



The New Standard for Analytics Value

September 9, 2020

EXECUTIVE SUMMARY

The Scottsdale Institute convened 31 health-system analytics executives for a virtual summit on September 9, 2020 to discuss the impact of the COVID-19 pandemic on analytics at leading health systems. Discussion topics included how analytics has moved to center stage, the challenges of remote work, the rise of self-service analytics, the dissolving barrier between IT and analytics and the increasing importance of collaboration and partnerships.

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Enterprise Analytics: COVID Impact and Beyond

Analytics play an increasingly important role in helping hospitals and health systems improve clinically, thrive financially and operate smoothly. But as facilities became ground zero in 2020 for a worldwide pandemic, analytics became crucial in helping organizations serve their communities. When uncertainty reigned, analytics executives helped make things more predictable for health systems.

Analytics leaders are facing their own uncertainties as technologies evolve and circumstances change. Forward-thinkers are already planning for the realities they may face as COVID-19 remains front and center while they continue to improve the services provided to their organizations.

HOW DID COVID CHANGE HEALTHCARE ANALYTICS?

Since February 2020, analytics professionals attending the attending the Virtual Analytics Summit have concentrated on helping their organizations prepare for and manage their pandemic response. Analytics teams focused almost exclusively on COVID, working long hours to prepare and share mission-critical metrics using tools such as data dashboards and predictive models. Analytics executives reported that their professional visibility and importance dramatically increased as a result of the COVID-19 pandemic; the increased appreciation was hard won and well deserved.

Mark Hohulin, senior VP of healthcare analytics at OSF HealthCare System, Peoria, Ill., shared how his team helped OSF handle the crisis. Like every U. S. health system, COVID stretched OSF resources at several of their larger facilities. The analytics team's ability to analyze, display and interpret data significantly enabled his organization to navigate the clinical and financial uncertainty that surrounded all of healthcare in spring 2020.

OSF analysts developed surveillance dashboards that provided OSF executives at-a-glance, real-time views of confirmed COVID-19 cases, facility capacity, supply availability and impact across the organization. They created a rolling summary of daily COVID activity and a dashboard to track community transmission. To measure the pandemic's business impact, the team developed a daily activity summary tool to monitor and observe utilization trends across the continuum of care—primary/specialty care, all hospital service areas and post-acute home health and hospice services. In addition, an analytic tool was developed to monitor the impact of canceled surgeries and imaging procedures.

The analytics team also facilitated deeper dives, applying predictive data modeling to forecast pandemic impact, inform capacity planning and personal protective equipment (PPE) sourcing, to predict staffing demand and to plan for elective-surgery reopening.



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“We have a long-standing team that has done a lot of great work to build our analytics infrastructure,” Hohulin said. “That helped us move quickly to provide these critical COVID analytics and insights.”

Lara Terry, MD, head of medical analytics at Mass General Brigham, Boston, expressed a concern that was likely on the minds of U.S. healthcare analytics leaders at the beginning of the pandemic. A novel coronavirus is, by definition, new.

“A lot of the COVID-related analytics were novel, so some of that data required had not previously existed or was not curated in such a way that addressed our needs,” she said. “We were fast and agile but that resulted in some technical debt. I would imagine most analytics teams worked through similar challenges.”

To help manage through the uncertainty, analytics departments curated outside data to better assess the risk their organizations faced. Public health data—including cases, hospitalizations and age ranges—provided key statistics. Many Summit participants utilized mobility data aggregated by mobile carriers and GPS providers to help them estimate community spread. Others used supply chain data.

Michael Parris, VP of data integration at Texas Health Resources, Arlington, Texas, utilized crime data.

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“It was kind of a counterpoint to the mobility data,” he said. “The theory was, if people aren’t moving around, you’d see an increase in car thefts, you’d see a decrease in assaults and robberies because people aren’t outside. It didn’t track perfectly, but it was an interesting exercise.”

A pre-Summit survey queried participants on how COVID-19 changed their organization. Ninety-three percent said their organization’s speed of decision-making increased due to COVID-19. Seventy-eight percent said their analytics units suffered financial strain as a result of the increased work demand from the pandemic.

More than half of Summit participants—57 percent—said their analytics team’s objectives changed due to COVID-19. Others claimed that, while the pandemic may have changed their health system’s objectives, their analytics objectives remained the same.

“My responsibility is to provide the data, the insights and what is needed to meet those objectives,” said Danny Sama, VP of analytics and chief data executive at Northwestern Medicine, Chicago. “How we’re structured as an analytics organization, how we meet the demands of the health system have not changed.”



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Yohan Vetteth, chief analytics officer at Stanford Health Care, Palo Alto, Calif., agreed. “The overall objective of the analytics group stayed the same—provide data and insights to drive decisions,” Vetteth said. “What has changed is the speed at which we are able to reprioritize resources to address COVID needs and the overall collaboration between the groups that are typically competing for the analytics resources. Also, as we settle into more of a steady state on the COVID front, we are increasing the distributed nature of the analytics resources to take advantage of the organization’s new awareness and need for rapid data.”

John Pyhtila, PhD, chief data and analytics officer, Mass General Brigham, noted that “clinical operations incorporated disease surveillance, which was a new area for analytics, and therefore work streams have changed to reflect this new focus.”

Tristan Markwell, principal strategic scientist for Providence, Seattle, offered that “the data ethics work we had planned had to shift to the future, given the priorities around COVID prediction and response.”

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Achieving Steady-State Analytics

COVID-19 didn’t deter analytics organizations from their traditional focus, but it did enable them to strategically align that focus with health-system leadership. While leading COVID indicators such as patient volumes seem to have stabilized for the moment after the spring surge and summer spike, public health experts say fall and winter will see greater surges. Seasoned analytics leaders are poised to provide their organizations a new sense of stability and clarity to face the continued uncertainty of the pandemic.

“One of the things that COVID taught us is the idea of narrative-based analytics,” said Albert Marinez, chief analytics officer for Intermountain Healthcare, Salt Lake City. “Meaning it’s not enough for us to simply put up a dashboard and send it off to users. They want context. They want to understand what the data means, and they want that meaning served up to them.”

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Intermountain’s pandemic experience has focused the organization on its future and it has a key foundational element to do so: a robust data warehouse built over decades. The health system’s analytics team was able to mobilize a COVID response quickly.



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Allowing for concurrent data and combining it with artificial intelligence (AI) will be transformative, Marinez said, enabling Intermountain analytics to move beyond merely delivering dashboards to driving meaningful outcomes.

“We are going to evolve our data analysts from the traditional approach to what we’re calling ‘decision intelligence analysts,’” he said. “That will allow us to embed decision models into our caregiver workflows. The closer we can get to where the operations occur and the workflows occur, the better we’ll be at driving more value and better outcomes.”

At Sharp HealthCare in San Diego, the pandemic has provided further proof to executive leadership that they need to continue—even accelerate—their analytics evolution. The organization has focused on becoming consumer-oriented by delivering repeatable analytics and other technologies in an internal self-service marketplace. To move toward that objective, they have built capabilities in product management and agile development.

“Our platform needs to be constructed on many different parts and pieces, but we have to hide that complexity,” said Jon McManus, VP of enterprise analytics for Sharp HealthCare. “We have to make it easy for people to solicit those services, know what they are, seek them out and consume them in many ways on their own terms.”

McManus described Sharp’s future-state analytics as virtualized data in the cloud, leveraging AWS, with self-service data science “baked in” to facilitate modeling “on the fly.” In order to achieve that vision, McManus has operational responsibility for app development, analytics, data governance and interoperability.

Analytics, Strategy & Mission

Whether product or service-focused, analytics executives at the Summit agreed their roles were to help their respective systems achieve their strategic missions. Acknowledging that each faces different market-driven needs, participants shared ideas on the variable analytics structures within an organization.

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Dave Torgerson, VP of enterprise analytics at Sentara Healthcare, Norfolk, Va., has led multiple analytics teams, both within healthcare and in other industries. He engaged the group in a discussion about when to centralize and when to de-centralize.

The more centralized an organization, Torgerson said, the more advantages it has in terms of consistency, enabling leaders to establish standards, best practices, common data sources, etc.

“We have a system that closely resembles a coordinated model at the University of Chicago,” said Michael Wall, University of Chicago Medicine’s chief analytics officer. “And at our enterprise, this is very much our goal.”

“Our analytics request system, which our central group uses to manage all requests, enables our teams to focus on delivering top quality analytics,” Wall said.

“This model enables us to ask the entire enterprise what analytics they need, and then we connect them to teams who provide their solutions. Our many data and analytics teams are so successful in delivering high-value across our enterprise, putting the right data into the right hands, driving amazing outcomes.”

The degree to which analytics is distributed throughout the system impacts leaders’ ability to standardize, said Bernard Porter, associate VP of analytics, Baptist Health, Louisville, Ky.

“I think there’s an intersection there with thinking about data governance from the analyst up instead of the owner down,” he said. “If your analysts aren’t really performing good data governance, you may have it on paper, but I don’t think you’ll have it in practice.”

If organizations need highly contextual analytics—revenue cycle or clinical research, for example—supporting those functions with a general pool of data analysts would be ineffective. In contrast, a completely decentralized model would have analysts embedded within those departments and every other major operational unit.

Ultimately, given the requirements of today’s data-driven health systems, a hybrid distributed/centralized analytics structure is preferred—with an accommodation for politics.

“It may make complete sense to pull in analysts from other departments,” Torgerson said. “But as a practical matter, the person who runs that organization is going to

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For Providence in Seattle, analytics is clearly federated, according to Tristan Markwell. He described a diverse operating model, with

enterprise analytics supporting a broad range of functions, from population health to consulting services that provide support to other health systems across the country. Data operations are also federated, with deep expertise in clinical research, app-based predictive models, and even an off-shore development team in India.

"We are partnering across teams, across countries, and, with our enterprises strategy, across a variety of acquisition models," Markwell said. "To us, succeeding in such a fragmented environment depends on us focusing on building out a reliable platform that can serve all these different contexts with minimal intervention from our team."

Analytics & IT

The relationship between analytics and IT can sometimes be problematic. Summit attendees described a tension that often develops between IT and analytics, perhaps arising from the fact that IT enables analytics and both functions are staffed by technical experts.

Summit participants expressed interest in how each other's organizations managed tension between analytics and IT. When John Long joined UW Health, Madison, Wis., he became the system's first-ever VP of enterprise analytics, which was embedded within IT.

"Even with those teams already in the same place, in the same part of the organization, the integration and teamwork between my analytic side and my data team went to a whole new level beyond the COVID era," Long said. "That's in part because of the data ingestion, the nimbleness and the new types of data we need to utilize. Having those teams aligned within the IS organization is a very healthy place to be."

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Intermountain's history of applying analytics to data has lent itself to separate IT and analytics organizations. But that may not always be the case. "We've worked very well together and very closely together, but there is absolutely this demarcation of what an analyst can do and what a data architect can do," said Intermountain's Martinez. "We believe those lines will blur much more in the future."

The lines of demarcation become clearer as roles are defined, according to Sharp's McManus. "If you can clearly define the identity of IT versus analytics—utilization and performance monitoring on tech deployed versus unleashing the value of solutions and inter-exchange of business transformation—it goes a long way to helping ease the tension and clearing up roles and responsibilities."

Whether IT and analytics reside within the same walls or are separate and complementary, Baptist Health's Porter believes the COVID pandemic has been a unifying factor.

"I think there's a new spirit of teamwork. If we really focus on working—IT, analytics and others—together in the future, look what we can do," he said. "It's not so much even the technology. I think team members saw that and were pleased with what they could do working together. I'm hoping that's something we can build on, because no matter where we go, we need that."

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Remote Workforce

"Working together" is a term whose meaning has literally changed as the COVID-19 pandemic has caused employees to work at home. But the figurative meaning of working together cannot change, said Summit participants. In fact, teamwork and team building may be more important now than ever.

Boston-based Mass General Brigham experienced COVID similarly to many other Summit-attendee health systems. At the beginning of 2020 the organization was focused on shifting analytics to a system-wide posture versus its traditional but uncoordinated focus on specific domains. But instead of filling new positions, Mass General Brigham was forced, like other systems, to institute a hiring freeze when the pandemic hit.



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In March, the entire team was focused on COVID at the same time they were moving to remote work. By May, despite long hours and significant upheaval, the Mass General Brigham analytics team achieved its highest employee-engagement score on record.

“We were asking people to work longer hours and make sacrifices. They didn’t have all the resources they needed. There was a quick change, and employees typically don’t like change. Why did employees feel more engaged?” said John Pyhtila, PhD. “What we discovered is they found themselves so close to the mission, so close to being able to provide care to patients.”

Helping their organizations make it through the pandemic became a mission for Summit participants and their teams. Still, as working from home increasingly became the new normal, analytics leaders were concerned with maintaining team cohesiveness and engagement. This concern became especially heightened as awareness increased about equality in the workplace.

Mass General Brigham’s Terry said she missed the personal interaction. “Something I’m struggling with is replacing the informal ‘run-in’ conversations. Those interactions enabled a cross-fertilization that just doesn’t happen with scheduled video meetings. The informal information sharing can often be really valuable.”

Connecting with staff is always a good leadership practice and doing so is convenient in an in-person environment. Analytics leaders agreed they need to find new ways to connect with staff despite physical distancing.

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“That’s what we’re missing in this online environment, to some degree,” said Sentara’s Torgerson. “So for me, I use instant messaging, on-demand video chatting and fast file sharing over IM to fill in the blanks. And we have a weekly Zoom call where we—aside from talking about what’s happening with COVID—just talk about what’s going on in people’s lives,” he said.



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“I think I’ve worn the carpet out in coming out of my office to have conversations with people and establish relationships,” said Brian Young, MD, enterprise physician informaticist, CommonSpirit Health, Phoenix. “At least for me personally, given that ‘facetime’ groundwork, I don’t feel as uncomfortable with remote work as some because I feel like I have come to know people. But not everyone has that advantage. I think it’s going to be a range of experiences in our collective new normal.”

Remote work was an issue that transcended the pandemic. As organizations develop a more remote workforce generally, team cohesiveness becomes a long-term challenge. Ideation and innovation within a virtual team environment will need specific, intentional activation.

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“I am concerned about building company culture when staffs are geographically remote,” said Peter Prina, information services director for Spectrum Health, Grand Rapids, Mich. “Being in Western Michigan, we have not traditionally hired from outside of the state for remote work, but we have had team members consistently work partially remote prior to COVID. Full-time remote would be a challenge in and of itself.”

Paul Lampi, director of technical services for Memorial Hermann Health System in Houston, suggested that this conversation about managing a remote workforce deserves significant attention. “Overall, 70 percent to 80 percent of our analytics staff have elected to remain permanently virtual. This is definitely a topic we plan to pursue.”

Baptist’s Bernard Porter agreed, noting that “it will be important to create an analytics culture that attracts the right talent, as we will be competing with other remote staffing options for the best and the brightest.”

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Pyhtila identified four principles that helped his organization develop a more engaged employee base during the pandemic:

FIRST	Listen to employees. Pyhtila and his leadership team are focused on trying new things, gathering feedback and iterating quickly. Mass General Brigham leaders have found that listening to employees results in faster problem resolution.
SECOND	Increase communication. The analytics team met three times a week at the beginning of the pandemic, then moved to weekly meetings and eventually scaled back to monthly meetings. The number of meetings changed based on the need for sharing information. In addition, leaders were frequently engaging employees in what they called “coffee chats,” small groups that could get together and talk about things other than work.
THIRD	Empower managers. Managers are key to enabling employees and making remote work sustainable. Mass General Brigham has trained its analytics managers on factors like psychological safety, how to become a good coach and how to improve team dynamics under remote work.
FOURTH	Provide flexibility. At home, workers are more than just workers. They are often parents and, if parents, are often also teachers. Employees are under tremendous pressure when work from home is mandated. Allowing employees to support their families throughout the day can reduce some of that pressure.

Conclusion

Analytics has become a strategic asset for leading health systems. While organizations vary in their culture and maturity, analytics executives participating in the Scottsdale Institute 2020 Virtual Analytics Summit are setting the standards for analytics in the healthcare system of the future.

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