IMPROVING OUTCOMES WITH DATA: SAS HEALTH ANALYTICS EXECUTIVE FORUM 2016

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Introduction

On May 3-4, SAS hosted its Health Analytics Executive Forum for the 13th time. The annual event, held at SAS’s headquarters in North Carolina, brought together 350 analytics leaders and innovators from all facets of healthcare: insurance companies (i.e. payers), hospital networks and pharmacies (providers), pharmaceutical and life sciences companies (manufacturers), and the many small and not-so-small (yes, government) organizations that comprise the healthcare industry’s substrate.

Taken together, the wide range of attendees’ roles in healthcare and life sciences reflects the multifaceted challenge facing both individual companies and the industry as a whole: how can data and analytics be utilized more broadly and deeply across U.S. healthcare, and how can that increased utilization be turned into tangible benefits and cost savings for patients and practitioners of all kinds? The weighty nature of the industry’s overarching problem statement is just as pressing as it is aspirational: 17.5% of the U.S. GDP is spent on healthcare, an all-time high, and estimates of inefficiencies that can be tackled with data and analytics run in the hundreds of billions over the next 10 years.

Perhaps more than any industry, healthcare analytics conferences inspire a sense of purpose among data-evangelizing types like myself. When *transactional data* involves steps in disease treatment, and *personalization* refers to the individual’s experience in a clinical setting, it’s easy to get caught up in the many data-driven approaches to saving lives and improving outcomes. And this year’s SAS Health Analytics Executive Forum (SAS HAF) definitely included lots of ideas and solutions.

In my view, SAS HAF is the premier event in the field for health analytics leaders: in the span of just a day or so, leaders across the industry get a concise view of the current state of healthcare policy and reform, insights into the approaches and best practices in other areas of the industry, and technical innovations by SAS and others to help things along. Most importantly, and somewhat special to healthcare, attendees bring a camaraderie and willingness to share that sometimes belies the complexities of the industry. Networking conversations at SAS HAF, where a business analytics leader at an insurance company trades stories with the CIO from a hospital network while a clinical director from big pharma listens in, are just as vital as the technical breakthroughs being presented on big screens along the walls.

Personally, SAS HAF is significant in two ways. First, I’m an alumnus of healthcare analytics: in a prior role as director of Cardinal Health’s Analytics Center of Excellence, I was exposed to countless opportunities to leverage information and analytics much more fully throughout the industry. Second, in my role as Research Director at IIA, the discussions at SAS HAF greatly improves my understanding of the situations and needs of the many healthcare clients we support, which allows IIA to better serve them. The chance to glean incredible ideas and innovation from other analytics leaders and practitioners is the primary reason why I joined IIA.

Given the availability of high-quality video recordings of the SAS HAF sessions ([www.sas.com/virtual16](http://www.sas.com/virtual16)), which I recommend to any healthcare leader that wasn’t in attendance, I won’t give a comprehensive recap of each session. Instead I will share my take on the key themes that emerged from three sessions in particular, and what I think it means for the near-term future of data and analytics in healthcare.
Innovating for Better Outcomes

The SAS Health Analytics Executive Forum began with a panel discussion that included Aaron Bigman (Cigna), Phil Shelley, PhD (DataMetica), and Frank Rockhold, PhD (Duke University), and topics crossed the business of healthcare, lessons from other industries, wearable devices, privacy, and the evolving roles of healthcare providers in the new area of value-based care.

Three themes resonated with me during the panel session: the need to integrate analytics into the health organization’s business activities, the emphasis on personalization, and the increasing focus on privacy and tactical consequences for healthcare practitioners.

Integrating Analytics and the Business

As expressed by Bigman, when analytics is indistinguishable from the business, rather than an add-on, things work. Bigman recalled his experience at Capital One, where analytics is just the “practice” of the business rather than a distinct function. That framework might be idealistic for healthcare, but maybe not: at IIA, we’ve seen cases where select business teams within healthcare providers are driving the analytics more so than a separate function.

Bigman described how, at Cigna analytics folks are embedded in business teams, where they work directly with that team. Bigman feels that this helps the business become more data-driven than any other tactic. This business-minded theme also fits with SAS’s philosophy of driving healthcare analytics innovations from the perspective of health outcomes (delivery, quality, cost) first and foremost, rather than from the perspective of what technology can enable itself.

Personalization in Healthcare

During the panel, Dr. Shelley’s comments on personalization resonated strongly with me in ways that I hadn’t considered. As he put it, “If we can have genetic information about us, we should have our medical history and map them together.” Yes we should, and why don’t we? Dr. Shelley’s statement led me to imagine an advertisement for a mythical app that gives us access to our own medical histories, and the broad utility of that. “We should know exactly what’s happened to us, from birth to today,” he said.

So, fitting with the theme of SAS’s event, personalization in healthcare is enabled by data. Dr. Shelley correctly points out that the Affordable Care Act is forcing insurers to be more personalized, but more than that, there is a tremendous amount of effort needed on the data front to arm both providers and their patient with the specific information (both historical and current) about the patient to deliver recommendations and services in the best and most efficient ways.

One thing Dr. Shelley pointed out is that clinicians sometimes have had to deal with a subset of data and assume it’s the entire truth. But now we have the ability not to look only at subsets of data, and in fact from a technology standpoint, there’s no reason to accept subsets of data. What that requires of healthcare is a tremendous shift in mindset among all participants and patients: rather than limiting the view of the patient or of a population for whatever reason, comprehensive, data-complete views should be the expectation. The spirit of SAS’s event, and the enabling technologies on display, make it all seem possible.
Privacy and Healthcare Analytics

On the flipside, of course, is the issue of privacy. Having been directly exposed to various levels of customer privacy throughout my career in analytics, I was interested to hear healthcare analytics leaders astutely navigate the discussion, knowing the unlocked troves of value (to patients, shareholders, and taxpayers) in the data that is constrained by patient privacy. The session's moderator posed the question this way: **on the issue of privacy, how far is too far?**

Dr. Frank Rockhold (Duke) summarized the likely sentiment of most attendees, quoting Mr. Spock from Star Trek: “The needs of the many outweigh the needs of the few.” As Dr. Rockhold put it, we’ve made strides at getting access to some data, but we’re not doing as well at gaining knowledge because we’re constrained. For example, looking at the root cause of a claim can be extremely difficult when a provider simply isn’t allowed to know about the patient’s other health-related actions.

In practice, Cigna’s Bigman spoke about the heavy utilization of **tokenization & masking of data**, with very careful control of who has the tokens. This doesn’t solve the benefits of patient-specific insights from more extensive data, and too much de-identification of data makes the data useless, but it removes details from analytics work that still enables many insights. My sense from working in the industry is that big aspects of the inefficiencies in healthcare can be tackled even with today’s heavy emphasis on privacy.

Analytics Aren’t Optional Anymore

The first panel discussion of the SAS Health Analytics Executive Forum’s full day had a provocative title: “Are Advanced Analytics Still Optional?” During the session, I wondered how such a discussion would go at a meeting of healthcare leaders with less direct responsibilities for data and analytics. My sense is that, in 2016 unlike maybe five years earlier, there would be overwhelming agreement that data-driven insights and decisions are vital across the healthcare spectrum.

The healthcare spectrum was well represented in the panel discussion: payer, pharma, and provider organizations all were present. The panelists were Brian Day, EdD of Highmark, David Christie of Amgen, and Oscar Marroquin, MD of UPMC’s Health Services Division. As expected, the discussion covered a lot of ground, including the transition to value-based care and the diverse skillsets needed to solve healthcare’s data and analytics challenges.

**Value-Based Care As The Paradigm**

The cost of healthcare was a pervasive theme of the session. As Dr. Day (Highmark) put it starkly, “adults are three times more likely to declare bankruptcy due to cancer care” than for other reasons. Therefore, the transition to **value-based care** has been coming for a long time, and it’s a transition that affects every corner of healthcare. And those corners need to pay more attention to each other. For example, Dr. Day mentioned that, as a payer, Highmark wasn’t involved in provider analytics before. Now there’s a team within Highmark that’s explicitly trying to understand more what providers are facing.

The data- and technology needs motivated by value-based care are extensive. At Amgen, Christie described how they spend a lot of effort and time doing clinical trials, as well as time figuring out what the value of a particular drug will be. But Christie feels that the real
opportunity from is doing all of that more in real time. Doing so will require both deeper relationships among healthcare players of course (e.g. pharmaceutical researchers and ambulatory care providers), beyond the partnerships that exist now during clinical trials, but it also will require integrated, responsive platforms and systems to handle the rapid exchange of information relevant to both sides.

UPMC’s Dr. Marroquin shared the provider view. Before, providers didn’t have to worry about the cost of health care in general, when discussing treatments with patients. The notion of value is new and is now part of what they have to do on an everyday basis. Therefore, having advanced analytics capabilities is critical, because insights in isolation have very little meaning for patients & clinicians. "Integrating data can allow the transition from volume to value more successfully," Dr. Marroquin said. In fact, analytics and data can be used to to spark conversations between the doctor & patient.

Given the clear agreement that advanced analytics is no longer optional, the panel focused on the skills and expertise needed in healthcare analytics. Dr. Day began the discussion by pointing out that the skillsets continue to evolve. One caveat that he feels they don’t have that’s essential, in order to deliver information to providers, is to make the data comprehensive and ready for the data scientist skill set, which impacts their ability to recruit highly specialized advanced analytics workers. Overall, he is hiring people with very different backgrounds, but problem-solving capabilities are common across different hires.

Dr. Marroquin (UPMC) highlighted a program with Carnegie Mellon University established to educate their broad healthcare provider workforce on analytics in general. This is a theme I see across industries: the emphasis on up-skilling non-analytics staff in order to improve analytics understanding and utilization across an organization. Overall, the panel spoke to the need to have diverse skills in order to facilitate the transition to data-influenced decisions in various healthcare settings, whether clinical, insurance plan, or life sciences research.

### Leaders of Healthcare Analytics

The afternoon session at the SAS Health Analytics Executive Forum included parallel tracks (healthcare, life sciences) titled, “Health Analytics Insights from Industry Leaders.” The healthcare track I attended had great speakers from two insurance plans and two providers: Tony Nuntasiri (AmeriHealth Caritas), Bob Gladden (CareSource), Jim Reichert, MD, PhD (Catholic Health Initiatives) and Richard Snow, DO, MPH (OhioHealth). This session was probably my favorite of the event: the successes and challenges shared by the speakers at the regional level of healthcare often times seem more tangible, and that certainly was the case in this session. Three highlights from the speakers’ individual presentations included...
the focus on episode analytics, clinical quality, and the need to influence incentives to change healthcare.

**Episode Analytics and Storytelling**

Bob Gladden (CareSource) spoke extensively about episode analytics, which in many ways encapsulates the opportunity for coordinated healthcare delivery that can transform several levers (quality, cost, risk, outcomes). Payers, providers and accountable care organizations can leverage analytics against cross-provider “episodes” (i.e. of care to both decrease avoidable complications and reduce inefficiencies in healthcare). Similar to the discussion on value-based care, the “episode based payment” view of healthcare can be a paradigm-shifting approach that aims to simplify healthcare for workers and patients alike. And technology solutions by SAS and others are positioned to facilitate the episode approach to managing both the length of time that is covered and the range of providers and services that are included.

Gladden spoke about the Ohio (where CareSource primarily serves) State Innovation Model, with a 5-year episode goal that was achieved much faster thanks to breakthroughs at CareSource. Part of the power of taking an episode-based data approach is the ability to create a fuller story around the patient that data on just individual slices of their treatment can’t accomplish. For example, combining a knee injury’s initial diagnosis, presented options, actual treatment, prescriptions, and follow-up physical therapy as one knee-injury episode benefits all participants involved.

**Clinical Quality as Driver**

Dr. Jim Reichert (Catholic Health Initiatives) established a clinical analytics team with the explicit focus on how to get the whole hospital organization to be more data-driven. He defined the four goals under the umbrella of clinical quality as decreasing mortality, improving patient experience, improving patient safety, and purchasing for value rather than absolute cost alone. (Interestingly, Dr. Reichert needed to make clear distinctions between "business intelligence" (BI) and "clinical analytics" because the perception was that BI should have already delivered what analytics now promises to deliver.)

A key takeaway from Dr. Reichert’s interesting presentation is that relationship-building is essential between analytics leaders and their counterparts in specific areas of the organization. In Catholic Health’s case, getting the local markets to work together with the national market was a challenge, echoing a theme I’ve seen in other healthcare systems where individual hospitals can feel far more capable of improving their local conditions. What that means for a healthcare organization, like other industries, is that the key test for an analytical result should be its adoption: the success of its delivery to the business must be in a way that helps them understand what their goal is, what the baseline is, and whether they are making progress toward that goal.

**Influencing Incentives**

Dr. Richard Snow of OhioHealth, who came to the data-technology side of clinical effectiveness in a healthcare provider from a background in family medicine, spoke about how his small team is trying to influence the culture and incentives to improve the efficiencies and quality of care. One of the big questions his team considers early is, is the disease or behavior modifiable? In other words, are the various incentives such that the findings of an analytics project will actually be able to make a difference? This is a great consideration that’s relevant for pretty much any analytics leader or team.
Dr. Snow shared an example around diabetes, which costs $245 billion annually in the U.S. when including disability, missed workdays and premature death. Twenty percent of all healthcare dollars are spent treating people with diabetes, and the evidence is incontrovertible. His team developed incidence rates from insurance claims data that formed the basis of investments in education that allowed the hospital to offer services to its own employees (1,700 of whom have diabetes). The data and findings drove the incentives directly.

**Conclusion**

Overall, the 2016 SAS Health Analytics Executive Forum was a great opportunity to gain broad perspectives from healthcare and life sciences leaders on the progress underway across the healthcare spectrum. While it remains to be seen how the impact of that progress is seen and felt by patients, it was surely clear to all attendees that data and analytics are vital to improving every aspect of better outcomes in the industry. Healthcare analytics leaders and technology partners like SAS are allies in an increasingly pressing endeavor to reduce costs and increase clarity in a historically expensive and confusing service industry. After attending the Forum, I’m more optimistic than ever that the industry is on the right track, with a lot more opportunity ahead.

**More Information**

More information about the 2016 SAS Health Analytics Executive Forum can be found at the event’s website: [www.sas.com/haforum16](http://www.sas.com/haforum16)

High-quality video recordings are available at [www.sas.com/virtual16](http://www.sas.com/virtual16)
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Prior to joining IIA, Dan managed multiple analytics teams at Cardinal Health in Columbus, Ohio, where he built an analytics center of excellence to serve the company’s large Pharmaceutical Division. He has also held roles at JP Morgan Chase, Nationwide Insurance, and Investor Analytics. Since 2010, he has served as an Adjunct Professor at Ohio State University’s Fisher College of Business, where he teaches courses on data analysis and advises the university on analytics initiatives. Dan came to business analytics from science; he holds a Ph.D. in nuclear physics and authored several research publications.

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