ANALYTICS

HEAL
surgery 0
clinical test
medications
blood pressure
lab test 52%
vaccination 82%
BMI normal

MEDICAL CHECK

10-may-14

patient #08001 / John Adams

gender ♂
age 23
HR 95 bpm
120/60
ECHO D
CD PWR<500
Frq 2.0 MHz
1800 mm
AO 100%

DNA

SCOTTSDALE INSTITUTE 2018
CHIEF ANALYTICS/DATA OFFICERS

DIGITAL HEALTH DATA STRATEGY

October 25–26 | Chicago, IL

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Executive Summary

The Scottsdale Institute convened 13 healthcare analytics executives in Chicago for the 2018 SI Analytics Summit on October 25-26, 2018. Leaders gathered to share strategies, learnings, concerns and insights as we examined the Summit theme of "Digital Health Data Strategy," with a specific focus on consumer engagement in healthcare and understanding what types of analytics initiatives can influence consumer and patient behaviors. The group also focused on how aspects of digital health are enhancing their health systems' abilities to leverage analytics insight and improve health outcomes. Attendees represented large academic medical centers, multi-regional health systems, hospitals and clinics from across the nation.

Summit Participants

Lisa Brandt, Vice President, Population Health, IU Health Physicians

Lauren Bui, Vice President, Data Management & Analytics, CHRISTUS Health

Melvin Chung, Executive Director, Data & Analytics, John Muir Health

David Classen, MD, Chief Health Informatics Officer, Pascal Metrics, Inc. / University of Utah

Roopa Foulger, Vice President, Data Delivery, OSF HealthCare System

Mark Hohulin, Senior Vice President, Healthcare Analytics, OSF HealthCare System

John Lee, MD, Chief Medical Information Officer, Edward-Elmhurst Health

John Long, Vice President, Enterprise Analytics, UW Health

Brett MacLaren, Group Vice President, Client & Analytics Services, Interim Chief Data Officer, Providence St. Joseph Health

John Pyhtila, PhD, Chief Data & Analytics Officer, Partners HealthCare System, Inc.

Gregory Snow, Director Enterprise Information Management, Spectrum Health

Lara Terry, MD, Medical Director, Clinical Analytics, Population Health, Partners HealthCare System, Inc.

Yohan Vetteth, Chief Analytics Officer, Stanford Health Care

Convener: Scottsdale Institute

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Gordon Rohweder
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Sponsor: Impact Advisors

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Ben Wolfe
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Moderators: Liam Bouchier, Tim Zoph, Impact Advisors

Format and Introductions

Participants were guided through an informal discussion with a series of prompt questions and topics designed to encourage discussion among the attendees, and individuals were asked to weigh in on their views regarding a digital health data strategy and consumer engagement in healthcare. Day one of the Summit focused on the current state of consumer engagement analytics, with day two taking a deep dive into digital health, data governance and consumer engagement, as well as thoughts and recommendations for the future of analytics.

Population Health, Digital Health & Consumer Engagement: Blurred Boundaries

The Summit opened with a review of the topics presented in the Scottsdale Institute's Population Health Summit, which immediately preceded the Analytics Summit and shared some overlap with common themes and attendees. Participants noted the commonalities among the subject matter—Population Health is increasingly becoming dependent on robust analytics, and digital health and patient engagement are key influencers in both realms. Indeed, these common themes would resurface throughout the two days of the Analytics Summit, and the "blurred boundaries" would be recognized as one of the primary strategic considerations of Summit participants.

Breakthrough Analytics—Where Are We Today?

While contemplating the implications of the conceptual merging of population health and digital health-related behavioral analytics underpinned by data strategy, the participants described where their own organizations were currently positioned in terms of successes and challenges. Many expressed the need for robust and timely data to support initiatives, "at risk" population health contracts as an example, yet the realities of providing accurate and timely data often seemed to remain elusive. A key success criteria in the initial planning of any analytics-based initiative was noted to be expectations management with executive leadership, ensuring awareness that having access to the right information and data to begin with differs greatly from having to acquire data from scratch to support a project.

Lara Terry, MD, Medical Director, Clinical Analytics, Population Health, Partners HealthCare framed this nicely, saying: "We have approximately 700,000 lives under risk-based contracts, and we're consequently doing a lot of our analytics in order to support the patients for whom we provide care."

Lisa Brandt, Vice President, Population Health, IU Health Physicians, underscored this thought: "Our concern is how we can use data more effectively, with focus especially on our population health goals and initiatives." John Lee, MD, Chief Medical Information Officer, Edward-Elmhurst Health, agreed. "We now have the data, the question is what do we do with it? We'd like to change the paradigm of how we provide care."

> "Our concern is how we can use data more effectively, with focus especially on our population health goals and initiatives."
>
> – **Lisa Brandt,** VP, Population Health, IU Health Physicians

"We're researching if pop health has an ROI," asserted David Classen, MD, Chief Health Informatics Officer, Pascal Metrics, who argued that "research is currently showing that decreased inpatient costs are offset by increasing ambulatory costs. In a comprehensive pop health management program we may be just 'squeezing the balloon' without there being overall cost savings."

Conversation then shifted to a focus on operationalizing data for analytics—getting data to support analytics initiatives as well as clinical care and decisions at the front lines, where it can be effective in changing health outcomes. Care managers have been a big focus for Providence St. Joseph Health, as Brett MacLaren, Group Vice President, Client & Analytics Services, Interim Chief Data Officer, Providence St. Joseph Health described: "We've built a patient-centric versus encounter-centric platform (Community Pathways to Health / 360c) to help with risk profiling, prediction and feeding data to care managers for our most poor and underserved patients. We're now broadening that out to additional patient populations, as well as integrating patient data with purchased data focused on social determinants of care."

Lara Terry, MD argued that merely identifying the highest-risk patients is not enough. "Currently, risk stratification is often focused on the 'top band'—but we also need to focus on 'rising risk'— those in the middle of the triangle. We need to proactively prevent patients from becoming 'top band' individuals by identifying and, when possible, intervening earlier." She suggested integration of additional data might help achieve that aim. "Some of the unstructured data, such as social determinants of health metrics and measures of physical and cognitive function, may be valuable in identifying those at increasing risk."

Gregory Snow, Director Enterprise Information Management, Spectrum Health agreed with the need to integrate multiple data sources as a way to improve data quality. "We need to tie together multiple analytics strategies across our organization. For example we only have 30-percent overlap between our hospital system and our payer system. We need to work as an integrated system and less as a holding company as was done historically."

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>
> – **David Classen, MD**, Chief Health Informatics Officer, Pascal Metrics, Inc./ University of Utah

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>
> – **John Lee, MD**, CMIO, Edward-Elmhurst Health

Lauren Bui, Vice President, Data Management & Analytics, CHRISTUS Health, who brought analytics experience from several industries prior to working in healthcare, has already integrated the multiple EHRs in use at CHRISTUS, viewing this as a key step in their analytics development. "We've used a Hadoop data lake to integrate across three EMRs—it's our first phase in digitization. There are so many potential opportunities!"

The University of Wisconsin's John Long, Vice President, Enterprise Analytics, added, "Our big issue now is making our data operational—that is key for our success. We're constantly also adding new data. A central piece for us is integrating person-level data from multiple sources, including social/consumer data."

John Lee, MD agreed, yet felt the quest for additional data must be tempered. He cautioned, "We need more actionable data—we need to figure out how to democratize the knowledge in our data lakes, so that it provides actionable insights. Right now, the problem is we are swimming in a sea of data, but we can't use it well. We need to distill it down to one or two pieces of information that can change people's behavior."

Challenging the group, Yohan Vetteth, Chief Analytics Officer, Stanford Health Care, argued we need to widen our focus: "We are looking at it the wrong way when we are saying, 'What clinical data do I want in my EMR?' We should be looking at data from all the other devices our patients use, including our phones, that patients are willing to share. Today my phone data—location,

> "We are looking at it the wrong way when we are saying, 'What clinical data do I want in my EMR?' We should be looking at data from all the other devices our patients use, including our phones, that patients are willing to share. Today my phone data—location, sounds, light, engagement—could probably help predict clinical interventions as well as, if not better than, my EMR record."
>
> – **Yohan Vetteth**, Chief Analytics Officer, Stanford Health Care

sounds, light, engagement—could probably help predict clinical interventions as well as, if not better than, my EMR record." The Stanford Apple Watch heart study is an early example of this kind of thinking.

Consumer Engagement: Creating a "Frictionless" Experience

The engagement of healthcare consumers, and how to influence self-care, became a central theme for the second day of the Summit. The discussion turned to the realization that healthcare was "behind" but being influenced by retail vendors (such as Amazon, Apple and Google) in this realm, and the recognition that patient convenience—creating a "frictionless" experience—may be a critically important first area of focus to encourage participation.

John Lee, MD framed the issue in context. "We've traditionally viewed medicine as paternalistic— the patient doesn't do anything without the physician—but if we engage the patient, they become a member of the care team. They are most incentivized to get the care right (and they'll work at that goal for free). There's lots of potential, but we're just at an embryonic state."

"It is the notion of 'frictionless care,'" remarked Lara Terry, MD. "Making appointments for haircuts is frictionless—you can pick your haircutter as well as specific time slots. Healthcare needs to be more like this—the patient is the consumer, and it's about the experience you're providing for them."

John Long agreed: "Engaging consumers—how do you make it easy—frictionless? Is there evidence that it changes outcomes or economics? Literature shows us that patients engaged in care have better outcomes, and those pieces are part of what digital health can enable. It's getting data back to action—but that doesn't necessarily mean to the point of care with a provider—patients can change their behavior without a provider."

Roopa Foulger, Vice President, Data Delivery, OSF HealthCare System, said, "Each facility needs to personalize this—it's market centric, and needs to be impactful for each community." David Classen, MD advanced the concept: "The health system has to be responsive to me as a consumer—it's not my brand loyalty to them." Yohan Vetteth agreed engagement is contextual: "It's different with ACO and FFS. Our fee-for-service strategy is to make everything as convenient as possible. Yet the payor space is not as scared to market to consumers as we are—we need to understand what they do so we can learn from them."

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>
> – **Melvin Chung**, Executive Director, Data & Analytics, John Muir Health

The group consensus was that customer expectations are driving many of the strategies around digital health. Several participants believe retail and technology companies are setting high expectations in terms of consumer-facing services and customer support that many health systems struggle to meet.

"We are focused on being digitally driven," said Yohan Vetteth. "We are driving patient engagement and education through our MyHealth App and in patient care with Open Notes, virtual clinics and telehealth."

Melvin Chung, Executive Director, Data & Analytics, John Muir Health noted John Muir is focusing on consumer expectations of 'digital.' "We've seen some of our younger patients going elsewhere for care. We're now focusing on patient experience to help offset that, for example, by developing specific services for women aged 20 to 40 who are digitally inclined."

Others are seeking ways to mirror some of the strategies used by retail, such as looking at social data and artificial intelligence (AI). For example, Gregory Snow shared that Spectrum is working with Epsilon, a social data provider. "We're using Epsilon to help segment our consumers, to hopefully develop more loyalty relationships with our health system." John Pyhtila, PhD, Chief Data & Analytics Officer, Partners HealthCare System, Inc., related how Partners is looking to leverage AI. "How do we integrate digital at every step? How can we leverage AI, for example, to improve care? AI isn't replacing the physician—it's augmenting the physician and making him or her better."

"Digital Health should enable a premium experience—it's about the experience and not about the technology," declared Yohan Vetteth.

Digital Competition: Non-Healthcare Disruptors

As the conversation shifted to the retail and tech industries—and how they've outpaced healthcare—participants noted the increase in healthcare development and participation from

> "I'm excited about Google. They're going to shake up the industry! We need large data platforms such as Google to drive interoperability across the value chain."
>
> – **Lauren Bui**, VP, Data Management & Analytics, CHRISTUS Health

> **"**Are our brands a liability for the future? People don't want to engage with an insurance company—people don't trust that—they're more likely to trust Google.**"**
>
> – **Gregory Snow**, Director Enterprise Information Management, Spectrum Health

some of the larger technology and retail innovators such as Google, Apple and Amazon. Such disruptors from outside healthcare, while recognized as potential threats to traditional health systems, are also viewed as potentially positive in the new talent and thinking they bring to the table. Several participants noted how key positions at their organizations are now being filled by executives from those outsiders.

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"Are our brands a liability for the future?" asked Gregory Snow. "People don't want to engage with an insurance company—people don't trust that—they're more likely to trust Google."

Monetization of healthcare data was also a big concern, particularly with respect to use by external entities. Some felt partnering with non-healthcare companies might offer a way for health systems to help manage that data and risk, as well as benefiting from improved use of health data. Yet others viewed technology firms' entry into healthcare could mean hospitals and health systems will need to adapt. Brett MacLaren pondered the possibilities: "Our biggest risk may be Amazon or Apple solving interoperability—we may then have to adopt their standard."

Staffing was also recognized as a continuing challenge. Brett MacLaren cautioned: "We also have a 'people and skills' deficit. We need more expertise from outside of healthcare with experience as software engineers and software developers." John

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>
> – **Brett MacLaren**, GVP, Client & Analytics Services, Interim CDO, Providence St. Joseph Health

Pyhtila agreed: "We took a similar position, and hired two people from outside of healthcare with consumer-facing retail experience. We also focused on hiring people that fit our culture. The right mix of expertise in healthcare and expertise in data is needed. You want the challenge and disruption, but you want it in a respectful way."

Digital Health: Influencing Consumer Behavior

Disruptors notwithstanding, participants shifted to discussing how digital health concepts might be able to influence consumer behavior and ultimately outcomes of care. The group felt that convenience and ease of use were prerequisites, both for physicians as well as patients. Understanding the needs of each customer group, and meeting those needs in a customized fashion, would be paramount in understanding the value proposition.

"Personalization is key," Gregory Snow asserted. "We can change the dynamics of care by offering personalized services for an individual customer. It's like what's happening for me and my package delivery from Amazon. And the consumer can simply opt-in with their app if this appeals to them."

"Culture as well as content are the key things," said John Lee, MD. "Many patients want data, such as test results, faster, and others want results to be filtered by a physician. This is a culture issue—some want it instantly, others want it interpreted by their PCP first. If we don't solve the culture issue, we won't be able to solve healthcare problems."

"We've looked at high utilizers," said Lauren Bui. "For example, high-cost hypertension patients—we're looking at trying to help them with strategies to improve care. There are also use cases for diversity inclusion, such as developing a dashboard to overcome socio-economic barriers."

Yet there are challenges with simply presenting the data, even if patients might feel it's of benefit. Patients often incorrectly interpret data, and that becomes a concern with the potential velocity of data available to patients. John Lee, MD, explained, "One of the challenges is interpretation of data by consumers. For example with an Apple Watch we can now find patients with AFib [atrial fibrillation]—but what if it's 'Insignificant AFib?' How we provide data to consumers and their interaction and interpretation of that data is important."

Despite some of these challenges, the consensus was that a well-developed digital health data strategy aimed at influencing consumer behavior offers a significant opportunity, and most were developing specific organizational strategies around such initiatives.

"There's a difference between marketing to a group of consumers, rather than to individual patients. With individuals, there are more concerns on ethics and there's a 'creepiness' factor—patients asking, 'How do you know that about me?' Companies have been questioned in cases where customers have said, 'You shouldn't have done that with my data.' Even if we have the rights to do this, should we?"

– **John Pyhtila, PhD**, Chief Data & Analytics Officer, Partners HealthCare System, Inc.

"We need to think about Digital Health as an end-to-end supply chain, delivering patient value and lower cost. Providers need to accept and embrace it," explained Lauren Bui.

Marketing to Consumers: The "Creepiness" Factor

While most agreed leveraging digital health to influence consumer behavior was positive, they were less comfortable using technology as a marketing tool. Healthcare is different from buying books on Amazon—and sending patients "suggestions" based on their health history raises privacy concerns.

John Pyhtila elaborated: "There's a difference between marketing to a group of consumers, rather than to individual patients. With individuals, there are more concerns on ethics and there's a 'creepiness' factor—patients asking, 'How do you know that about me?' Companies have been questioned in cases where customers have said, 'You shouldn't have done that with my data.' Even if we have the rights to do this, should we?"

Added John Long: "Creepiness doesn't exist in aggregate cases—it's the personal factor that's the issue. And—the legal implications are not yet settled." Lauren Bui underscored the point: "We stopped at the personal level—and legal weighed in as well. Personal and intimate care details cross that line. We made a strategic decision to focus on quality and consumer retention. Once we've achieved that, then we can focus on marketing for additional services—but we need to establish a relationship with a patient first."

Brett MacLaren suggested value is the key. "We let Google in because it provides value. We need to provide the same perceived value to our customers. We have to think like marketers— we have to convince patients we are doing this because we care about you." John Lee, MD agreed value may be the key. "Netflix draws us in because there is an immediate benefit to the consumer. I get more utility than the negative of any perceived creepiness factor," he says.

John Pyhtila also cited convenience as a critical factor. "Value comes from making it easy to use. We need to make the healthcare journey easy, and extend care beyond the four walls of our hospitals."

And engagement is not limited to the patient—engaging families was also important, explained John Long. "We need to help engage patients and families as partners in improving their health, wherever they are. Everyone has their individual values and preferences, and we have to remain consistent with those individuals' desires."

Data Governance & Organizational Ownership of Digital Health as a Strategy

The conversation moved to the topic of governance—especially who might design digital health data strategies and have the corporate influence to nurture it.

"At Partners, digital health is co-owned by our chief clinical officer and our chief academic officer," said John Pyhtila. "This is because innovation often occurs in research, and we needed a methodology to bring it over to operations."

David Classen, MD, added, "We need to take research and get it back to the front line of care, to make the right decision to benefit patients. We need to embed this back into the workflow."

Marketing also has a big role to play. At IU Health Physicians, explained Lisa Brandt, "IT and marketing co-own it." At CHRISTUS, Lauren Bui said, "IT, marketing, our clinical health outcomes medical leader and CMIO are also involved."

Other health systems position digital health within their strategy office. "Digital is owned by our chief strategy and chief transformation officers at John Muir," said Melvin Chung. At OSF, "Our chief strategy officer has developed innovation (and digital) as one of OSF's organizational goals," said Mark Hohulin, Senior Vice President, Healthcare Analytics, OSF HealthCare System.

John Pyhtila asserted strategy is fundamental. "You have to specifically understand what you are trying to accomplish—then figure out what you need. Digital health is a tool in the toolbelt—it's not 'the solution.' You need a business strategy first. Then you can decide on the best tool to help with that strategy." Lauren Bui agreed. "Don't think about the tool—figure out your strategy. The best tool & technology will not solve the problem—perpetuation of noise does not create value."

Spectrum's Gregory Snow said marketing or strategy are potential directions for digital health. "It's really owned by IT, with a cross-functional coordinating committee, but with a new CEO driving digital that's likely to change in the coming months. And we're also missing a chief analytics officer—this would help us think more holistically. That role would likely report to the CEO or chief strategy officer."

For others like Providence St. Joseph, digital was elevated to the level of the CEO and identified as an organizational effort, owned by all. Brett MacLaren explained: "While we have a chief digital officer, our digital strategy is owned by everyone and is a core part of our Health 2.0 journey—our CDO does own data governance and enterprise analytics, but then we have federated analytics teams and pop-health teams and all use our infrastructure. To solve healthcare, groups can't do their own things in silos. We need a comprehensive data model and we need to have integrated analytics." UW Health also fell into this camp: "Our CEO and direct reports are the accountable leaders—yet everyone owns it," said John Long.

And while ownership was a debatable issue, it seemed governance continues to challenge most organizations. Governance structures often struggle to make decisions. Separating portfolio governance from data governance, and organizational understanding of what data governance was (as well as the need) were lingering issues, along with operational ownership and accountability for data.

John Pyhtila described Partners' situation: "We have a wealth of governance, and yet we still sometimes struggle to make clear decisions—there's a bit of a culture shift that's needed that we're working to address." John Lee, MD echoed that experience. "We've had decades of data governance chaos—we need to get all our people going in the same direction."

"We've tried to separate portfolio governance from data governance," noted John Long. "Portfolio governance for us is a stakeholder-led process for deciding what projects we'll do, and what projects we won't do, in a period of time. Data governance includes standards and processes for definitions, data quality and data architecture. That is separate from the execution of projects."

"We manage it in the same way," Gregory Snow added. "But there's a problem treating data as a project: it means that it ends, and the lifecycle of data doesn't end. We need a better way to manage this." Brett MacLaren agreed. "The executive director of product development is on my team—analytics products, and 'product products'—solutions that have a lifecycle. Data governance is distinct from that."

"The portfolio is a combination of projects and products—and products need investment," declared John Long. "We are early in the process of managing IS-related work as a combination of projects and products."

Accountability outside of IT for analytics was also a discussion topic. Operational owners should have clear responsibilities for defining success, developing metrics to assess it and then being held accountable for achieving a tangible ROI for digital initiatives.

"We have to educate leaders on what data governance is (owners, stewards, custodians), explain their responsibilities, and then hold them accountable to those responsibilities," asserted Melvin Chung.

"Healthcare has so many layers of governance," said Roopa Foulger. "They need boundaries. People also need 'skin in the game,' and need to be held accountable. There needs to be a sense of urgency from business partners and they need to be held accountable." Brett MacLaren agreed. "We need a way to hold accountability to KPIs and ROIs. We're not doing this well today, but we need to."

"ROI doesn't work well for data," countered Gregory Snow. "If we incur costs to bring data into the data lake for the first idea, then there's no ROI and we'll decide not to do it. But then we lose the opportunity for future value, and the return for future projects that might leverage that data."

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Data sharing—especially data that leaves a health system—is a challenge.

"Data sharing remains complex," said John Long. "There are many nuances legally to providing care managers full access. Our intention is better partnership, but in a shared warehouse we must carefully craft rules of respect in terms of what can be shared and what cannot be shared."

Lauren Bui agreed. "Data going out of the system is a challenge. We have a data-release policy that requires authorization from the data trustee and then a security review."

The complexity and scope of data was viewed as a strain to the system, given the number and diversity of data sources that groups were integrating. A way around this may be to limit the data definitions in use.

"Data governance is a journey," suggested Yohan Vetteth, "but an important one for leadership to take on as soon as possible. We had a lot of definitions for a lot of different key metrics being used across the organization. You have to pick the top 25 metrics that drive decisions and figure out the exact business and technical definitions for those—the 'non-GMO' definitions—to be used across the organization to drive decisions."

Gregory Snow agreed. "There's too much data now to have an unfocused approach. Data governance has traditionally gotten bogged down in the detail. We need to focus on key master data definitions—concentrating on these 'top 25.'"

"Definitions should be accompanied by use cases--if people understand how the data is used they can better understand the definition," Melvin Chung added.

Lauren Bui said use cases could help with adoption and justification for data governance. "The airlines needed to establish there was a problem prior to leadership wanting to invest in governance. Developing a use case using datasets with sizable impact helped justify that expense for governance."

Mark Hohulin summarized the issue nicely. "Digital Health? It may be organizationally or market-driven with different needs—yet it's strategy, governance, portfolio management, operations and workflow—all of it—and it's using all aspects to make a difference in helping clinicians improve patient outcomes."

"We have predictive models, and we are pushing data back into our EHR—but the adoption workflow issues are huge. No matter how good the model is, if clinicians aren't guided in the right way, it simply becomes 'noise' if they can't act on it."

– **Mark Hohulin**, SVP, Healthcare Analytics, OSF HealthCare System

Operationalizing Data: "Now that we have it, what can we do with it?"

The group segued to a discussion around the challenges of change management, operationalization of data and getting actionable data to decisions makers at the point of care to effectively help improve and manage outcomes. While data volume and quality has improved, participants still believe solving data operationalization remains one of their most significant hurdles.

As Mark Hohulin described it, "We have predictive models, and we are pushing data back into our EHR—but the adoption workflow issues are huge. No matter how good the model is, if clinicians aren't guided in the right way, it simply becomes 'noise' if they can't act on it."

To illustrate the importance of workflow, he offered an example: "We sent data back to trigger a BPA [best practice alert], and it provided-better 'action-ability,' but physicians needed to be re-educated about the updated BPA in the workflow to make it effective so that they didn't ignore or just 'click through it.'"

"BPAs need to be actionable," agreed John Long. "The temptation is to think we need more data. But are you effectively using what you already have? Sustained use and a data-driven culture need to come prior to the acquisition of more data. It's getting to actionable information that is important."

"Change management is the hardest part of operationalizing data—getting data to the point of care and having the trust to act on it," Brett MacLaren said.

Data structure and data models were sometimes also a barrier to operationalization, often relying perhaps too heavily on EHR vendors. "It's not just putting in a digital solution, and it's not just exchanging data," said Roopa Foulger. "Amazon and Google built a strong foundation that was able to send the right information down to the consumer. It's not simply about the 'system of record'—more than that, it's creating a 'system of insights.'"

Asked Gregory Snow: "Will we build our own predictive model, or use our vendor's?" John Long augmented this concern. "When a vendor commoditizes the model, it loses some fidelity." John Lee, MD added, "Vendor-normalized models are not as accurate."

Providence St. Joseph believes a person-centric solution (rather than an EHR-centric solution) would be most effective, noted Brett MacLaren. "We're trying to create a comprehensive data model that's not siloed. We want a person-centric solution, regardless of the product we're developing. Our CEO feels data is our most important asset."

"The temptation is to think we need more data. But are you effectively using what you already have? Sustained use and a data-driven culture need to come prior to the acquisition of more data. It's getting to actionable information that is important."

– **John Long**, VP, Enterprise Analytics, UW Health

Lauren Bui predicted the solution will come from outside. "Airlines differentiate based on customer experience, I see this as where healthcare is going."

"We're at a cusp—a digital revolution," reflected Brett MacLaren. "The paradigm is shifting. How do we challenge ourselves to not only rationalize the existing paradigm, but how do we transform ourselves before the consumer demands it? How do we get ahead, rather than being reactive and forced to change due to consumer demand? How can we continue to evolve? It's going to be interesting."

Conclusion

The 2018 SI Analytics Summit participants were positive and excited about where their organizations are moving in 2018 and 2019. Participants who also attended last year's Analytics Summit noted positive progress and more optimism in the conversation. Consumer-behavior analytics and digital-health strategies are evolving and in many ways converging. While the industry focus on population health may be a setting sun, the new emphasis is on the individual consumer and how consumers interact with the healthcare system to receive the most frictionless, high-quality services and best care possible.

Many challenges remain on our journey to digital health, but analytics executives are highly optimistic and look forward to leveraging the innovative thinking and experience of industry disrupters to build that new world.

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The **Scottsdale Institute (SI)** is a not-for-profit membership organization of prominent healthcare systems whose goal is to support our members as they strive to achieve clinical integration and transformation through information technology (IT). SI facilitates knowledge sharing by providing intimate and informal forums that embrace SI's "Three Pillars:"

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> **>** Networking.

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