, conducted the interview.

ON BEING AN ACTUARY

Health Watch: How and when did you decide to become an actuary?

Steve Tutewohl: While I was in high school my father shared with me a magazine that ranked the top jobs and had actuary ranked number one. Given my interest in math and business, I immediately made up my mind that this was the job for me.

HW: What other careers did you consider? Or if you have had other careers, can you describe them?

SW: Up until that point I was leaning toward engineering.

HW: What was your favorite job before you became an actuary?

SW: I spent a year in college being a “runner” at the Wisconsin state capitol. Literally what we did is pick up and deliver documents from one congressman’s office to another. This certainly ages me, as I would guess this is all done electronically now.

HW: What has been most crucial in your development as an actuary?

SW: Two things: good mentors and opportunities. Both of these are all about learning. You need good projects and good people to learn from, and equally important, you need to be motivated to learn. Never settle for just doing the work. Think critically and what and how you are doing it.

HW: Looking at your career as an actuary, do you see any important learning milestones or turning points in your career?

SW: I think achieving my ASA was a milestone that stands out. It felt like my credibility with both internal and external clients leapt forward overnight. Of course, an increase in professional responsibility came with that.

There are three essential components to success: planning, good people and passion for what you do.

HW: As an actuary, what keeps you awake at night?

SW: Not a lot. Like anyone, I fear missing something that causes my company or my clients harm that could have been avoided. However, I trust in good planning, good people and good processes that we put into place.

ON BEING A LEADER

HW: How much did your actuarial training prepare you for this role? What additional training—formal, informal, or otherwise—did you need to be successful?

SW: The actuarial training has prepared me for the “X’s and O’s” of the job. It taught me approaches and strategies to measure and mitigate risk. That is a key foundation for every actuary. However, leadership training comes with experience and good mentors. Just like the actuarial credential, experience is earned by hard work, trial and error and learning from your mistakes.

HW: What are the most important lessons you’ve learned in your role?

SW: There are three essential components to success: planning, good people and passion for what you do. It is really easy to get caught up in the priority of the moment, but you can never go far without thinking of what is ahead. You need to carve out time every day to think about what’s ahead. What do you need your company, your team and yourself to be doing? How will you accomplish it? Build a plan, involve your team in the plan and communicate the plan. Involving your team in your thought



process and the “why” behind a plan is how you build loyalty and passion.

HW: Let’s say you’re hiring your successor. If you’re presented with two actuaries with equivalent experience and training, what characteristics will help you choose one over the other?

SW: Success in leadership positions is not achieved through training and credentials. It is your ability to execute on the important lessons noted previously. Finding someone who can excel with planning, people and passion is key. In some cases, one individual won’t have all of these characteristics, but if you can pair that leader with someone else who can fill in the gap, that can be equally effective.

HW: Describe the biggest one or two challenges that you have faced in your role.

SW: The largest challenge in my current role was around people integration. We had two equally large companies coming together and we also brought together people within the existing organizations who previously had not worked together. It was a large amount of change for everyone and morale was a problem. Fortunately for me, I had some great leaders, and I knew that if we could build a great plan and showed commitment to it, that eventually we would get the full team onboard and get things moving. This is not an easy or a quick challenge, but one that many of us will face at some point in our career.

HW: What advice would you give to another actuary going into a leadership position for the first time?

SW: Listen to everyone but trust your own instincts and decisions. Have confidence in the plan that you think is most appropriate. Also, spend the time finding and developing your team members. They are your greatest asset. ■

CSRs and Market Stabilization: What's the Real Story?

By Dean Ratzlaff

On October 12, 2017, President Trump announced that federal payments to insurers for cost-sharing reductions (CSR reimbursements) are no more. Now that this is the new normal, do we want to go back?

Many say yes. During the writing of this article, at least one senator agreed to support a bill that includes individual mandate repeal, provided two market stabilization bills, the Collins-Nelson and Alexander-Murray bills, also pass.¹ As the latter bill's centerpiece is reinstatement of CSR reimbursements,² the thinking appears to be that reinstating CSR reimbursements will have market stabilizing effects to offset the de-stabilizing effects predicted under individual mandate repeal.³ Given the advice of experts prior to the official annulment of CSR reimbursement on October 12, 2017, such thinking is not surprising. Senators in the Senate Health, Education, Labor and Pensions Committee heard testimony last September from numerous experts who all said CSR reimbursement is the most potent policy with which to stabilize the individual health insurance market.⁴ Knowledgeable lobby groups also joined together to hammer the same message.⁵

When I analyze the issue I conclude the opposite. I believe it is better that CSR reimbursements remain relegated to history than be reinstated. Join me as I recap how we got here, discuss the implications of reinstating CSR reimbursements, and conclude that if the goal is market stabilization, it is better that CSRs not be reimbursed.

RECAPPING HOW WE GOT HERE

Effective beginning in 2014, U.S. law requires insurers to provide CSRs to members on the individual market exchanges whose income is between 100 percent and 250 percent of the federal poverty level (FPL).⁶ Every insurer on the exchange must create special benefit structures where copays, coinsurance, deductibles and out-of-pocket limits are reduced to improve actuarial value according to Table 1. Thus the name "cost-sharing reductions," or CSRs.

Table 1
Actuarial Value Improvement by Income Range

Income Range	Actuarial Value Improvement
100–150% FPL	24%
150–200% FPL	17%
200–250% FPL	3%

The law stipulates that the richer benefits cannot raise premiums for the benefitting members, leaving insurers in need of a revenue source to cover these richer benefits. Prior to October 12, 2017, the federal government, through the Department of Health and Human Services (HHS), reimbursed insurers dollar-for-dollar for these extra benefits (i.e., CSR reimbursements).

The law explicitly directs HHS to make CSR reimbursements but does not declare that Congress appropriated them.⁷ In a move to check the executive branch's powers, the House of Representatives sued HHS on the grounds that, because Congress did not appropriate CSR reimbursements, it is illegal for HHS (i.e., the executive branch) to make them. It was the first time in U.S. history that a legislative body brought a lawsuit against a president over enforcement of law.⁸ In a ruling made May 12, 2016, a district court judge agreed with the House.⁹ Yet the ruling was made in such a way as to allow reimbursements to continue during appeal, which the Obama administration filed soon after.

When the Trump administration replaced the prior administration as the defendant in the suit, it gained the right to drop the appeal and let existing CSR reimbursements stop. As insurers were preparing for the 2018 individual market year, President Trump repeatedly threatened to terminate CSR reimbursements but never followed through, raising uncertainty to market-destabilizing levels. The writing was on the wall that CSR reimbursements were going away, but when?

Throughout 2017 the appeal was held in abeyance, with both the House and executive branch repeatedly filing motions suggesting legislation negating the need for a decision on the matter to be imminent. The deadline for insurers to sign agreements to offer exchange plans in 2018—September 27, 2017—passed by. By then, premiums were final and insurers were locked in for 2018.

Two weeks later, on October 11, U.S. Attorney General Jeff Sessions delivered a three-page letter arguing that the ACA does not appropriate funds for CSR reimbursement.¹⁰ The next day President Trump publicly announced that CSR reimbursements were no more. The last CSR reimbursement payment to insurers, which had been made monthly since 2014, occurred in September 2017.

Nineteen State Attorneys General attempted an injunction to continue CSR reimbursements on the grounds the states would otherwise be harmed. Their argument failed. On October 25, 2017, Judge Vince Chhabria vanquished their argument with a 29-page decision that lucidly explained why states would not be harmed.¹¹ It is worth noting that footnote 22 of that decision suggests a legal pathway for insurers to recoup CSR reimbursements not paid during the 2017 plan year. I recommend consulting with your company’s legal counsel if you wish to learn more.

Now that CSR reimbursements are done, the lawsuit brought by the House of Representatives is likely to come to a close. On December 15, 2017, the involved parties filed a settlement with the court. Amazingly, they agreed to overturn the prior ruling by the district court. This means that if the courts agree to the settlement, a new administration or even President Trump could resume CSR reimbursements at any time. A party deeming the reimbursements illegal would have to file a new suit.¹²

Losing CSR reimbursements removed a significant source of funding for the individual market, valued at \$10 billion for 2018. For insurers, the only recourse was to load 2018 premiums to make up for the loss. This added 14 percent to premiums nationwide and 20 percent to silver premiums specifically.¹³ States allowed insurers to load premiums according to the approaches described in Table 2.¹⁴

More states loaded CSRs to silver on-exchange plans (Silver Switcharoo) than any other approach. By providing maximum benefit to the roughly 70 percent subsidy-eligible members and no change in premium for ineligible members, it is the approach with the most upside.

Individual market regulations of import to health actuaries can be ephemeral, but for the rest of this article I ask you to think of them as frozen in place. Reinstating CSR reimbursements is a change to baseline. It is a baseline where premiums for on-exchange silver plans are used to give insurers revenue necessary for providing CSRs to members under 250 percent FPL.

IMPLICATIONS OF REINSTATING CSR REIMBURSEMENTS

CSR loading allows insurers to add administrative costs and profit to CSR costs. Previously, CSRs were exempted from net premium calculations.¹⁵ Because most insurers price individual business to the minimum loss ratio of 80 percent, about 20 percent of CSR premium load is additional revenue without additional cost. For 2018 this could be 2.8 percent of 2017 premiums (14 percent • 20 percent).

Insurers will lose this revenue if CSR reimbursements are reinstated. This is ironic because insurers will bear additional administrative costs under CSR reimbursements. In order to receive the correct amount of CSR reimbursement, insurers

Table 2
Approaches Allowed by States for Insurers to Mitigate Loss of CSR Reimbursement

# States	Approach	What It Means
3	Eat It	Insurers not allowed to load premiums to cover loss of CSR reimbursement. They must eat whatever CSRs they provide.
5	Broad Load	Insurers load premiums to cover loss of CSR reimbursements; spread evenly across all plans.
17	Silver Load	Insurers load premiums to cover loss of CSR reimbursements; only on silver, on and off exchange.
20	Silver Switcharoo	Insurers load premiums to cover loss of CSR reimbursements; only on silver on exchange, exempting silver off-exchange members from the increase.
6	Insurer Choice	Insurers given latitude to decide what they will do.

Note: From “2018 CSR Load Type by State,” by Charles Gaba, Dave Anderson, Louise Norris and Andrew Sprung.¹⁴ Used with permission from Charles Gaba.

must adjudicate claims as if there were no CSRs, determine the actual difference in claims, and submit that amount to the government in a process known as CSR reconciliation. CSR reconciliation is complicated, and many insurers will need to pay an external vendor to perform this for them in the event that CSR reimbursements are reinstated.

If we could travel back in time and reinstate CSR reimbursements in time for the 2018 plan year, silver premiums would decrease about 17 percent nationwide and all premiums about 12 percent. As much as 2.4 percent of the 12 percent is retention revenue that insurers would lose (12 percent • 20 percent).

To consider member impact, we must differentiate between members who are eligible for a subsidy and those who are not. The member's portion of premium for subsidy-eligible members is capped based on income relative to the federal poverty level. The maximum income eligible for subsidy is 400 percent FPL, at which the member portion is capped at 9.56 percent

of income.¹⁶ If this is a family of four, the member portion is capped at \$784 in 2018. Assuming the second-lowest silver premium is \$1,200, the family's premium subsidy is \$416. Should CSR reimbursements be reinstated, the second-lowest-cost silver premium will decrease an average of 17 percent, making the family's new subsidy \$212 ($\$1,200 \cdot (1-17\%) - \784). The lower subsidy gives them less purchasing power for any plan other than the second-lowest silver. Essentially, their options will not be as good should CSR reimbursements be reinstated.

Now consider an illustration where premiums are \$400, \$600, \$600 and \$700 for bronze, silver, gold and platinum benefits, respectively. The on-exchange silver premium would have been \$500 with CSR reimbursements, which are \$80. Pricing for 80 percent loss ratio with no CSR reimbursements resulted in \$600 ($\$500 + \$80/80$ percent). Subsidy-eligible members have a member portion of \$50 for silver plans. Table 3 presents the impact of reinstating the CSR reimbursement under these parameters.

Table 3
Impact of Reinstating CSR Reimbursement, by Stakeholder

No CSR Reimbursement (Baseline)	Metal	Subsidy-Eligible			Subsidy-Ineligible			CSR Reimbursement (Taxpayer)
		Mbr	Prem Subsidy (Taxpayer)	Total Premium (Insurer)	Mbr	Prem Subsidy (Taxpayer)	Total Premium (Insurer)	
	Platinum	\$150	\$550	\$700	\$700	\$0	\$700	\$0
	Gold	\$50	\$550	\$600	\$600	\$0	\$600	
	Silver	\$50	\$550	\$600	\$500	\$0	\$500	
	Bronze	\$0	\$550	\$400	\$400	\$0	\$400	

CSR Reimbursement	Metal	Subsidy-Eligible			Subsidy-Ineligible			CSR Reimbursement (Taxpayer)
		Mbr	Prem Subsidy (Taxpayer)	Total Premium (Insurer)	Mbr	Prem Subsidy (Taxpayer)	Total Premium (Insurer)	
	Platinum	\$250	\$450	\$700	\$700	\$0	\$700	\$80
	Gold	\$150	\$450	\$600	\$600	\$0	\$600	
	Silver	\$50	\$450	\$500	\$500	\$0	\$500	
	Bronze	\$0	\$450	\$400	\$400	\$0	\$400	

Impact of Reinstating CSR Reimbursements	Metal	Subsidy-Eligible			Subsidy-Ineligible			CSR Reimbursement (Taxpayer)
		Mbr	Prem Subsidy (Taxpayer)	Total Premium (Insurer)	Mbr	Prem Subsidy (Taxpayer)	Total Premium (Insurer)	
	Platinum	\$100	-\$100	\$0	\$0	\$0	\$0	\$80
	Gold	\$100	-\$100	\$0	\$0	\$0	\$0	
	Silver	\$0	-\$100	-\$100	\$0	\$0	\$0	
	Bronze	\$0	-\$100	\$0	\$0	\$0	\$0	

Abbreviations: CSR, cost-sharing reductions; Mbr, member.

The impact to various parties of reinstating CSR reimbursements are as follows:

- **Subsidy members.** Must pay \$0 to \$100 more depending on plan selection.
- **Nonsubsidy members.** \$0. No CSR load is on their premium, so they are unaffected.
- **Insurer.** Net loss of \$20 for subsidy-eligible silver members (\$100 of premium is lost, while only \$80 of CSR reimbursement is gained).
- **Taxpayer.** Net gain of \$20 for subsidy-eligible silver members (CSR reimbursements cost \$80 but \$100 is saved due to smaller premium subsidies).

While this is illustrative, the only difference a real-world scenario will have is the magnitude of impact. Directionality remains unchanged. Taxpayers benefit, nonsubsidy members are unaffected, while subsidy members and insurers lose.

Last August the Congressional Budget Office (CBO) estimated taxpayer impact from terminating CSR reimbursements.¹⁷ Acknowledging that it is not truly a 1:1 endeavor, we can reverse their figure to get an initial estimate of taxpayer impact to reinstate CSR reimbursements. For 2017–2026, reinstating CSR reimbursements will reduce taxpayer burden by approximately \$194 billion. I encourage you to consider how much weight this should receive in the overall calculus.

Reversing CBO's coverage estimate indicates that reinstating CSR reimbursements will add about one million people to the uninsured ranks. Because reinstating CSR reimbursements decreases premium subsidies, purchasing non-group insurance becomes less attractive for subsidy-eligible members. As a general rule, individuals with lower-than-average risk are the first to go uninsured. As a result, premiums rise for individuals who remain insured.

How will reinstating CSR reimbursements impact insurer participation in the individual market? An amicus brief on the CSR lawsuit by America's Health Insurance Plans (AHIP) and Blue Cross Blue Shield Association (BCBSA) said it well:

It is imperative from an operational and business-planning perspective to know whether [CSR reimbursements] will be covered by the federal government . . . ahead of filing premiums for state approval, committing to participate in the Exchanges, and making off-Exchange individual market decisions.¹⁸



The bottom line here is that insurers can play when they know what the rules are, but when rules are uncertain they are more likely to exit. Uncertainty is a killer to insurance markets, but whatever damage we can expect from CSR reimbursement uncertainty has already been done. It is water over the dam. The federal government does not reimburse insurers for CSRs, so any policy proposals must be evaluated against this reality.

Insurers will enter and exit the individual market for many reasons. Absent a tiny number of insurers whose 2018 premiums did not prepare them, no further exits will come as a result of the annulment of CSR reimbursements last October. If CSR reimbursements are reinstated with enough lead time for insurers to adjust, one can predict an effect in the direction of insurer exit, although the effect size will probably be small. The effect results from insurers losing a few percent of revenue by losing the retention added to premium when CSRs are loaded. It also entails a slightly smaller market, by about 1 million according to the CBO.

CONCLUSION

Reinstating CSR reimbursements has one pro, which is reducing taxpayer commitments. The cons are all related to market stabilization. Premium subsidies shrink, making policies less attractive to many members, some of whom—probably the healthiest—exit the market. The number of uninsured people increases. Insurers lose as much as 2.4 percent of revenue *and* have the administrative burden of performing CSR reconciliation.

In sum, reinstating CSR reimbursements will not have a single market-stabilizing effect, but many destabilizing effects. Our national debt is a legitimate concern, and such a policy makes advances toward the goal of reducing it. However, if the goal is to stabilize individual health insurance markets, reinstating CSR reimbursements is misguided.

PENDING LEGISLATION AND APPEAL

The only path presently available for reinstating CSR reimbursements is the Alexander-Murray market stabilization bill. It appropriates CSR reimbursement for a mere two years: 2018 and 2019! If passed, when insurers prepare for the 2020 plan year they will face the same CSR uncertainty experienced during preparations for 2018.

Also important, it will not give insurers CSR reimbursement on top of CSR premium loads. The bill requires states to submit

a provision for how insurers will rebate excess CSR revenues within 60 days of enactment.¹⁹ Chief Architect Lamar Alexander said, “we have a page-and-a-half to make it clear that insurance companies cannot ‘double dip.’”²⁰ ■



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A Simple Proposal to Save the Individual ACA Market

By Joe Slater and John J. Culkin

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"You gotta keep 'em separated."

—The Offspring, "Come Out and Play"

THE INDIVIDUAL INSURANCE MARKET AND PRE-EXISTING CONDITIONS

Since its passage, the Affordable Care Act (ACA) has been a controversial law. From the time of its passage in March 2010 until U.S. House and Senate Republicans began their efforts to repeal and replace the ACA in the spring of 2017, support for the law has never exceeded 50 percent.¹

The ACA's lack of popularity is a function of the disruption it has caused in the Individual insurance markets and the premium increases passed on to policyholders. However, some provisions of the ACA are very popular. One aspect of the law that has significant public support is the protections it provides for persons with pre-existing conditions (i.e., guaranteed issue and modified community rating), with polls showing public support for these provisions at 78 percent² or greater.³

Protections for persons with pre-existing conditions and the lack of a strong Individual mandate are the main reasons for the high premium increases observed to date in the Individual ACA market. Simply put, high premium rates have caused younger and healthier consumers to forgo ACA coverage. This problem is exacerbated by the current 3:1 age rating restrictions, which result in younger consumers paying higher premiums compared to their relative risk. As premium rates continue to rise, this trend will escalate, which could lead to one or more states finding their Individual ACA markets in an adverse selection spiral.

It is the opinion of the authors that persons with pre-existing conditions are not insurable risks and that attempts to accommodate

them in insurance market risk pools are bound to fail. Furthermore, we think that providing health care insurance coverage to persons with pre-existing conditions amounts to a necessary form of charity and is therefore a public good. We believe that forcing responsibility for the funding and management of public services onto participants in private markets is neither fair nor prudent. Instead, we believe the cost of such mandates should be the responsibility of those who enact them (i.e., the general public through its elected officials and government agencies).

The authors agree that persons with pre-existing conditions should not be denied affordable health insurance coverage. However, we think the appropriate vehicle for covering these people is a high-risk pool attached to the Individual ACA market and funded by general tax revenues. We believe that a properly structured high-risk pool would greatly lower premiums in the Individual ACA markets, significantly reduce the number of uninsured, provide for better returns on investment for care management programs, would be relatively inexpensive to operate, and would provide for a strong and sustainable lasting Individual health insurance market in the United States.

POLICY PROPOSAL

This section provides the details for our proposal for the establishment of a permanent high-risk pool to pay for the cost of members with pre-existing conditions in the Individual ACA market. Please note that, to make our proposal as easily understandable as possible, all rules, subsidies, and structures that currently apply to the Individual ACA markets would continue to do so unless stated otherwise. Here is our proposal:

1. The federal government, through the Centers for Medicare & Medicaid (CMS), would administer a high-risk pool to cover people with pre-existing conditions who are seeking health insurance coverage in the Individual ACA market.
2. The cost of the program would be funded by a combination of the insurance premiums paid by the members identified with pre-existing conditions and general tax revenue generated through an additional payroll tax.
3. All member premiums in the Individual ACA marketplace would be priced assuming that no one in the risk pool has a pre-existing condition.
4. The allowable age rates for adults would increase from the current ratio of 3:1 to 5:1.
5. Members identified as having one or more pre-existing conditions would have their premiums and claim costs ceded to CMS. Members would continue to use their "insurer's" networks and benefit plans as long as those members



continued to pay their premiums to the insurance company. Insurers would forward providers' bills for members with pre-existing conditions to CMS as they are received, and CMS would directly pay the providers within a set period of time (e.g., three to six months).

6. To be defined as having a pre-existing condition, an applicant would be required to have a current diagnosis at the time of enrollment for one or more conditions from a pre-defined list of conditions. This means that a member who develops a condition that is on the pre-existing conditions list during a coverage period would be the financial responsibility of his insurance company, not CMS, until the beginning of the next coverage period. Please note that the policy would allow insurers to underwrite new members entering the Individual ACA for the purpose of determining whether or not they have a pre-existing condition at the time of enrollment.
7. CMS would establish care management programs (administered internally or externally through vendors) for members identified as having pre-existing conditions and would work directly with providers to efficiently and successfully manage the care of those members.

Please note that this list is a general policy outline. We imagine that there could be ways to “game” this, and we reasonably expect that legislators and regulators will anticipate and react to attempts to circumvent the purpose and goals of the policy.

MODELING METHODOLOGY FOR CLAIMS PROJECTIONS

The relative costs of Individual ACA members in 2015, with and without pre-existing conditions, were modeled using the 2014 and 2015 Individual ACA membership and claims experience Axene Health Partners' (AHP) proprietary experience database. The 2015 Individual ACA experience in AHP's

experience database included more than 2.5 million member months. Chronic conditions for these members were assigned using the University of California, San Diego's Chronic Illness and Disability Payment System (CDPS) risk adjustment model. The CDPS model assigns one or more of 58 possible conditions based on ICD9 and ICD10 diagnosis codes.⁴

To simulate the underwriting of pre-existing conditions, we defined two classes of members with pre-existing conditions: members with known conditions and members with undisclosed conditions. Members with known conditions were identified by comparing the CDPS results for Individual ACA members in 2015 with the CDPS results for members with any eligibility in 2014 with this health insurer. Conditions for these members that existed in both 2014 and 2015 were considered to be pre-existing in 2015. Members with undisclosed conditions were, by definition, more difficult to identify. For members that had Individual ACA eligibility in 2015 but no prior eligibility with a health insurer in AHP's experience data, we assumed that the member had an undisclosed pre-existing condition if claims incurred within the first month of a member's eligibility, as well as the claims over the remainder of 2015, were for one or more of the listed CDPS conditions.

Because the CDPS model is intended to calculate the total relative risk of a given member based on all of a member's conditions, the model can flag a member for multiple conditions. For our modeling purposes, we wanted to assign at most one pre-existing condition per member, because it was not necessary for us to split a member's total claims cost across multiple conditions. In cases where the CDPS model assigned more than one pre-existing condition to a given member, only the most severe condition was recorded. Condition severity was based on the CDPS model's risk weights, and all costs were assigned to the condition with the highest risk weight.⁵

We did not consider all of the 58 conditions used in the CDPS risk adjustment model to be appropriate for the pre-existing conditions high-risk pool. Approximately two-thirds of the CDPS condition categories were excluded due to their relatively low CDPS model risk weights. We tended to keep conditions with qualifiers of “High” or “Very High,” more often than qualifiers of “Medium” or “Low.” We also used some judgment to include certain conditions when other categories within a certain condition class were already included. In the end, 21 conditions for adults and 19 conditions for children were chosen as appropriate for the pre-existing conditions high-risk pool. Members who did not have a pre-existing condition on the list of chosen conditions, or members with no conditions at all, were assigned a condition of “none” for our modeling purposes. Table 1 provides a summary of the pre-existing condition categories chosen.

Table 1
Summary of Pre-Existing Condition Categories

CDPS Condition Category	Child Conditions	Adult Conditions
Hematological, extra high	✓	✓
Renal, extra high	✓	✓
Cancer, very high	✓	✓
Pulmonary, very high	✓	✓
Hematological, very high	✓	✓
Renal, very high	✓	✓
Infectious, high	✓	✓
AIDS, high	✓	✓
Gastro, high	✓	✓
Pulmonary, high	✓	✓
Cancer, high	✓	✓
Cardiovascular, very high	✓	✓
Metabolic, high	✓	✓
Hematological, medium	✓	✓
Infectious, medium	✓	✓
Central Nervous System, medium	✓	✓
Diabetes, type 1, high	✓	✓
Central Nervous System, high	✓	✓
HIV, medium	✓	✗
Renal, medium	✗	✓
Cardiovascular, medium	✗	✓
Skeletal, medium	✗	✓

Member months, member counts, allowed claims, and paid claims from AHP’s experience database for 2015 were aggregated for each condition into seven age bands. From these summary statistics, the probability of a member having a given condition by age band was calculated. Average allowed and paid claims PMPMs were also calculated for each condition and age band.

Using the summary statistics developed from AHP’s experience database for 2015 Individual ACA experience data, we modeled the expected cost of each state’s 2015 Individual ACA market. The total Individual ACA population that would be simulated for each state, as well as the distribution of ages within a given state, were collected from CMS public use data. The total Individual ACA population of each state was modeled based on the total State Billable Members Months listed in Appendix A to the Summary Report on Transitional Reinsurance Payments

and Permanent Risk Adjustment Transfers for the 2015 Benefit Year.⁶ Billable member months were grossed up by approximately 0.40 percent to calculate total member months. This gross-up factor is based on the ratio of total member months to billable member months that we have seen in our clients’ recent data. Where possible, the distribution of ages within a state were based on the 2015 Marketplace Open Enrollment Public Use File.⁷ This report contains information for only the 37 states that used a federally facilitated exchange in 2015. For the states not captured in that report, the distribution of ages in the 2017 Marketplace Open Enrollment Public Use File were used instead.⁸

A Monte Carlo simulation was performed in order to create a simulated Individual ACA market for each state. A set of random numbers was generated for each member in each state. These random numbers were used to assign the member’s age band by comparing the random number to the age distribution of members for a given state. A second set of random numbers was generated for each member and used to assign a condition by comparing the random number to the distribution of conditions for each age band. PMPM costs for each condition within each age band were scaled so that the expected total paid PMPM for each state tied to the state’s Average PMPM Claims reported in the 2015 Paid Claims Cost by State Report,⁹ produced based on data submitted to the EDGE server for purposes of the reinsurance program.

Please note, we believe the actual population of people with pre-existing conditions who would obtain coverage through the defined high-risk pool would be essentially unchanged from the 2015 Individual ACA members whom we have identified as having a pre-existing condition from our list. This is because the ACA premiums and subsidies are very attractive to those with pre-existing conditions, and we do not expect that our proposal would make the Individual ACA market more attractive to people with pre-existing conditions in any meaningful way.

Using the methodology and data sources outlined, we were able to model the costs of the Individual ACA markets in only 48 states. Excluded from our analysis were Massachusetts, Vermont, Washington, D.C., and other U.S. territories such as Puerto Rico and Guam, due to a lack of publicly available information necessary to model the costs of their Individual ACA market participants in 2015.

The results of our modeling provided us with average paid claims and “sustainable market premium” PMPMs for each of the 48 states. These metrics were calculated both including and excluding members with pre-existing conditions. We defined the average sustainable market premium as the premium that would result in an average loss ratio of 82 percent in each state’s

Individual ACA market. Our last step was to develop aggregate results for each of the four metrics across all 48 states.

MODELING RESULTS

Table 2 provides a summary of the results of the 2015 Individual ACA markets in the 48 states we modeled.

Table 2
Summary of Results of Simulations of
2015 Individual ACA Markets

Metric	Pre-Existing	No Pre-Existing	All	Without Pre-Existing
Member Months (000s)	4,957	156,095	161,052	-3.1%
Paid Claims (\$000,000)	\$14,298	\$47,571	\$61,870	-23.1%
Sustainable Market Premium PMPM	N/A	\$371.66	\$468.49	-20.7%

Ceding members with a pre-existing condition to CMS would have decreased the size of the 2015 Individual ACA markets in the 48 states in our analysis by approximately 3.1 percent, lowered total paid claims by approximately 23 percent, and decreased sustainable market premiums by almost 21 percent.

In total, health insurers in the 48 states in 2015 would have ceded \$14.3 billion in claims and \$1.84 billion in premium to CMS (leaving a net unfunded program cost of \$12.5 billion) under our proposed high-risk pool program. Assuming that program expenses are 5 percent of total costs results in net program costs of \$13.1 billion a year in 2015 dollars for the 48 states. Scaling this result to account for all 50 states, Washington, D.C.,

and U.S. territories would increase net program costs to \$13.6 billion a year in 2015 dollars, which we rounded to \$14 billion to provide some conservatism in our estimate.¹⁰

By ceding members with pre-existing conditions to CMS' Individual ACA high-risk pool, we have shown that insurers could lower sustainable market premium rates by more than 20 percent. A reduction in Individual ACA sustainable market premiums of 20 percent would make future premium rates much more attractive to younger and healthier people who would otherwise forgo health insurance coverage.¹¹

Similar to the manner in which members with pre-existing conditions can cause premium rate increases to compound due to adverse selection, removing those members from the Individual ACA pool could have a favorable compounding effect on rates as a healthier average risk pool causes premiums to drop, thereby attracting additional healthy members who have an additional favorable impact on premiums.

Additionally, resetting the age curve (i.e., the maximum ratio of premiums paid by members age 65 to premiums paid by members age 21) from 3:1 to 5:1 allows for a further decrease in required premiums for younger and healthier members.

Table 3 shows that removing members with pre-existing conditions from the Individual ACA risk pool and resetting the premium age curve from 3:1 to 5:1 allows for decreases in required premium rates for all ages of at least 5 percent, while decreasing rates for the youngest members over 40 percent. These premium decreases are before the impact of the positive selection spiral. With the lower rates attracting more younger individuals into the risk pool, the premiums for older individuals will decrease accordingly.

Table 3
Comparison of Premium Rates by Age Band

Age Band	With Pre-Existing and 3:1	Without Pre-Existing and 3:1	Without Pre-Existing and 5:1	% Change*
<18	\$220.10	\$176.01	\$125.28	-43.1%
18-25	\$275.87	\$220.61	\$157.11	-43.0%
26-34	\$318.49	\$254.69	\$202.10	-36.5%
35-44	\$362.48	\$289.87	\$252.18	-30.4%
45-54	\$496.93	\$397.40	\$405.25	-18.5%
55-64	\$747.12	\$597.47	\$690.07	-7.6%
65+	\$845.80	\$676.38	\$802.40	-5.1%
Average	\$468.49	\$371.66	\$371.66	-20.7%

* Percent change compares "Without Pre-Ex and 5:1" to "With Pre-Ex and 3:1" columns

ADDITIONAL CONSIDERATIONS

Done correctly, we believe the creation of a high-risk pool of Individual ACA members with pre-existing conditions would result in a better return on investment for care management programs for these members. Given that members are allowed to change insurance carriers, persons with pre-existing conditions are as likely as any other market participants to shop for better plans and rates for the coverage they require. Care and disease management programs often require long time horizons to bear results. This means that insurers are less likely to implement cost-saving programs when members who benefited from the programs could change insurers before the full impact of the members' claims cost savings are realized. By moving a large percentage of those with high-cost conditions to care management programs administered by a single entity (i.e., CMS), the return on investment of these programs is likely to be higher and results of the programs are likely to be more impactful for all insurers participating in the market.

Due to the large volume of claims for members with pre-existing conditions, CMS would have the ability to review clinical practices, related costs, and outcomes for the services provided to these members. This information could be used to develop approaches to improve the effectiveness and efficiency, while lowering the cost, of the care provided to these high-cost claimants. Using evidence-based targets, CMS could then enter into gain- and/or risk-sharing arrangements to help improve the quality and lower the cost of care provided.

CONCLUSION

In this paper, we have introduced a straightforward and workable policy proposal that would continue to provide health insurance coverage to people with pre-existing conditions, significantly lower premiums in the Individual ACA insurance markets, reduce the number of uninsured, and allow for the creation of care management and risk-sharing arrangements with providers that could greatly improve the quality and lower the cost of care. The annual price of this proposal would be approximately \$14 billion in 2015 dollars and represents an approximately 0.38 percent increase in the federal budget.¹² Considering the importance that voters place on health care cost, quality, and access, we believe that our policy proposal would provide a popular and effective change to this critical component of the U.S. health care system at relatively small price.¹³ ■



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ENDNOTES

- 1 <http://www.pewresearch.org/fact-tank/2017/02/23/support-for-2010-health-care-law-reaches-new-high/>.
- 2 Cato Institute Health Care Survey, Cato Institute/YouGov, https://object.cato.org/sites/cato.org/files/wp-content/uploads/catoinstituteyougov_healthcaresurvey.pdf.
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- 8 https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Marketplace-Products/Plan_Selection_ZIP.html.
- 9 <https://www.cms.gov/CCIIO/Resources/Data-Resources/Claims-Cost-Data-by-State.html>.
- 10 Based on 2015 U.S. Census estimates, approximately 96.3 percent of the population is captured by the 48 states we modeled.
- 11 We are assuming that in future years, health insurers participating in the Individual ACA market will sell insurance coverage with sufficient profit margins, and not at a loss as many insurers did in 2015. To be clear, we are not comparing premium rates to what was actually charged in 2015, but rather to what premium rates should have been to allow for sufficient margin.
- 12 <https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/graphic/51110-budget1overall.pdf>.
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Risk Adjustment: The Details and Why They Matter

By Karena Weikel

Where there is financial risk, there is a desire for an actuary to manage it. That is why Geisinger Health Plan (GHP) recently formed a Risk and Revenue department and charged me with overseeing it. This team is a blend of actuarial analysts and certified professional coders working together to understand the complexities of risk adjustment.

This team is an example of how actuaries can apply analytical skills and business knowledge to solve problems. As more organizations recognize risk, their tendency will be to turn to actuaries to help them navigate it. This is where it gets exciting for actuaries. The Centers for Medicare & Medicaid Services Hierarchical Condition Category (CMS-HCC) risk adjustment model is one such opportunity.

Risk adjustment uses algorithms to predict health care costs based on the relative actuarial risk of enrollees. This article focuses on the CMS-HCC Part C risk adjustment model.^{2,3} The model is provided by CMS to the public through software that includes an SAS program. The SAS program calls on several SAS macros to create HCC score variables using coefficients from nine different regression models. We will discuss eight of these models throughout the article. Once we have explored all the models and their intricacies, I think you will quickly discover the essential role of the actuary in risk adjustment.

WHAT IS RISK ADJUSTMENT?

Risk adjustment is a methodology for payment used by government agencies to adjust health plan premium payments based on expected health care costs. Some of the payment methodology currently in use was mandated by the Balanced Budget Act of 1997, the Medicare Prescription Drug, Improvement and Modernization Act of 2003, and the Patient Protection and Affordable Care Act of 2010.

Risk adjustment is a win-win situation for health plans. If implemented strategically, it pays for disease burden, not quantity of services. It is a true way to manage a member's care. The goal

is to ensure members are managed properly to predict the best future outcomes in care and health. Statistical models are created to calculate the risk scores, which predict individual beneficiaries' health care expenditures relative to the average beneficiary. The purpose is to discourage plans from constructing business models designed to avoid risk (e.g., higher rates for sicker patients and lower rates for healthy people). The result of this complex model is the "risk score" that adjusts payments up or down pending risk.

WHAT ARE RISK ADJUSTMENT MODELS?

Medicare Advantage (MA) plans include three models: CMS-HCC (Part C—Medicare Advantage), CMS-ESRD, and CMS-RxHCC (Part D—pharmacy).⁴ In Pennsylvania, the Medicaid managed-care product uses the Department of Human Services (DHS) CDPS+Rx model (Chronic Illness and Disability Payment System and Medicaid Rx, developed by the University of California, San Diego with modified weights). The newest model for commercial exchange is the Department of Health and Human Services (HHS) HCC model. These models have different risk adjustment factor weights, formulas and application. For Medicare Advantage, risk adjustment is used to calibrate premium revenue. For both the commercial exchange and Medicaid lines of business, the risk adjustment program redistributes premium revenue. The redistribution creates a zero-sum game, which means we are in direct competition for the share of the pool of risk-eligible dollars. Since the CMS-HCC model has been around the longest, this article centers on explaining all the intricacies in this model.

What are the Model Intricacies?

In 2004, CMS created the Hierarchical Condition Category (HCC) risk adjustment program for MA plans and had it fully phased in by 2007. Payments to MA plans are adjusted based on the health status and demographics of their enrollees using diagnoses. The payment calculation takes the CMS-approved geographic location base rate (state/county bid amount) times the health status (HCC factors) times the demographic factors.

The CMS-HCC Part C model provides the HCC factors and demographic factors used to calculate risk scores to adjust capitated payments for aged and disabled beneficiaries enrolled in MA plans. Risk scores are based on the demographics and diagnoses a member has coded through ICD-10 codes information from encounters that link to an HCC. The model measures the disease burden and includes HCCs that are correlated to diagnosis codes. The scores are created by adding the coefficients associated with each beneficiary's demographic and disease factors.

The CMS-HCC Part C model is prospective, meaning diagnoses from the previous year and demographic information are used to predict costs for next year. The model calibration is built

on Medicare fee-for-service experience (not MA); therefore, other adjustments are needed to calibrate based on the MA population.

How is the Data Submitted to CMS?

CMS’s Risk Adjustment Processing System (RAPS) allows health plans to submit diagnosis data to CMS using six data elements.⁵ For payment year 2016, the transition away from RAPS and toward the Encounter Data Processing System (EDPS) began. CMS’s EDPS requires full claim information (837p and 837i format) to be sent. As the transition continues through 2020, CMS will use a blend of data from RAPS and EDPS in its calculations (Table 1). CMS has indicated the weighting will be as reflected in this schedule. Risk scores for 2016 weight the risk eligible diagnosis codes from RAPS at 90 percent and EDPS at 10 percent.

Table 1
Encounter Data Blending Schedule

Payment Year	RAPS	EDPS
2014	100%	0%
2015	100%	100%
2016	90%	10%
2017	75%	25%
2018	85%	15%
2019	25%	75%
2020	0%	100%

What is an HCC?

The CMS software SAS program first cross-references diagnoses to Condition Categories (CCs). Then the program imposes hierarchies on the CCs based on previously defined Hierarchical Condition Categories (HCCs). Each HCC encompasses medical conditions that map to a corresponding group of ICD-10 diagnosis codes with a single relative factor assigned to it. Notably, not every diagnosis code becomes an HCC. In addition, each diagnosis code can map to only one HCC. The number of diagnoses mapping to an HCC can vary from one to many thousands.

The diagnoses themselves are obtained by medical claims data and/or medical record review. The medical claims come from inpatient, outpatient and physician services, but not all claims are eligible. Laboratory, home health, durable medical equipment, ambulance, radiology, pharmacy and a few other types are regularly excluded. If an enrollee doesn’t have any claims, zeros are assigned to all HCCs. Once the HCCs are identified, the program computes predicted risk scores from nine regression models:

- Community—Non-dual aged
- Community—Non-dual disabled
- Community—Full benefit dual aged
- Community—Full benefit dual disabled
- Community—Partial benefit dual aged
- Community—Partial benefit dual disabled
- Institutional
- New enrollee
- C-SNP new enrollee (not discussed)

In the 2016 and 2017 payment years, only the 2014 model (v22) will be used. The v22 model has a total of 79 HCCs (Table 2 contains a subset for illustration). Separate factors are created to reflect the unique cost patterns of beneficiaries in the community and those residing in long-term care institutional facilities. There are also separate factors based on a beneficiaries Medicaid eligibility status (Non-Dual, Full Dual, or Partial Dual). CMS’s model allows for patients to have more than one HCC assigned to them. Each HCC must be captured annually. CMS’s guidance is to code all documented conditions that coexist at the time of the visit. It must be a face-to-face encounter between a credentialed provider and a patient.

What is the Meaning of the Word *Hierarchical*?

In the model (Table 3), *hierarchy* indicates the overriding that occurs for similar categories by more severe variations of the same health condition. An example of this is a beneficiary who has diabetes without complications (HCC19) and then progresses to diabetes with acute complications (HCC17). The costs of HCC19 are covered under HCC17 and therefore only HCC17 will be included in the risk score.

How are Disease Interactions Handled?

Disease interaction adjustments must be made when a hierarchy of severe conditions coexist. This is handled by applying additional factors to the risk score composition. An example of a disease interaction is chronic obstructive pulmonary disease (COPD) and congestive heart failure (CHF) (Table 4). A beneficial with COPD and CHF who aged into Medicare and is non-dual and not institutionalized would get 0.19 added to the overall HCC factor. The disease interaction factors account for the expected higher health care costs based on the enrollees’ increased risk.

WHAT IS A RISK SCORE?

Risk scores have many components that build on one another in an additive model. The following are the elements of a risk score:

- Demographic factors: age and gender
- Original reason for entitlement code (OREC)
- Disability indicator
- Community, institutional, and new enrollee segments

Table 2
Example HCCs and Factors

		Risk Model Type						Institutional
		Community						
		Non-Dual		Full Dual		Partial Dual		
Variable	HCC Description	Aged	Disabled	Aged	Disabled	Aged	Disabled	
HCC1	HIV/AIDS	0.312	0.288	0.585	0.500	0.550	0.232	1.747
HCC2	Septicemia, sepsis	0.455	0.532	0.596	0.811	0.409	0.417	0.346
HCC8	Metastatic cancer & acute leukemia	2.625	2.644	2.542	2.767	2.442	2.582	1.143
HCC9	Lung & other severe cancers	0.970	0.927	0.973	1.025	0.955	0.879	0.727

Data from Risk Adjustment, Centers for Medicare & Medicaid Services, <https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Risk-Adjustors.html>

Table 3
Disease Hierarchies for the 2014 CMS-HCC Model

If HCC	HCC Label	... Then Drop HCC(s) in This Column
8	Metastatic cancer & acute leukemia	9, 10, 11, 12
9	Lung & other severe cancers	10, 11, 12
17	Diabetes with acute complications	18, 19
18	Diabetes with chronic complications	19

Data from Risk Adjustment, Centers for Medicare & Medicaid Services, <https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Risk-Adjustors.html>

Table 4
Disease Interactions

Description	Risk Model Type, Community					
	Non-Dual		Full Dual		Partial Dual	
	Aged	Disabled	Aged	Disabled	Aged	Disabled
Immune disorders • cancer	0.893	0.675	0.815	0.652	0.776	0.808
Congestive heart failure • diabetes	0.154	0.096	0.205	0.160	0.178	0.139
Congestive heart failure • chronic obstructive pulmonary disease	0.190	0.174	0.240	0.217	0.186	0.181
Congestive heart failure • renal	0.270	0.493	0.271	0.711	0.299	0.609

Data from Risk Adjustment, Centers for Medicare & Medicaid Services, <https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Risk-Adjustors.html>

- Medicaid eligibility: non-dual, full benefit dual, or partial benefit dual
- Disease hierarchy (HCCs)
- Disease and disabled interactions

When generating a risk score, the demographic factors are considered first, starting with age and gender. Age factors (Table 5) are created in five-year age bands for people 55 and older and defined by gender. Another demographic factor is the original reason entitlement code (OREC), which results in the inclusion of a factor in the risk score for beneficiaries 65 years of age or older who were originally entitled to Medicare due to disability.

Other demographic factors are disability indicator for a less than 65-year-old, Medicaid status, and institutional status (i.e., whether living in an institution or in the community) (Table 6). For payment year 2017, the Medicaid dual status was further defined as non-dual, full-dual, and partial dual with separate factors for the Community model. Different factors exist for community versus a long-term institutional beneficiary within each HCC and demographic. If a beneficiary has less than 12 months of Part B experience (within the defined data collection period), there is a new enrollee risk adjustment factor type (RAFT code) and a set of factors that don't receive any HCC additives.

Table 5
Example of Female Age Factors

Female Age (Years)	Risk Model Type						Institutional
	Community						
	Non-Dual		Full Dual		Partial Dual		
	Aged	Disabled	Aged	Disabled	Aged	Disabled	
0-34		0.244		0.318		0.344	1.031
35-44		0.303		0.306		0.383	0.999
45-54		0.322		0.338		0.374	1.007
55-59		0.350		0.388		0.371	0.986
60-64		0.411		0.449		0.395	1.028
65-69	0.312		0.425		0.341		1.200
70-74	0.374		0.511		0.406		1.092
75-79	0.448		0.611		0.484		0.995
80-84	0.537		0.739		0.552		0.860
85-89	0.664		0.917		0.678		0.749
90-94	0.797		1.037		0.817		0.626
95+	0.816		1.094		0.913		0.456

Data from Risk Adjustment, Centers for Medicare & Medicaid Services, <https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Risk-Adjustors.html>

Table 6
Example of Other Demographic Factors

Variable	Risk Model Type				Institutional
	Community				
	Non-Dual	Full Dual	Partial Dual		
	Aged	Aged	Aged		
Medicaid	N/A	N/A	N/A		0.062
Originally disabled, female	0.244	0.172	0.126		N/A
Originally disabled, male	0.152	0.192	0.105		N/A

Data from Risk Adjustment, Centers for Medicare & Medicaid Services, <https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Risk-Adjustors.html>

A beneficiary who is categorized as having end-stage renal disease (ESRD) runs through a separate ESRD model that has new enrollee, dialysis, transplant, post-transplant and hospice (which trumps ESRD) components. The ESRD model is outside the scope of this article.

All HCCs and demographics are used to create a final risk score.

What is the Meaning of a Risk Score?

A risk score of one means the beneficiary has the average expected annual Medicare costs. A risk score greater than one means the beneficiary is likely to incur costs higher than average. Less than one indicates expected costs are less than average.

The risk score is further adjusted by applying a coding intensity adjustment factor (MA coding pattern). This takes the difference between the scores that a group of beneficiaries would have if they enrolled in MA compared to their scores in FFS Medicare. This is intended to neutralize differences in coding patterns between FFS Medicare and MA. Per CMS, the MA plan risk scores increase faster than FFS Medicare risk scores. This adjustment is necessary since the risk adjustment model is calibrated using FFS Medicare experience.

The last factor in the risk score is the FFS normalization factor, which changes annually and is intended to “normalize” MA beneficiary risk to be equal to FFS Medicare. This factor adjusts for the growth of risk scores year after year. This accounts for the difference in the model’s calibration year versus the claims experience period to account for trend. The coding intensity and normalization factors are displayed in Table 7 across payment years.

How do I Calculate a Risk Score?

For payment year (PY) 2017,

$$\begin{aligned} \text{Portion of risk score from RAPS \& FFS} = & \\ & \frac{[(\text{raw risk score}^* \text{ from RAPS + FFS diagnosis}) / (\text{PY 2017 normalization factor})] \times (1 - \text{PY 2017 coding intensity factor}) \times 0.75}{+} \\ & \frac{\text{Portion of risk score from EDPS \& FFS} =}{+} \\ & \frac{[(\text{raw risk score}^* \text{ from ED + FFS diagnosis}) / (\text{PY 2017 normalization factor})] \times (1 - \text{PY 2017 coding intensity factor}) \times 0.25} \end{aligned}$$

*raw risk score = demographic + disease relative factors

Why are Risk Adjustment Analytics Needed?

Historical and industry experience are used to create models that draw from a variety of sources:

- Pharmacy and medical data
- Historical HCCs along with clinical judgment on persistency
- Significant score changes
- Frequency of HCC prevalence
- Data quality and chart reviews
- Billing systems that are accurate and on par with billing standards
- Addressing billing constraints
- Revenue cycle opportunities
- Natural language processing
- Exclusion criteria

These models assist in the creation of target chart reviews based on opportunities from a prospective, concurrent and retrospective basis to achieve the highest level of coding accuracy. A

Table 7
Coding Intensity Adjustment and Normalization Factors

	Payment Year				
	2013	2014	2015	2016	2017
Date of service year	2012	2013	2014	2015	2016
HCC model	2013 (v12)	2013 (v12) 25%, 2014 (v22) 75%	2013 (v12) 67%, 2014 (v22) 33%	Blended ICD9/10 2014 (v22)	2017 (v22)
Model denominator year	2011	2011/2012	2011/2012	2011/2012	2015
EDPS & RAPS blend	N/A	N/A	Combined	10% EDPS, 90% RAPS	25% EDPS, 75% RAPS
Coding intensity factor	3.41%	4.91%	5.16%	5.41%	5.66%

Normalization Factors					
HCC	1.028	2013 Model = 1.041, 2014 Model = 1.026	2013 Model = 0.992, 2014 Model = 0.978	0.992	0.998

Table 8
Sample 2017 Payment Schedule

Risk Score Run	Claims Date of Service (Month/Year)	Submission Deadline (Month/Year)	Payment Period (Month/Year)
Initial	July 2015 to June 2016	Sep-16	January 2017 to July 2017
Mid-year	January 2016 to December 2016	Mar-17	January 2017 to December 2017
Final	January 2016 to December 2016	Jan-18	January 2017 to December 2017

health plan is afforded the opportunity to retrospectively review medical records for diagnoses that need to be added or deleted in the list of active codes. Coders have been focused primarily on retrospective medical chart reviews. Analytics can be used to determine strategies around technology, resources, operations, education and other factors to move toward prospective accuracy in disease burden.

Analytics are used for forecasting Medicare Advantage organizations’ (MAOs) future payments relating to the current payment year due to the three phases (initial, midyear and final) of the payment calculation/reconciliation by CMS. Medicare Advantage enrollees receive an initial risk score every January that is updated with two additional reviews during the year that allow updated data and additional run-out from the historical experience period. Table 8 gives an example of timing for the 2017 payment year.

WHY DOES THIS ALL MATTER?

Actuaries have the opportunity to support CMS in the pursuit of higher quality and preparing for the future. The health care industry is moving toward value-based care, and many of the value-based care arrangements have some form of diagnosis-based risk adjustment program. Actuaries working in risk adjustment can help educate the physician community about the importance of disease burden accuracy. They can establish trust with community providers by demonstrating knowledge and strong analytics to support the coders’ outcomes of correct coding initiatives. It is important to create the best provider experience while creating less provider abrasion. Building these key relationships will help the provider community document better at the point of care and be successful in the new world of value-based care.

It takes a team of true collaborators to build relationships, not only between analysts, coders, and physicians but also spread throughout health care in many areas (provider network management, quality and accreditation, medical management, claims, clinical informatics, case and disease management, clinical enterprises, etc.). Our mission is driven by a team that is not afraid to work with others and instead welcomes the help.

CONCLUSION

An actuary has the required skill set to understand all the intricacies and complexities built into the risk adjustment programs. The models vary with different weighting, factors, categories, hierarchies, interactions, model period, experience period, application period, duration of enrollment, institutionalized status and so on. The CMS-HCC Part C model outlined in this article alone had at least 13 different types of factors (90 RAPS/10 EDPS, CC, hierarchy (HCC), interaction, new enrollee, community or institutionalized, demographic, OREC, disabled, Medicaid, model blend, coding intensity, and normalization) to consider. An actuary is very familiar with these types of complicated models. Health actuaries began with pricing models that incorporated factors for age and gender; the models have expanded well beyond those initial factors. It is an exciting time to be a health actuary, as the health care industry and risk adjustment processes are continuously under public scrutiny and dynamic change. As a health actuary, you never know where your future will take you. Maybe yours will lead to risk adjustment as mine did. ■



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ENDNOTES

- 1 Geisinger Health Plan (GHP) may refer collectively to Geisinger Health Plan, Geisinger Quality Options, Inc., and Geisinger Indemnity Insurance Company unless otherwise noted.
- 2 Risk Adjustment, Centers for Medicare & Medicaid Services, <https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Risk-Adjustors.html> (accessed December 11, 2017).
- 3 Centers for Medicare & Medicaid Services, <https://www.cms.gov/> (accessed December 11, 2017).
- 4 Medicare, Centers for Medicare & Medicaid Services, <https://www.cms.gov/Medicare/Medicare.html> (accessed December 11, 2017).
- 5 Medicare Advantage Rates and Statistics, Centers for Medicare & Medicaid Services, <https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/index.html> (accessed December 11, 2017).

Is Your Integrated Delivery System Throwing Away Free Money?

By Karan Rustagi

Controlling the pricing of both the delivery and the insuring of health care should be powerful. That is the theory behind an integrated delivery system (IDS), also known as a provider-sponsored health plan. However, after a decade of working with such systems, I have not seen them realize their potential and I will explain why.

Optimizing value in an integrated health care delivery system requires aligning the financial interests of the health plan and the provider. That is a big challenge. To understand why it is so difficult, consider this common scenario. Suppose you are part of a health plan's leadership, such as CEO, CFO or chief actuary. A hospital system owns your health plan and you are developing the annual pricing for Medicare Advantage (insurance for aged individuals). The hospital notifies you that it would like you to increase its payment rates by 5 percent to improve its financial results. As a leader, you know the financial performance of the health plan is an assessment of your managerial performance. The typical reaction of many health plan executives is that a significant reimbursement increase is bad for the health plan business. Given that, what fact-based analysis can you perform to know the true impact on your health plan business and on the integrated system? How should you frame the discussion to appeal to leadership at the hospital system?

The short answer is to have the right actuarial analysis framed in a way that answers the question, "What's in it for the hospital?" and more important, "What's in it for the integrated delivery system?"

WHO GAINS WHEN PAYMENT RATES CHANGE

An aggressive reimbursement contract (one that is either too high or too low) between a carrier and a hospital within an IDS does not always result in optimal financial outcomes for the system as a whole. In fact, improperly aligned incentives between the CEOs of the hospital and the health plan have led to adversarial negotiations and resulted in suboptimal margin outcomes

for both entities. The numerical example that follows is a highly simplified illustration of how integration of strategic direction in actuarial work can lead to win-win solutions.

By way of background, citizens aged 65 and up can enroll in Medicare benefits directly through the Centers for Medicare & Medicaid Services (CMS), which administers this program. Alternatively, they can purchase richer benefits at a lower cost through managed-care insurance companies. CMS uses a formula to determine how much any member would cost in health care services to CMS if the member were enrolled directly through CMS. The insurers develop a bid to insure members at a lower cost than what it would cost CMS. The lower costs are achieved primarily through care management that is largely absent in members enrolled directly through CMS and results in savings to CMS. CMS shares some portion of these savings with the issuer and the shared savings are called rebates.

Consider a health plan with the bid characteristics and plan financials shown in Table 1.

We have highlighted the key numbers in dark blue. The plan's claim costs for standard Medicare fee-for-service (FFS) claims are \$525 per member per month (PMPM), which are funded entirely by CMS (in this example). The plan receives \$140 PMPM in rebates from CMS, of which \$122.50 is spent on supplemental benefits. The plan's overall margin is \$30.83 PMPM.

If the hospital raises its rates such that the overall claims of the plan go up by 5 percent, then the following things would happen:

- Claims for standard Medicare FFS benefits increase by \$26.25 PMPM (highlighted in yellow in Table 2). Since CMS funds these claims, the increased claims liability is passed on to CMS.
- Since it costs the plan more to provide standard Medicare FFS benefits now than it did before, CMS will reduce the rebates paid to the plan.
- Assuming the plan does not want to change its supplemental benefits to maintain its competitive positioning, it will still need the \$122.50 PMPM to fund these benefits, plus an additional amount to administer these benefits. These numbers are highlighted in green in Table 2.
- To keep the benefits the same, the reduction in rebate revenue flows directly to the plan's margins (highlighted in dark blue in Table 2).

The details of these effects and the bid mechanics are shown in Table 2 on page 35.

Table 1
Example Health Plan Bid and Financials

Item	Formula	CMS Reimbursement Rate	Current Contract PMPMs
a		Standardized benchmark rate	\$800.00
b		Risk score	1.000
c	a • b	Risk-adjusted benchmark rate	\$800.00

Item	Formula	Plan Basic Bid	
d		Basic claims cost @ 1.0 risk score	\$525.00
e		Administrative expenses @ 1.0 risk score	\$50.00
f		Profit margin @1.0 risk score	\$25.00
g	d + e + f	Standardized (@1.0 risk score) plan bid	\$600.00
h	b • g	Risk-adjusted plan bid	\$600.00

Item	Formula	Rebate Calculation	
i	c - h	Plan savings	\$200.00
j		Plan rebate %	70.0%
k	i • j	Plan rebate revenue	\$140.00
l	k • d / g	Supplemental benefit claims cost	\$122.50
m	k • e / g	Supplemental admin expense	\$11.67
n	k • f / g	Supplemental benefit profit margin	\$5.83

Item	Formula	Plan Financial Impact	
o	h + k	Total Part C (MA) revenue	\$740.00
p	d • b + l	Total Part C (MA) claim cost	\$647.50
q	e • b + l	Total Part C (MA) admin expense	\$61.67
r	o - p - q	Part C Margin PMPM	\$30.83

Abbreviations: CMS, Centers for Medicare & Medicaid Services; MA, Medicare Advantage; PMPM, per member per month. For simplicity, we have assumed plan risk score of 1.0, \$0 member premiums, and no Part D benefit. We also assumed a 4.5-star plan, which results in a CMS rebate payment of 70 percent.

For optimization of the IDS margin to work, the board of the IDS would have to align the plan and the hospital CEOs' incentives with the IDS' value.

It may seem like the plan margin should only go down by the amount of the rebate revenue loss (\$5.40). However, the bid mechanics and bid rules produce a leveraging effect that results in a situation where the plan margin must reduce by the stated amount to keep benefits the same. The details of the mechanics have been left out because they are highly complex and irrelevant to the discussion. The impact on each entity is shown here.

The net financial impact to the carrier = -\$24.53 PMPM

The financial impact to the hospital = +\$26.25 PMPM (equivalent to the increase in plan's claim costs)

The net financial impact to the integrated system = \$26.25 - \$23.53 = +\$2.72 PMPM

Clearly, in this case there is a net benefit to the IDS of \$2.72 PMPM that can be gained from the hospital increasing its reimbursement rates. Assuming the carrier cannot cut benefits without becoming uncompetitive, the plan will likely have to absorb the adverse financial impact (-\$23.53 PMPM) in its margin. If the carrier has been running a positive margin of at least \$23.53 PMPM, then there is a clear mathematical argument for sacrificing that margin in support of improving the integrated system's margin (by \$2.72 PMPM).

We see some version of this example manifest in annual strategy meetings between payers and providers that belong to an IDS. In some cases, we watch the two entities leaving behind that \$2.72 PMPM benefit in favor of protecting each individual entity's margin. In years when both the hospital and the carrier margins are positive, neither entity is motivated to rock the boat with such a conversation.

CONCLUSION

What gets in the way of maximizing the system value? The payer's and the provider's margins are generally negatively correlated, so why are so many IDSs attempting to maximize the value of both the payer and provider businesses separately and simultaneously? The financial incentives for the CEOs of the two systems are often based on the performance of their individual entity as opposed to the integrated entity.

For optimization of the IDS margin to work, the board of the IDS would have to align the plan and the hospital CEOs' incentives with the IDS' value. The board needs to understand that the hospital unit is benefiting at the expense of the carrier's margins (in the preceding example), but overall the system is better off. The system should enable the plan to offer competitive products while allocating financial assets (margin targets) between the payer and the provider business segments to maximize the combined returns. Maximizing the combined returns is

Table 2
Health Plan Bid and Financials After Hospital Raises Payment Rates by 5 Percent

Item	Formula	CMS Reimbursement Rate	Current Contract	+5% Contract, No Benefit Cuts	Difference
a		Standardized benchmark rate	\$800.00	\$800.00	\$0.00
b		Risk score	1.000	1.000	0.000
c	a • b	Risk-adjusted benchmark rate	\$800.00	\$800.00	\$0.00

Item	Formula	Plan Basic Bid			
d		Basic claims cost @ 1.0 risk score	\$525.00	\$551.25	\$26.25
e		Admin expenses @ 1.0 risk score	\$50.00	\$50.00	\$0.00
f		Profit margin @1.0 risk score	\$25.00	\$5.98	(\$19.02)
g	d + e + f	Standardized (@1.0 risk score) plan bid	\$600.00	\$607.23	\$7.23
h	b • g	Risk-adjusted plan bid	\$600.00	\$607.23	\$7.23

Item	Formula	Rebate Calculation			
i	c - h	Plan savings	\$200.00	\$192.77	(\$7.23)
j		Plan rebate %	70.0%	70.0%	0.0%
k	i • j	Plan rebate revenue	\$140.00	\$134.94	(\$5.06)
l	k • d / g	Supplemental benefit claims cost	\$122.50	\$122.50	\$0.00
m	k • e / g	Supplemental admin expense	\$11.67	\$11.11	(\$0.56)
n	k • f / g	Supplemental benefit profit margin	\$5.83	\$1.33	(\$4.50)

Item	Formula	Plan Financial Impact			
o	h + k	Total Part C (MA) revenue	\$740.00	\$742.17	\$2.17
p	d • b + l	Total Part C (MA) claim cost	\$647.50	\$673.75	\$26.25
q	e • b + l	Total Part C (MA) admin expense	\$61.67	\$61.11	(\$0.56)
r	o - p - q	Part C Margin PMPM	\$30.83	\$7.31	(\$23.53)

Abbreviations: CMS, Centers for Medicare & Medicaid Services; MA, Medicare Advantage; PMPM, per member per month.

presumably one of the key reasons why the hospital entered the payer business in the first place.

To maximize enterprise value, the IDS needs to critically consider how each of its businesses fits into a rapidly evolving health care ecosystem. How does the system see its hospital portfolio evolving over the next five to 10 years? What type of investments or acquisitions does the system see itself making? How can the system incentivize investments in businesses and strategies that drive care delivery to the appropriate acuity level on the continuum (e.g., inpatient to ambulatory surgery centers)? Stale incentives tied to volume (for hospitals) and medical loss ratio that is a measure of profitability (for health plans) that

cultivate the age-old tug-of-war are simply not going to cut it. IDSs need to clearly define long-term strategic goals and put the full force and capabilities of the combined enterprise in motion toward realizing these goals. ■

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Reasons to Reconcile

By Greg Sgrosso

Financial reconciliation is critical to a successful Medicare Advantage (MA) bid. It can be a frustrating lesson to learn in May that a reconciliation is not balancing, as the pressure to complete the pricing increases while the days before the deadline tick down.

Alternatively, the frustration can be suffered later in the process as a bid or financial audit identifies discrepancies in the data. In this article, we assert that reconciling data early is extremely important and should be routinely revisited as new data or information is incorporated into bid pricing. We assume the reader has a good understanding of the MA bid process and a fair amount of the terminology surrounding it.

PREPARING TO RECONCILE

What does it mean to reconcile? According to Investopedia, “[r]econciliation is an accounting process that uses two sets of records to ensure figures are correct and in agreement.”¹ For the MA bids, the data used in the pricing must match the financial statements. Again, according to Investopedia, “[f]inancial statements for businesses usually include income statements, balance sheets, statements of retained earnings and cash flows.”² The “income statement covers a range of time, which is a year for annual financial statements” and “provides an overview of revenues, expenses, net income and earnings per share.” Thus, the annual income statement for the base year should be the primary source that the data used in pricing should reconcile.

The first step in the reconciliation is to break out the MA line of business from the non-MA lines of business. Similarly, MA has a nuance that is not necessarily present in other lines of business, as end-stage renal disease (ESRD), hospice and employer group waiver plan (EGWP) members are excluded from certain elements of the pricing. It is important to be transparent in the development of the values that are assigned to each member grouping so that it will be easier to trace any discrepancies.

As actuaries, we may need help in understanding some of the finer details of the financial statements. We should not be intimidated by them and should lean on the finance department to help explain confusing parts, adjustments or notes. We are not accountants, and we are not required to be experts on every

Figure 1
Reconciliation Process

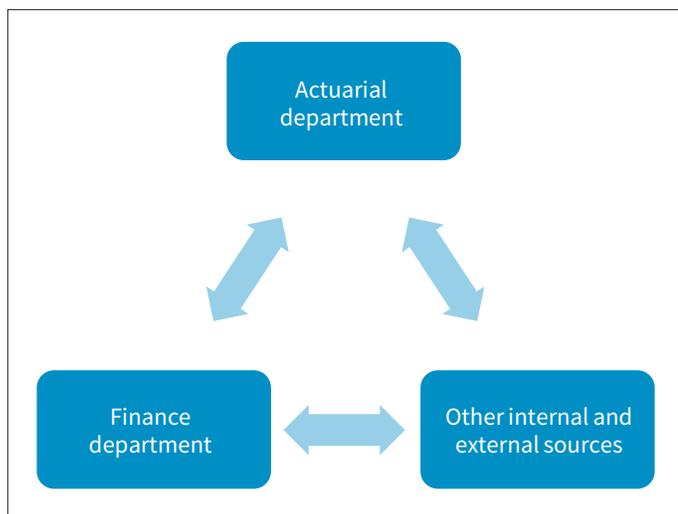


aspect of the financial statements. Nevertheless, as actuaries, we are required to understand the data and not just accept whatever comes across our desk without scrutiny. Communication with the internal departments is the key to feeling comfortable with the data (Figures 1 and 2). The other departments should also run some preliminary reconciliations and quality checks before providing data to the actuary. It is a good idea for the actuary to check consistency with prior years’ information.

Actuarial Standards of Practice No. 23 deals with data quality and addresses reconciliation in three sections:³

- **2.1 Appropriate Data.** “For purposes of data quality, data are appropriate if they are suitable for the intended purpose of an analysis and relevant to the system or process being analyzed.”
- **2.7 Review.** “An informal examination of the obvious characteristics of the selected data to determine if such data appear reasonable and consistent for purposes of the assignment. A review is not an audit of data.”
- **3.5 Review of Data.** “A review of data may not always reveal existing defects. Nevertheless, whether the actuary prepared the data or received the data from others, the actuary should review the data for reasonableness and

Figure 2
Interacting With Others in Reconciliation



consistency, unless, in the actuary’s professional judgment, such review is not necessary or not practical. In exercising such professional judgment, the actuary should take into account the extent of any checking, verification, or auditing that has already been performed on the data, the purpose and nature of the assignment, and relevant constraints.”

The Centers for Medicare & Medicaid Services (CMS) oversees the MA bids and specifically notes two Part C areas where reconciliation is mandated:⁴

1. **Base period claims expenses** (Appendix B, Section 10.2). “Reconciliation of base period experience to the audited financial statements and bid-level operational data of the Medicare Advantage organizations (MAO). The data are to be reported on an incurred rather than an accounting or GAAP basis, including claims paid, unloaded claims reserves, non-benefit expenses, and revenues. Because the results reflect an experience period versus accounting period, the data need not be based on an audited GAAP financial basis.”
2. **Non-benefit expenses** (Appendix B, Section 7.1). “A reconciliation of the base period non-benefit expenses reported in Worksheet 1 of the Bid Pricing Tool (BPT) to auditable material such as corporate financials and bid-level operational data.”

While the reconciliation of base period revenue does not have a specific reference in Appendix B, CMS’s desk review standards consistently treat revenue as a mandatory recon item.

In particular, bid instructions require the following for Part C revenue entries:⁵

- Enter bid-based MA payments and accruals from CMS.
- Include rebates for the reduction of Part A/B cost sharing and other Part A/B mandatory supplemental benefits.
- Include an estimate of the final risk-adjustment reconciliation payment for calendar year (CY) 2016, which will be received in 2017.
- Do not include rebates applied to Parts B and D premium buy-downs.
- Report the CMS revenues gross of user fee reductions and net of sequestration reductions.

In addition to these requirements relating to base period expenses and revenue (found in the same locations in the corresponding Appendix B for Part D⁶), CMS offers these directives:

- The data “[m]ust reconcile in an auditable manner to the plan-level Prescription Drug Event (PDE) data submitted to CMS for payment and reconciliation and the Part D sponsor’s audited financial statements.”
- **Related-party arrangements** (Appendix B, Section 13.3.1). “The gain/loss margin must be reconcilable to the related party’s audited financial statements.”

Across all areas, it is important to be consistent from year to year. If the data is consistent from year to year, the actuary can take some comfort that the reconciliation process is starting on a good footing.

COMPLYING WITH CMS

In the next few sections, we look at the three mandated areas that CMS has addressed and note specific issues within each that the actuary should take into consideration.

Revenue

While the base period revenue shown on Worksheet 1 does not impact the pricing of the bids, it still must be reconciled to the financial statements. Revenue can be a tricky number to reconcile. The actuary should rely on the monthly membership reports (MMRs) and plan payment reports (PPRs) as the starting point. The plan should have its operations department compare these reports against internal membership and eligibility reports for consistency. Splitting the medical (Part C) from the prescription drug (Part D) revenue is the first step, because this could affect the allocation of non-benefit expenses based

on revenue. For Part C, the revenue consists of the sum of the risk rate, Medicare second payer (MSP) amounts, cost-sharing rebates, Part B rebates, mandatory supplemental rebates and any member premium. The risk rate is the county rate from the specific bid at a 1.000 risk score multiplied by each member's risk score. The county rate at a 1.000 risk score for each bid can be found on Worksheet 5 of the base period BPTs. In addition, the rebates and member premiums can be found on Worksheet 6 of the base period BPTs.

For Part D, the revenue is comprised of the direct subsidy, the low-income premium subsidy and the basic premium rebate and premium, along with any supplemental premium rebates and premium. The Part D basic and supplemental premium rebates and premiums actually come from Worksheet 6 of the Part C BPT. The direct subsidy is calculated by subtracting the basic premium from the basic bid, both shown on Worksheet 7 of the Part D BPT, multiplied by each member's risk score.

Other components of revenue come from additional sources besides the MMRs. The PPRs contain a summary of the revenue from CMS as well as the sequestration amounts, Part D settlements and user fees. While not required by the bid instructions, it is important for MAOs to reconcile the MMRs and PPRs to the bids. This reconciliation allows MAOs, especially the actuaries and finance, to confidently use the reports provided by CMS. Like any report, if the values do not make sense, it is important to notify internal users and CMS.

The Risk Adjustment Processing System (RAPS) and now the Encounter Data Processing System (EDPS) accruals need to be taken into account. RAPS/EDPS accruals are necessary to reflect the timing of the revenue paid by CMS. The magnitude of the payments and timing of the revenue are influenced by the diagnoses updates from CMS as well as MAO efforts to appropriately reflect member diagnoses. The timing of these accruals will be affected by an adjustment in August or September for the final settlement for the prior year (Figure 3). Another accrual to reconcile is the Part D risk corridor payments.

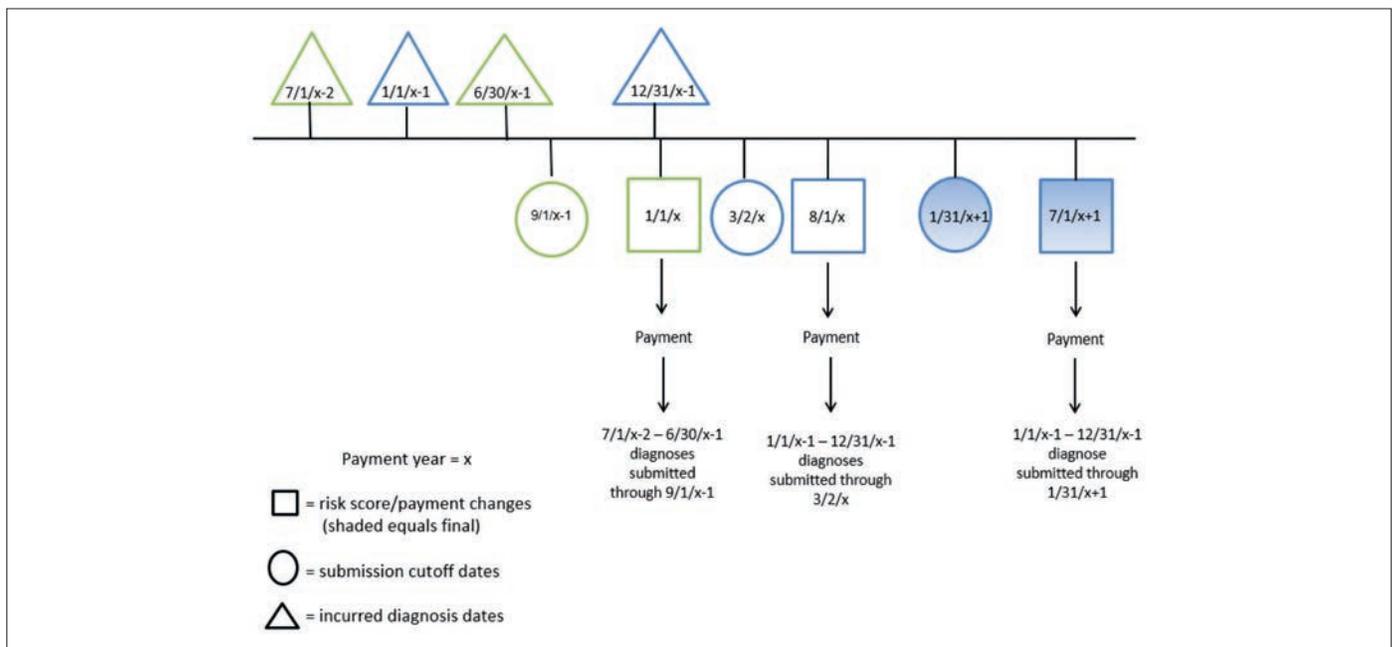
Other revenue components that should be considered are as follows:

- Prior period adjustments
- Bad debt
- Premiums from optional supplemental benefits
- Receivables for MSPs

These revenue items cannot be reflected in the bid, per CMS on page 31 of the Part C instructions:⁷

- Noninsurance revenues pertaining to investments
- Fee-based activities designed to influence state or federal legislation, such as the cost of lobbying activities
- Costs of value-added items and services (VAIS)

Figure 3
Timing of RAPS Submissions and Payments



Claims Costs

The reconciliation of the claims costs is the most important because the base period claims costs are the primary driver of the projected claims costs. As noted, the complications of the differing member statuses adds to the complication of the claims cost reconciliation process. Accounting for ESRD, hospice and EGWP, member claims can lead to inconsistencies in the reconciliation process.

While the format can vary by insurer, the basis of the Part C claims are the fee-for-service (FFS) claims plus the unpaid claims liability plus any capitation plus any other services outside the claims system (i.e., over-the-counter drugs as a medical benefit). For Part D, the PDE files capture the financial items necessary for reconciliation.

The actuary should take into account a number of items when reconciling claims costs:

- **Allowed versus paid dollars.** The bases for the bids are allowed amounts, so make sure to account for all member cost sharing so the paid amounts can be properly reconciled to the financial statements.
- **FFS costs.** Net of margin on incurred but not paid (IBNP) amounts—bids do not include margin on IBNP, while financial statements would.
- **Capitation**
 - Compare the actual paid versus what was contracted to be paid
 - Make sure there is no double-counting (i.e., including capitation along with the notional cost of the capitated encounters from the claims system)
 - Account for accruals that need to occur compared to what was reported in the financial statements
 - Reclassification to non-benefit expenses (NBE). Certain capitated services may be for administrative services. MAOs may report these in claims on the financial statements; however, they need to be reclassified to NBE for the bids.
- **Mapping issues**
 - Members changing plan benefit packages
 - Members changing counties, including out-of-area members
 - Member IDs that are incorrect
 - Eligibility issues like claims paid in a given month but with no corresponding member record in the MMR
- **Part B Rx and OTC drugs.** These are Part C benefits, but MAOs may report them in prescription drug costs along with Part D. Note that any Part D OTC that is not a medical benefit should be removed from Part D claims and added to Part D NBE.
- **Incentives and risk sharing.** Incentives can sometimes be reported in NBE in sales and marketing. Check the bid instructions or consult with CMS for clarification on specific situations.
- **Provider issues.** Voided checks and/or advance payments can come into play with the timing of claims payments for the base year.
- **Related parties**
 - Check the bid instructions or consult with CMS for compliance with one of the methodologies for handling medical related-party arrangement(s).
 - Depending on the situation and method for demonstrating compliance, this can create a difference between the reporting of claims for these services in the bids versus the financial statements, which requires further reconciliation steps.
- **Coordination of benefits and reinsurance recoveries**
 - These items are usually outside of the claims system.
 - Consider the timing of payments, which can lead to a long lag relative to the incurred year.
 - Make sure they are being allocated to either the Part C or Part D correctly.
- **Rebates for Part B Rx and Part D**
 - Part B Rx rebates are relatively new, occurring in the last couple of years.
 - The contract determines how rebates are paid, as some may be used to offset pharmacy benefit manager (PBM) administrative costs.
 - Part D requires 100 percent pass-through in bids, so all rebates must be reported as a reduction in claims costs. In particular, any rebates retained by the PBM should be included as an NBE.
 - Three to six months of lag time between the incurred year and payment of rebates must be allowed, so there is a need to include an accrual for rebates incurred but not paid. Make sure the methodology is reasonable for estimating future payments.
- **Optional supplemental claims.** Voluntary or optional services are reflected in the bids separately. Take them out of the Worksheet 1 reconciliation.

- **Patient liability reduction due to other payer.** EGWP plans with a supplemental wrap product. They should be considered with paid claims when reconciling Part D.
- **Prior period adjustments.** Should be taken out of the Worksheet 1 reconciliation. Include claims reserves.
- **Non-medical vendor data.** This could be reported in claims and should be reclassified as NBE.
- **Non-risk Part D items**
 - MAOs are not at risk for the Coverage Gap Discount Program, Low-Income Cost Sharing Subsidies or federal reinsurance.
 - Take careful consideration of how these items are reported in the financial statements.

There are many issues surrounding the inventory of claims items, so it is prudent to take action early to make sure everything is accounted for and on the finance department’s radar.

Non-benefit Expenses

While the base period revenue is not directly used in the bids and base period claims costs are the primary driver of future claims costs in the bid, MAOs develop their projected NBEs using either a projection of base period NBE, a current budget for NBE or a combination of the two.

The NBE, or administrative costs, are typically a function of the finance department. As noted in CMS’s CY 2018 Bid Tools and Instructions⁸ for Part C on page 34, “[n]on-benefit expenses are all of the bid-specific administrative and other non-medical costs incurred in the operation of the MA bid.” Along with the importance of allocating costs among the different lines of business and between Parts C and D, the actuary needs to be aware of expenses for services that are reclassified either from claims costs to administrative costs or vice versa.

Medical benefits are defined in Chapter 4 of the *Medicare Managed Care Manual (MMCM)* as Medicare-covered, mandatory supplemental or optional supplemental benefits.⁹ Chapter 4 of the *MMCM*, along with Chapter 3 of the *Medicare Marketing Guidelines*,¹⁰ should be referenced for clarification of what can and cannot be included as non-benefit expenses.

CONCLUSION

Reconcile early and often! The reconciliation process can be intricate, but if done early it will not take the focus and priority away from the ultimate goal of completing the pricing and documenting the bid. Do not wait until May to perform this part of the analysis when finalizing the supporting documentation for the bid submission. It can lead to unexpected changes in pricing,

rushed judgment, incorrect conclusions and flat-out errors. Moreover, from the regulatory side, there can be repercussions from audits of the financial data that could lead to findings and/or observations that could have been avoided.

The best practice is to educate the varying departments to understand how the data are used and can affect the pricing of the MA bids. In addition, the departments should understand the regulatory risks and implications during an audit process. The earlier the education occurs, the more informed all parties will be, which should lead to a smoother reconciliation process. ■

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Time to Update Your Trend Process?

By Joan C. Barrett

Most health plans have sophisticated systems in place to project and monitor trends. Given the volatility of the health care business today, however, it may be time to perform an intense review of these models to make sure they are up to date and provide as much actionable information as possible. The question is, what kind of changes should we be anticipating and reviewing?

THE INITIAL RECOMMENDATION

In most health plans, the trend projection process starts with separate projections of each component of trend. For example, most health plans already have a sophisticated econometric model in place to project core utilization, the utilization associated with economic and clinical changes that apply across the board to all health plans and populations. Historically, this has been one of the most variable components of trend. Right now, the economy is stable, so these types of models are probably pretty accurate. Even so, a sudden turn in the economy may have a significant impact on the accuracy of these estimates.

Similarly, it may be time to pay more attention to the projection of core unit cost trends, the trends associated with price increases assuming no change in the mix of business. Historically, unit cost increases have been a major driver of overall trend. Luckily, this component has been relatively easy to predict for health plans that closely track contracting changes. We can, however, expect more volatility for this component with the rise of value-based reimbursement arrangements. Under these agreements, the cost of a specific service may be lower than for a comparable standard contract, since the provider will have the ability to earn a bonus. This underlying shift in contracting may skew historical patterns of unit costs. In addition, trend projections will have to reflect the fact that bonus payouts may be highly variable.

Most trend systems account for known changes to the book of business, like the introduction of a new program designed to identify gaps in care and to encourage members and providers to close these gaps. These types of programs have been around for several years. Most health plans have an extensive set of cost-saving programs available, and the specifics for each program

are well defined and documented. For example, suppose a health plan has a program for reminding patients to take a specific medication. In all likelihood, supporting documentation is available offline describing the clinical reason for the program, the criteria used to determine when a reminder is sent, the expected savings and a standard generic message to be delivered. In addition, the system records information on participants receiving the message and, of course, a claims history. This degree of specificity makes it relatively easy to measure the expected savings associated with the program.

More and more, however, health plans are relying on machine learning and artificial intelligence instead of a collection of defined programs. Under this construct, a computer program determines which members to contact and the messages to be sent. Since this is a relatively new development, it is unclear to what extent clinical and savings factors will be incorporated into the process. Also, unlike current programs, this is a dynamic process. The machine is continually “learning” how to improve the process, so the types of documentation we rely on now may or may not be available in the future. Clearly, new techniques will be needed to gauge the best way to incorporate these changes into our overall trend and cost projections.

Consumer behavior will also play an increasingly important role in projecting costs. Take price elasticity, for example. This is a simple economic principle that posits people will buy more when the price is low and buy less when the price is high. This may work at the grocery store, but health care is much more complex. Will a person really pay attention to the price of a procedure if he or she is close to reaching the out-of-pocket maximum? Also, what impact will price elasticity have on one’s health? Can a person really determine if a procedure or test will be cost effective in the long run? Our ability to answer these questions and so many others will be key to the accuracy of our projections going forward.

Finally, health plans participating in the exchange marketplace have already spent a lot of time and energy developing techniques for estimating the effect of the changing risk pool on costs. In the next few years, we can expect health plans to adapt the lessons from these efforts to more stable blocks of business.

FINAL NUMBERS

Once the initial recommendation has been made, there is usually a meeting with representatives from underwriting, sales and finance along with other stakeholders to determine the final numbers to be published. This can be a challenging conversation, especially if the discussion is about manual rates, where the conversation centers around finding the right balance between competitive rates and mitigating risk. A health plan may have a good idea of whether they are competitive now, but there is no



real window into the rates a competitor will be charging during the rating period. Mitigating risk also poses a problem. If the health plan adds too much margin, the company may lose too many members to support the infrastructure. The final decision is usually a consensus based on business needs, past profit and losses and confidence in the current rates.

With all the turbulence in the current marketplace, we can only expect that stakeholders will be demanding analytics that are less intuitive and more quantitative. Some of the questions we can expect include the following:

- If we add a 1 percent margin to our best estimate, what are the chances we will lose money anyway?
- If we cut rates by 2 percent in order to be competitive, how many new members do we need to break even?
- How comfortable are you really with your best estimate?
- What are the chances we will lose more than \$1 million?

To answer these questions, we really need to think of risk in two components: a pricing risk and a random variation risk. The

random variation risk is the risk associated with fluctuations if the overall pricing assumptions were exactly right. Historically, we have used fluctuations in high-cost claims as a proxy for the random variation risk. Although this has worked well so far, the issue is more complicated than that and we are going to need better quantitative techniques in order to have accurate data. Regression analysis and other predictive analytics will be useful in this endeavor, since the underlying logic automatically separates out variation into a “best estimate” and random variation. Suppose, for example, that an insurer uses a simple linear regression to determine that its best estimate of claims costs was \$300 per member per month (PMPM) with a standard deviation of \$15, roughly 5 percent. Under this scenario if the health plan uses \$300 to determine the final premium, then there is a 50-50 chance the health plan will lose money. If, however, the final premium is \$315, then there is only a 16 percent chance of losing money.

The pricing risk is the risk, or opportunity, that happens if the overall claims are missed either intentionally or unintentionally. Again, this is not a new concept. We have often used scenario testing as a proxy for this type of analysis and, again, it has worked well so far. The problem is, there is seldom a systematic way of assigning probabilities to each scenario. If a simple linear regression model is used, we can calculate the risk associated with each scenario using the variance associated with the slope estimator.

The calculations just described are pretty straightforward when a simple linear regression model is used. Of course, as the projection models get more complicated, then so do the associated risk calculations—a major challenge, but one that can be dealt with using techniques like bootstrapping and Monte Carlo techniques.

MONITORING EXPERIENCE

As noted earlier, monitoring experience is an integral part of pricing, reserving and similar functions. The process usually includes comparing actual experience to projected outcomes, where the actual experience is adjusted for large claims and other factors that have impacted results. If the results are significantly different than expected, then the key stakeholders must decide whether to revise estimates and/or business plans. As in the case of making the final decision, this is usually done based largely on intuition and experience.

Regardless of how intensive the underlying analytics are, the stakeholders are faced with a dilemma whenever there is a significant miss on a projection. If they wait for confirmation, they may suffer financial losses in the interim. If they move too soon, then there is a risk that later data will show that the original projection was right all along.

The good news is that if a risk analysis was done at the time of the original projection, that information can be used to assess the current situation. In the preceding example, the original best estimate was \$300 and the standard deviation was \$15. So, if the actual experience came in at, say, \$315, then we know that there is only a 16 percent chance that the actual result would be \$315 if the original projection was correct. That's a useful piece of information.

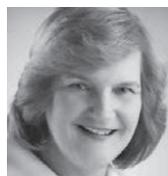
BEYOND TREND PROJECTIONS

A few health plans have already adopted some of these techniques. Surprisingly, they have mostly been used to measure the risk associated with financial guarantees on the self-insured business. Under these guarantees, a health plan agrees to pay a penalty if a financial measure, such as a group's trend, exceeds a specified threshold. The threshold is usually based on book trend with adjustments for group-specific factors like changes in benefit plans. These guarantees tend to be one-sided, so a health plan faces the possible loss of millions of dollars with little or

no financial upside. Clearly, in this situation extensive analysis of the risk is extremely important and subject to much scrutiny.

As more actuaries become aware of these techniques, we can expect them to be applied in other situations, such as value-based reimbursement agreements and market-level decisions for insured business.

Each of my examples were based on simple linear regression projections in order to make them easy to understand. Determining how to apply these principles for more complex analytics will require considerably more work. I look forward to hearing about the efforts of others in this regard. ■



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Genomic Testing: Cost-Saving or Cost-Inflating for Payers?

By Didier Serre and Joanne Buckle

Private payers are gradually adopting genomic testing to guide decision making in treatment pathways for selected disorders. Cancer mutations are a primary target for these tests, but can the early adoption of tailored, personalized approaches to care prove financially sound to payers? A deep dive into the return on investment (ROI) for these tests helps untangle some of the key risks.

Personalized medicine is gaining ground fast. At the very least, the idea that treatment pathways can be tailored to target the specific needs of patients based on predicted outcomes appeals to many. A corollary is the potential for reducing waste and other unnecessary procedures in the system. In breast cancer management, where genomic testing is more widely used to guide decisions regarding treatment, it is believed that the use of chemotherapy could decline in groups with selected genomic markers. But are these potential future savings actually worth the extra investments from a purely financial perspective? Although there is still some uncertainty regarding the future uptake of genomic testing and the levels of sophistication of new tests, we discuss in this article some relevant considerations that can support a greater appreciation of the risks and gains to payers involved in funding these tests now.

Many business areas rely on an ROI framework to help evaluate the financial implications of competing investment strategies. In health care particularly, ROI models have been employed to measure the impact of disease management programs or even determine the value of health risk assessments. Similarly, with genomic testing, an ROI analysis can provide a solid framework for determining whether payers should continue (or start) to allocate funding toward testing and for identifying key metrics.

GENOMIC TESTING OR GENETIC TESTING: WHAT'S THE DIFFERENCE?

The terms *genomic testing* and *genetic testing* are sometimes used interchangeably in the literature, yet the two tests have unique characteristics that differentiate them. The descriptions that follow should help clarify any misconceptions.

Genetic testing is more frequently quoted in the media, and it refers to a type of medical test that looks at the hereditary profiles of patients. It aims to determine the risk of developing genetic disorders in the future by identifying cells in humans carrying a particular mutation. These tests, which require DNA samples, are now commercialized in the United States and abroad and generally can be performed at home without any medical supervision. Results may prompt some individuals to alter their lifestyle decisions and, in some cases, operate or start treatment on a preventive basis.

Genomic testing helps to understand the activity and interactions of certain genes in the body once a gene mutation has occurred. It normally provides information on the likelihood of a tumor to spread and grow (aggressiveness), but it also sometimes indicates the likely benefit of a given intervention (responsiveness). Genomic testing can therefore offer guidance into the preferred course of treatment and is provided by health care professionals only.

ROI AND GENOMIC TESTING

We consider in this section three different approaches for calculating ROI for genomic testing, discussing advantages and drawbacks of each method.

Observational Study

Through an observational study, we can assess the financial impact to payers of genomic testing on health care resource use between comparable populations that have and have not undergone testing. This financial analysis would therefore look at the up-front cost of testing in relation to its impact on future utilization of services and disease recurrence. For instance:

- We can look at real-world data from two distinct population groups with similar risk profiles before and after a particular genomic test becomes available. Under this approach, we would use the year a specific test was introduced by payers as a marker and select populations as close to the marker as possible to reduce potential bias and externalities (i.e., new technologies uptake).
- We would follow patients for a predefined duration, yet the observation period for the two groups would differ. Ultimately, this approach requires looking at two distinct population cohorts.
- While in theory it is possible to control for health status in a similar way to other demographic factors, in practice risk adjustment mechanisms for health status are not perfect and are unlikely to capture all differences between the populations. Ultimately this may also add a level of complexity to the modeling.

Modeling “Theoretical” Approach

An alternate study design could focus on a single population group that fits the clinical or eligibility criteria for testing.

- Using a control population as baseline, we can develop a theoretical treatment group by applying assumptions regarding the expected impact of a given genomic test on health care resource utilization. Depending on the data available, this impact would vary by service categories.
- The use of peer-reviewed literature and other external sources may be necessary to supplement findings from real-world data and help provide additional input into the potential financial impact of testing on overall health care utilization and cost by disease area.
- This approach has the advantage of reducing the level of bias and potential confounding factors associated with using multiple populations, as the analysis is performed using a single cohort of patients over a single time period. However, this study design corresponds to a modeling exercise rather than being a true observational study.

Ultimately, both of the preceding approaches will compare two patient populations, with and without genomic testing.

Retrospective Analysis

A third option enables payers to blend the real-world evidence component of the observational study with the single population group focus of the theoretical approach. All participants in this analysis undergo genomic testing.

- Under a retrospective analysis, the initial treatment decisions for patients with a given condition are recorded using the conventional clinical approach. Then we perform genomic testing on the same population, and results are discussed between medical professionals and patients. The ultimate treatment decision is then documented (Figure 1).

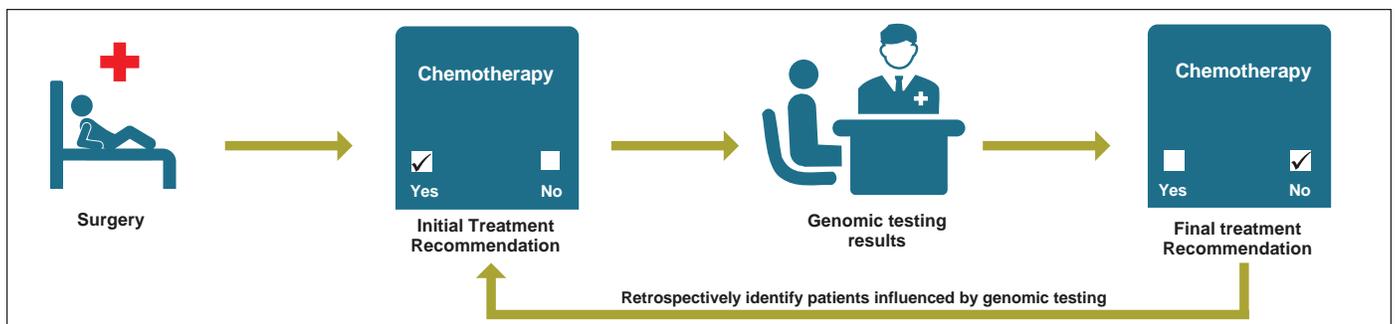
- Looking at both the initial and final treatment choices, we can retrospectively identify patients whose treatment pathways were influenced by genomic testing and similarly determine the proportion of patients for whom genomic testing only confirmed the initial treatment choice and thus was redundant.
- Benefits of this approach are that the analysis is conducted on a single cohort of patients using real-world data, does not require risk adjustment and can be performed quickly due to the fast turnaround time for these tests. However, it relies on clinicians to keep track of both the initial and ultimate treatment decisions, which can increase the administrative burden.

These methodological approaches can apply to various disorders and disease areas to help measure the impact of testing at a population level. Yet often a proof-of-concept at a smaller scale can demonstrate what can and cannot be achieved given available data and time resources.

CASE STUDY: GENOMIC TESTING FOR EARLY BREAST CANCER MANAGEMENT

A current hot area for genomic testing is early breast cancer management. Traditionally, clinical markers would be used only to inform the use of chemotherapy alongside hormonal therapy (e.g., tamoxifen) after surgery. Prior prognosis tools would rely on information such as patient age, tumor size and grade and the number of positive nodes to evaluate the clinical risk of developing cancer recurrence and/or dying within 10 years. The resulting clinical risk score, broken out into low-, intermediate- and high-risk groups, would then be used to support decision making about adjuvant chemotherapy. While patients at high clinical risk would normally be recommended chemotherapy and patients at low risk be advised not to have it, patients in the intermediate-risk group would remain unclear about its potential benefits. This uncertainty is driving the need for additional tools to guide treatment pathways.

Figure 1
Patient Journey Following Surgery When Genomic Testing is Available



Similar to its use in existing clinical groupings, genomic testing for early breast cancer management allocates individuals to one of three genomic risk categories—low, moderate and high—based on their risks of recurrence. A high score, for instance, represents a high risk of developing recurrence, with benefits from chemotherapy likely to outweigh potential adverse effects. Using the prior example of patients assessed with intermediate risk of cancer recurrence based only on clinical factors, genomic testing can thus help narrow the number of patients undergoing chemotherapy by sparing its use on patients at low genomic risk and requiring its use on patients at high genomic risk. It is therefore the combination of clinical and genomic markers that can help inform better decision making, as shown in Figure 2.

Ultimately, patient segmentation by genomic risk factor and treatment recommendation (hormonal therapy alone versus hormonal therapy and chemotherapy) will likely influence ROI, alongside any future movement in this distribution, which is due to population dynamics. Already, real-world experience on survival and treatment outcomes at five years following genomic testing is emerging in the literature for patients with early breast cancer. This information could form the basis for an ROI analysis for these gene-profiling tests.

The two scenarios in Table 1 assume that all patients in the high clinical risk category would be recommended ET + CT and, similarly, that all patients in the low clinical risk group would adhere to ET only. A possible application of genomic risk testing could help reduce some of the uncertainty associated with the use of chemotherapy in patients in the intermediate clinical

Table 1
Example of Decision Making Regarding Chemotherapy, With and Without Genomic Testing

Clinical Risk Assessment Only			
	Low Clinical Risk	Moderate Clinical Risk	High Clinical Risk
Low genomic risk	ET	Uncertain	ET + CT
Moderate genomic risk	ET	Uncertain	ET + CT
High genomic risk	ET	Uncertain	ET + CT

Clinical Risk and Genomic Risk Assessments			
	Low Clinical Risk	Moderate Clinical Risk	High Clinical Risk
Low genomic risk	ET	ET	ET + CT
Moderate genomic risk	ET	Uncertain	ET + CT
High genomic risk	ET	ET + CT	ET + CT

Abbreviations: ET, endocrine therapy; ET + CT, endocrine therapy and adjuvant chemotherapy

risk of cancer recurrence. However, we acknowledge that other external considerations are likely to influence the ultimate treatment recommendation and that a uniform rules-based approach may not be appropriate for all cancer cases.

KEY CONSIDERATIONS AND RISKS TO PAYERS

The example of early breast cancer frames the context for understanding some potential contributions of genomic testing in tailoring care to patients. In this section we discuss in greater length further key modeling considerations and financial risks to payers with testing, building on our current work in this area.

Projection Time Frame

Choosing the right time horizon for the ROI analysis is important as it will allow us to consider external changes that are likely to impact the future financial landscape of genomic testing. A longer time frame—for example, 10 to 15 years—could allow quantification of any forgone medical costs from a reduction in the use of a particular treatment or a decrease in disease recurrence. Moreover, it could also include the additional cost of care and surveillance for those populations where genomic testing failed to predict the right course of care.

A longer time frame may be more appropriate to payers or governmental organizations with longer time horizon and wider societal views of the benefits accrued, yet we note any improvements in treatment outcomes that are due to genomic testing may bear other financial consequences, for example, because of an increase in survival rates.

A shorter, one-year time frame by comparison could be more suitable to private payers, as it replicates the typical duration of most health insurance policies. This may also be more appropriate for medical conditions or disease likely to be diagnosed and treated within a one-year period. However, it will fail to capture any disease recurrence or persistence outside of the experience period. Given the potential impact on price of demographic shifts on incidence and, similarly, technology uptake, several ROI analyses can be conducted at several points in time—for instance at five, 10 or 15 years—to understand the financial implications from changes in key model inputs.

Population Segmentation

As mentioned earlier, genomic testing has the potential to guide decision making for particular therapies based on likelihood of treatment response. Therefore, risk stratifying your population of interest to home in on patient groups likely to benefit from testing can have a large impact on the overall level of return and can make the difference between an intervention being cost-saving or cost-inflating. The hypothetical example in Table 2 illustrates how selecting 100 patients at random for genomic testing versus carefully identifying 100 patients with given

Table 2
Example of Potential Savings Linked to Genomic Testing

Description	Scenario 1 Population at Random	Scenario 2 Population Segmentation
Cost of genomic test	\$3,000	\$3,000
Cost of treatment	\$15,000	\$15,000
Number of patients at risk of treatment nonresponsiveness	5 in 100	30 in 100
Potential treatment cost avoided due to genomic testing	$5 \cdot \$15,000 =$ \$75,000	$30 \cdot \$15,000 =$ \$450,000
Total cost of genomic testing (100 patients)	$100 \cdot \$3,000 =$ \$300,000	$100 \cdot \$3,000 =$ \$300,000
Overall financial outcome due to testing	$\$75,000 -$ $\$300,000 =$ (\$225,000)	$\$450,000 -$ $\$300,000 =$ \$150,000

clinical markers and other criteria may produce very different financial outcomes to payers.

Moreover, stratifying experience by medical service categories can help pinpoint the differences in utilization and costs between a control group (no genomic testing) and a treatment group (genomic testing), ultimately laying the foundation to derive ROI for a given intervention and support benchmarking over time.

Perspective Matters

Moving away from the more traditional considerations of ROI, too often it is assumed that the oncologist’s or medical professional’s view will prevail regarding the choice of treatment for patients. While the well-understood concept of information asymmetry between clinicians and patients may support this belief, multiple other factors can motivate patients to go against clinical guidance sometimes. Considerations related to patient age, degree of risk aversion to potential adverse events and availability of other, less invasive treatments can influence patients’ ultimate decisions for treatment. For the purposes of deriving ROI for genomic testing, choosing between the perspectives of the oncologist and that of the patient can yield very different ROI metrics, thus prompting payers to consider including both views in their analyses.

Uses of Genomic Testing

As a final consideration, we note the scope of genomic testing can be twofold. We mentioned previously that genomic testing for cancer could lead, for instance, to a decrease in the use of chemotherapy in populations initially identified as candidates for treatment. This reduction could benefit payers while sparing the unnecessary use of chemotherapy in patients likely to derive little to no benefit. Yet genomic testing can also identify patients initially spared a given therapy under the conventional approach to decision making, but later recommended treatment due to the presence of certain genomic markers. This scenario will of course increase the use of therapy, and costs associated with treating those patients, but likely will improve patient outcomes. Therefore, recognizing the conditions and scope under which genomic testing can be used will have a strong influence on the overall ROI to payers.

The process for evaluating financial implications of genomic testing includes several other uncertainties, notably the future cost and uptake of testing, levels of sophistication of new tests and future costs of standard and alternative treatments, including costs of adverse events. From a cost-benefit standpoint, additional considerations linked to poor handling of genomic samples, low sample size and the randomness and heterogeneity of the cancer mutations can reduce the ability to generate findings, while generating further expenses to payers. Scenario analysis can therefore provide the degree of sensitivity of ROI to changes in these assumptions. The future direction of personalized medicine will inevitably influence the outcome of ROI and ultimately determine whether new interventions such as genomic testing are cost-saving or cost-inflating for payers. ■



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Subgroups of the Health Section

By Marilyn McGaffin

Subgroups have existed as part of the Society of Actuaries (SOA) Health Section Council for at least a decade. The purpose of subgroups is to allow those who have a similar interest to come together and to delve deeper into that subject matter. The subgroup leaders are the first contacts for continuing education plans, which can include webcasts as well as the sessions for the spring Health Meeting, the Valuation Actuaries Symposium and the SOA Annual Meeting & Exhibit.

There are currently 13 subgroups of the Health Section Council:

- Behavioral Finance
- Dental
- Disability Income
- Employee Benefits
- Medicare
- Medicaid
- Supplemental Health
- Technology
- Value-Based Care
- Individual/Small Group
- Public Health
- Pharmacy
- Financial Reporting

A subgroup lead is responsible for maintaining expertise in subject matter, representing the subgroup in council meetings when needed, agreeing to a one-year minimum commitment and engaging in session planning. The subgroup lead needs to provide regular communication to its members, which can be through monthly networking calls and *Health Watch* articles, for example. The Society of Actuaries provides each subgroup with its own Listserv. Public Listservs are open for members, nonmembers, students and others to join at no cost. To join a subgroup, go to <https://www.soa.org/News-and-Publications/Listservs/list-public-listservs.aspx>. From there, one can select to join the Listserv.



Although continuing education is one of the main purposes of the subgroups, the groups offer research and strategic initiative opportunities too. Subgroups that generate and communicate research ideas or act as part of the research committee are highly valued. Some of the current research areas are Affordable Care Act costs, health care systems, risk assessments and experience studies.

The subgroup lead should also be aware of the council's ongoing Strategic Initiatives, especially any initiatives that may affect the subgroup. The lead is to communicate to the strategic planning committee ideas for focus and to relay the results of the initiatives to its members. Subgroup leads can also help identify external organizations for potential partnership. One notable ongoing development is the Public Health subgroup partnering with the Centers for Disease Control and Prevention.

If you are interested in becoming a subgroup lead, please contact me (marilyn.mcgaffin@cambiahealth.com) or Joe Wurzbarger (jwurzbarger@soa.org) at the SOA. ■



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Health Highlights From the 2017 SOA Annual Meeting & Exhibit

By Kwame Smart

Boston, a city famous for its history, sports and culture, can graciously add another item to its list of boast-worthy achievements. Beantown has now played host to one of the largest gatherings of actuaries and affiliates in North America—ever! Well over 2,000 attended the 2017 Society of Actuaries (SOA) Annual Meeting & Exhibit from October 15 to 18 at the Hynes Convention Center in downtown Boston. The Health Section sponsored 26 presentations and sessions (a record!) that covered a broad spectrum of health-related topics, and the feedback on the collective quality of these sessions was overwhelmingly positive. (And yes, the summerlike weather in the middle of October played a major part in this.)

DAY ONE

One of the highlights for the Health Section was its sponsorship of the Influence Training for Actuaries seminar at the very start of the meeting. An ambitious undertaking, this daylong seminar was led by the internationally sought-after leadership expert Andrew Sykes from Habits at Work. Traditional actuarial training has historically provided little support for actuaries to become master influencers. Kudos to Andrew for an engaging session, where attendees left with new skills on how to present more effectively and, most important, tell stories that will move people into action.

DAY TWO

The official meeting kicked off on Monday with a presidential address from Jeremy Brown. This was followed by a thought-provoking keynote speech from Kenneth Cukier, a senior editor at *The Economist* and the best-selling coauthor of *Big Data*.

As is customary during the opening session, outstanding volunteers were also recognized, and the Health Section was once again proudly represented. Congratulations to Health Section members David Dillon, Gregory Fann and Maureen Premdas for being among the 11 recipients of the SOA Outstanding Volunteer Award.



Outstanding Volunteer Award winners being formally recognized in opening general session
Photo by Hyon Smith.

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The Monday morning health sessions ranged in topics from becoming high-performance employers to the impact of medical expenses in retirement. The latter session was jointly sponsored by the Pension Section and included discussions on both U.S. and Canadian health care cost concerns for seniors. The afternoon sessions included applying behavioral economics theory to group benefits and a unique take on how potential changes to health care legislation under Trump could impact the industry.

The Monday night networking reception as always was popular among attendees. Coupling great food with many industry leaders, this was truly the perfect opportunity to make professional connections in a relaxed and inviting setting. And yes, the open bar was also a plus.

DAY THREE

After an evening of pleasant socializing, waking up Tuesday morning was a challenge. This was especially so since additional time was needed to get to the meeting, as attendees stayed in multiple hotels in the environs of the convention center—some unfortunately farther away than others. However, the much-anticipated Health Section breakfast at 7:30 a.m. on Tuesday provided the right incentive. Moderated jointly by outgoing Health Section council chair Brian Pauley and incoming chair Sarah Osborne, the breakfast provided the opportunity to network with section leaders and learn more about the exciting initiatives in education and research planned for the upcoming year. Dr. David Cutler from Harvard University was the featured speaker at the breakfast. His presentation on health care reform was perfectly timed. In addition to touching on past administrations' takes on health care, he provided insight not just on medical spending growth but also on the "unnecessary" medical spending made in the industry as well as options for reducing costs in both public and private settings.

Following the Health Section breakfast, the sponsored Tuesday morning sessions focused on the cost ineffectiveness of several high-cost medical treatments, early warning signs of insurance company insolvencies and tips on how to deal with them, and how managed care organizations can use predictive models to better understand and identify risks in their population.



David Cutler delivers presentation at the Health Section breakfast Tuesday morning.



A peaceful transition of leadership: from Jerry Brown to Mike Lombardi.
Photo by Hyon Smith.

The presidential leadership luncheon began with a passing of the gavel from Jeremy Brown to Mike Lombardi. Following the address by the presidents, the luncheon's keynote speaker, Scott Page, had the audience's attention. Scott is a professor at the University of Michigan, where he conducts research on how diversity improves performance and decision making. His

discussion on how we think in groups and the benefits of collective wisdom was much appreciated by all attendees.

Tuesday afternoon sessions covered topics related to misleading statistical techniques used by medical and pharmaceutical companies to sell the effectiveness of their products and how palliative care can improve the quality of life for patients with chronic illness, with a focus on developing a business case for covering these services.

DAY FOUR

Wednesday: the final day. Between 8:30 a.m. and 1:15 p.m., the Health Section sponsored seven sessions. These ranged from topics on managing the costs associated with end-of-life care to exploring recent developments in value-based contracting with pharmaceutical and device manufacturers. The consistently high quality of presentations made deciding which to attend very difficult.

To conclude, Boston—despite the accommodation inconveniences—was a perfect location for the 2017 Annual Meeting. The Health Section surely has a lot to be proud of coming out of the meeting, and congratulations to our new chair, Sarah, who was also the council's lead representative to the Annual Meeting, for her role in making this happen. Next up on our major meetings calendar is the Health Meeting, which is planned for June 25–27, 2018, in Austin, Texas. So please mark your calendar as we look to build on the successes achieved in 2017. ■



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