Andy Dé, Healthcare & Life Sciences Solutions Leader

Enabling Healthcare Analytics for Better Patient Outcomes

Change Isn't Coming. It's Here.

Anyone in healthcare knows how rapidly the environment is shifting. The implementation of the Affordable Care Act (ACA) in the United States in tandem with new standards for global health initiatives, are driving transformational change for current business models, disrupting established systems, and forcing the industry to rewrite established business processes. Still, the expectation to deliver significant improvements across the sector is at an all time high. For any real chance of advancement, doctors, nurses and healthcare administrators alike need direct access to data insights to drive measurable patient and performance outcomes. The demand for actionable insights from integrated medical data is dire.

Patient flow, medical records, service monitoring, cycle times and even profitability have untapped, need-to-know information in the data—and most of it is idly waiting for discovery.

People within healthcare organizations have traditionally accessed data via static reports from enterprise applications and business intelligence tools, all managed and used only by the IT department. This old way, predominantly designed and built in the 1990s, is generally complex, inflexible, time consuming and expensive.

With increasing data volumes, disparate data sources, and a lack of resources, reporting actionable insights from the hospital floor is presumed difficult. The amount and variety of data makes the concept of a one-stop data warehouses obsolete, even as many hospitals still struggle to build their first data warehouse. These circumstances seem threatening, even out of control. They need not be.

Self-service analytics can yield huge dividends for the practitioner and the patient, all the while protecting the privacy of data assets and providing a single source of truth throughout healthcare organizations.

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"The old approach to business intelligence confirms what we know. Now departments throughout the hospital can ask the question, 'What am I trying to accomplish?' and explore what they don't know,"

—Ted Corbett, Director of Knowledge Management, Seattle Children's Hospital

The Old Way

The healthcare IT divide is real.

Analysts from a recent IDC health insights report noted that operational inefficiency will become critical for 25% of hospitals in the U.S. for 2015, and that 58% of health care providers are dissatisfied with their current Electronic Health Records (EHR) system.

For years, hospitals and clinics have relied on IT departments to provide answers to data questions, creating a never-ending cycle of long wait times and inflexible results. IT has faced the inverse challenge. They spend dozens of hours churning out reports and responding to requests that often fall short of what the requester needs to know.

Also, because most healthcare workers lack the time and skills to see and understand data, they simply don't use the analytics systems provided by their companies. As a result, many knowledge workers today rely on spreadsheets as their primary self-service analytical tool, which can be slow, inefficient, erroneous and impossible to govern and scale.

Healthcare providers are looking to turn the tables on this status quo by empowering individuals throughout their organizations to explore data to answer their own questions. Not only will this enable faster, more insightful life impacting decisions, it's letting IT get back to the business of building and maintaining the backbone—a secure and reliable data infrastructure.

Many clinics and hospitals have already created a self-service model, where IT and business intelligence teams are shifting away from knee-jerk reactions to requests and toward training individuals and departments to ask and answer their own questions. Furthermore, access to data is established with full consideration of security requirements throughout the organization.

The result is less time spent by the IT department to generate reports and respond to inquiries and more data-driven decision making for knowledge workers at the hospital or clinic.

IDC Health Insights

▸ *Read more healthcare predictions for 2015 in this IDC FutureScape report.*

Watch this short video to learn how top medical organizations are taking control of their data to better serve their patients.

The New Way

Even with new data technologies that empower everyday users, hospitals sometimes fail in their analytics strategies. New approaches demand a new methodology.

We look to proven agile development and deployment methods that move as quickly as the changing requirements. We look to a methodology that allows IT and hospitals to work together as partners. We look to a lighter process that allows people to exercise their natural curiosity and collaboration.

The three attributes of the new way to approach healthcare analytics are:

1. Self Reliance

Because the best analytics implementations are user-created dashboards running on top of IT-managed infrastructure, optimization for self-service is key.

With more than 6,000 staff caring for patients around the clock, St. George's Healthcare NHS Trust is the largest healthcare provider in southwest London, but had a reliance on manual reporting systems such as spreadsheets, slide decks, and pivot tables. With the bottleneck of preparing reports, information was often out of date—up to three months old—by the time it reached the clinical directors and other decision makers.

"We were gluing together siloed information with our bare hands," explained Tom Dewar, Head of Information at St. George's Healthcare NHS Trust in London.

"So much time was spent gathering the data, it was often too old to be acted upon. We needed to be more proactive," he continued.

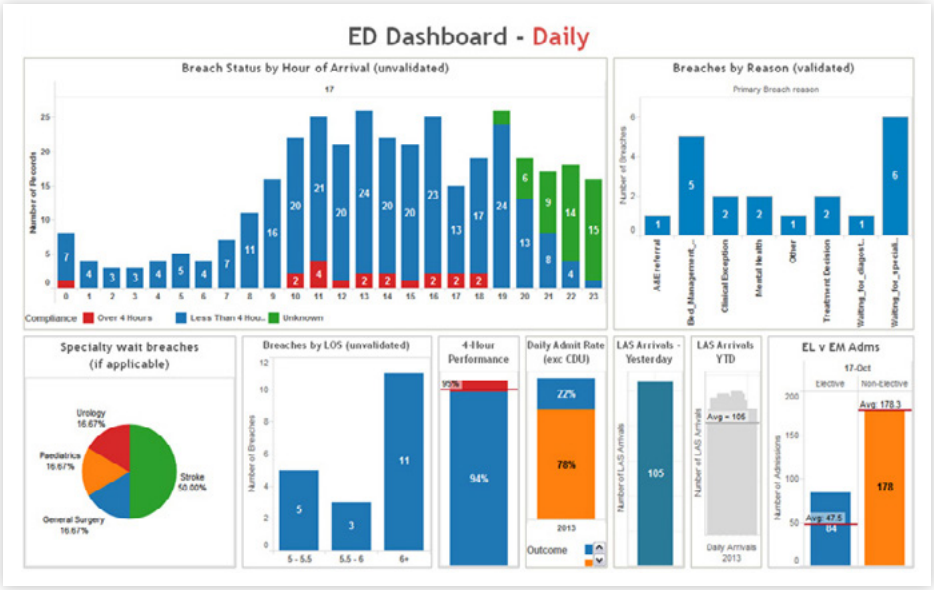
By implementing a mass adoption of self-service analytics, data from the hospital's electronic health records and other applications have improved patient care and met the challenges of cost reduction, resource allocation, and compliance regulations.

For example, with the pressure of coping with increased volumes of patients in the Emergency Room during the winter months, St. George's staffers were able to utilize an 'Arrivals' dashboard, displaying patient arrival metrics by date, by specialty and other criteria. Taking only minutes to review, it became immediately clear that stroke activity is one of the primary cases for crowding. Being able to quickly uncover important patterns and trends like these are essential to data-driven decision making.

"We want consultants, divisional heads, managers, and other staff to answer questions themselves like, 'how many heart patients did we see last year?', or 'how many patents are delivered to Accident and Emergency by ambulance, versus walk-in cases?'"

—Tom Dewar, Head of Information, St. George's Healthcare NHS Trust

Watch and learn how St. George's Healthcare is empowering doctors, nurses and clinicians with real-time actionable insights through self-service data discovery.



With this self-service dashboard, staffers can view patient flow at-a-glance, and immediately understand the immediate changes needed in the Emergency Department .

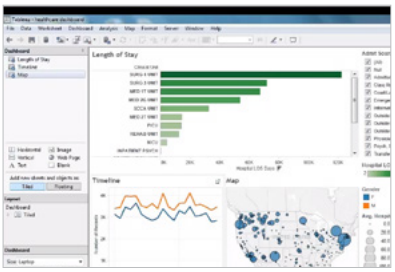
St. George is an organization that strives to inform every decision with data—healthcare workers are responsible for doing analysis, and the hospital IT department is responsible for managing and securing data. Each team respects what the other brings to the table. Both are advancing the ability to answer questions and, in doing so, adding tremendous value to the entire organization.

"By capturing rich, timely insight into the hospital's current behavior, the team is able to advance care coordination, improve care quality and increase healthcare efficiency," Dewar explained.

"We want consultants, divisional heads, managers, and other staff to answer questions themselves like, 'how many heart patients did we see last year?', or 'how many patents are delivered to Accident and Emergency by ambulance, versus walk-in cases?', Dewar continued.

By answering questions like these more quickly, and not wasting IT resources with report generation, St. George's will be able to increase patient flow, improve outcomes, and ensure every touch-point with the patient is executed flawlessly.

There is little to no dependency on IT to answer these questions—but it is all made possible by what doctors and workers don't see: the data sources that have been set up and managed by IT. This is a key concept: to make the most of a self-service analytics strategy, you need highly usable, easy to access data.



Watch this 3-minute tutorial to see how easy it is to create visualizations with healthcare data.

2. Visual Discovery

Real understanding of data begins with visualization.

Your doctors are thinking about the questions they need to ask the data—not about how to use software. Visualizations unlock the value of raw data into forward-thinking insight and real-time action. A visual approach to analytics will allow doctors, nurses, clinicians and administrators with no special coding skills to instantly spot anomalies, outliers and trends without sorting through pages of spreadsheets. By using dashboards, a story unfolds as you navigate from one visual summary into another.

Piedmont Healthcare, a five-hospital system with 400 employed medical staff members and approximately 1,200 affiliate physicians, has been serving patients in the greater Atlanta area for more than a century. And with hundreds of affiliated practices, Piedmont healthcare provides a steady and wide range of healthcare services throughout Northern Georgia.

As Piedmont Healthcare started to become a more data driven organization they likewise needed to navigate the hurdles coming from healthcare reform. The game changer? They needed to transform their reporting system to be able to deliver insight faster.

“You have to be able to respond rapidly to changes in the market, and with all the changes that are coming in healthcare legislation,” explained Mark Jackson, Business Intelligence Manager at Piedmont.

“We can’t get the information to the decision-makers quick enough for us to be able to rapidly change in this environment. We had these monthly operating reports, and they were 133 pages long—and they produced one of those for every hospital. So by the time they reached the decision-makers’ hands, they were out of date. We were essentially able to replace 2,400 pages with a single dashboard,” Jackson continued.

Piedmont found that dashboards with data visualizations were tremendously helpful in a variety of high priority projects. For example, Piedmont launched a collaborative initiative called Patient First to allow physicians to focus attention on one patient-centered activity at a time. The data visualizations aggregated data from multiple disconnected systems for accurate and timely visibility into their physician scheduling issues in conjunction with heart failure and heart attacks.

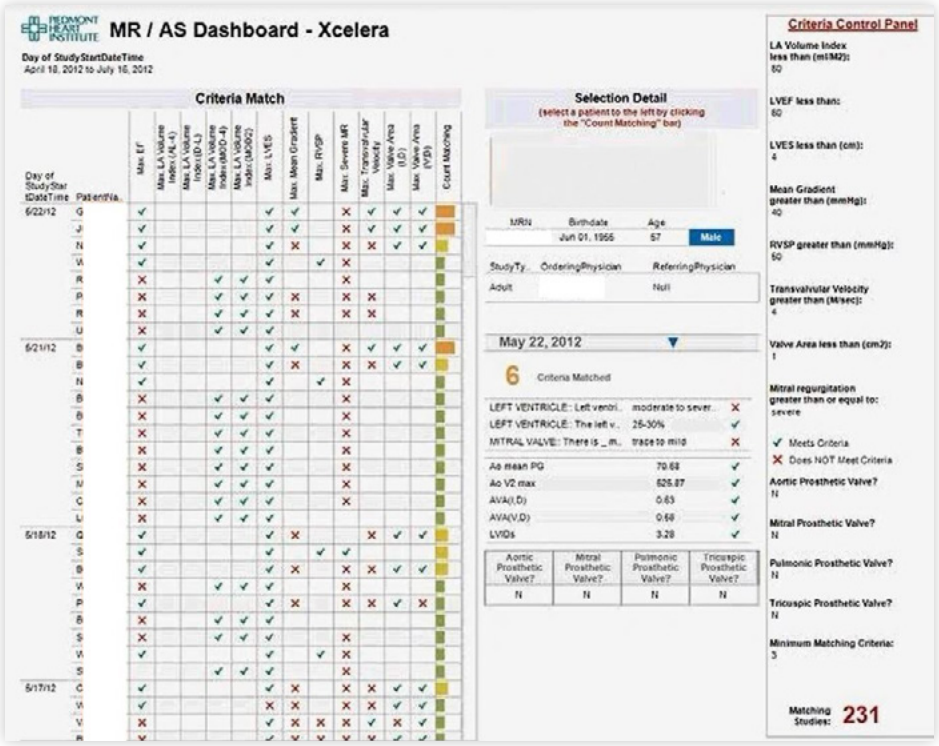
"That's the kind of care that I want to know I'm getting when I'm going into any hospital system—that I'm not going to fall through the cracks, and they're not going to miss something, because people are on the back end doing smart things with all the information that they're collecting about me."

—Mark Jackson, Business Intelligence Manager at Piedmont Healthcare

▶ *Watch and learn how visual discovery improved patient care at Piedmont Healthcare.*

"We've seen a 50-percent improvement in our variance from benchmark in cardiovascular length of stay. We've also seen a 10-percent reduction in heart failure readmissions, and we've seen a 12-percent reduction in readmissions for patients who are heart attack victims. And overall, that's improved our patient satisfaction scores by 7 percent," Jackson explained.

This program also improved physician scheduling to save more than $2 million in consulting services annually.



This visual dashboard from the Piedmont Heart Institute's Patient First project allowed physicians to quickly and proactively determine which patients would benefit from valve surgery.

"Real-time information, real-time knowledge, creates real-time accountability. And our ability to deliver quickly and rapidly change in an environment to make sure that our care is exceptional, man, real time accountability you can't beat that."

—Randy Fagin, MD, VP of Robotic Surgery, The Texas Institute of Robotic Surgery

▶ *Watch and learn how the Texas Institute of Robotics helps turn data into actionable insights that lead to better care.*

3. Speed At Every Stage

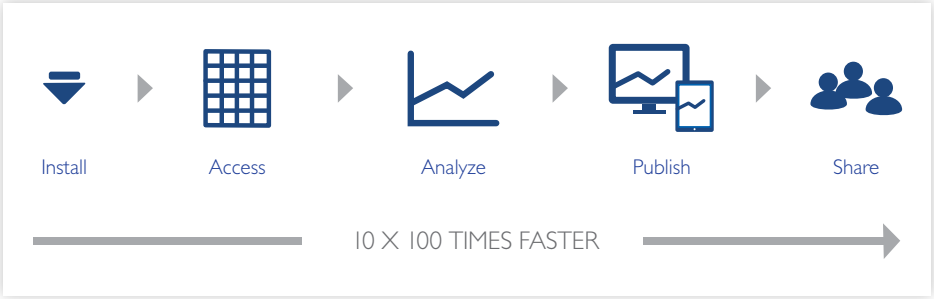
Saving time in every step of your data workflow is fundamental. From installing software, accessing and analyzing complex data sets, publishing interactive dashboards, and sharing across your organization, for your data it to be impactful, the insight-to-decision process must be swift.

Realizing the value and measurable ROI of your enterprise BI investment starts with speed to implementation. If you answer yes to any of the following questions, your BI system is not moving as fast as it could be:

- Does your business intelligence solution require weeks or months to deploy or change?
- Does your BI solution require weeks of training before new users can build and publish their first dashboard or report?

Installation and deployment should take only hours or days to implement, not weeks or months. The solution should be simple and intuitive enough for anyone without special coding skills to use; training should be even faster.

Be sure you can accurately explain how every metric on your dashboard connects to organization objectives.



Compared to traditional business intelligence, rapid-fire analytics is 10 to 100 times faster at every step in the data workflow, from installing software and accessing data to analyzing complex information, publishing interactive dashboards, and sharing across your organization.

"I'm a surgeon by training and I've kind of transitioned to the healthcare management field. I'm not a statistician. I've got no background in mathematics outside of what I did in college. And to be able to be the person with no intermediary between myself and understanding the data, that was critical,"

—Randy Fagin, MD, VP of Robotic Surgery, The Texas Institute of Robotic Surgery

Secondly, the speed to which doctors and administrators can access their data is mission critical.

Doctors and clinicians must easily combine many data sets from different parts of the medical operation on the fly. The infrastructure must provide in-memory capabilities to speed up slow data as well as be able to connect live to fast databases.

Doctors from the Texas Institute for Robotic Surgery are no strangers to this new, faster methodology. At this organization, technology and medicine go hand-in-hand, along with mountains of data.

With 98 hospitals, doctors examined real-time data from 30,000 procedures per year. What's the same by surgeon—by procedure, by nurse type—and how can we leverage that to deliver better care?

"Our over-riding aim is to deliver outstanding patient care against a backdrop of unrelenting pressure to reduce costs, maximize resource allocation, and meet compliance considerations. Tableau will take St. George's a long way towards achieving those goals."

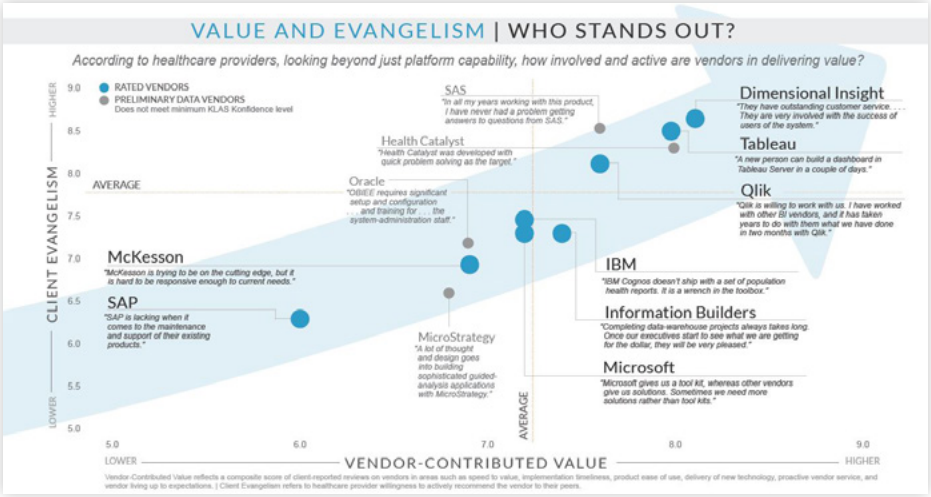
—Tom Dewar, Head of Information at St. George's Healthcare NHS Trust

The Bottom Line

There is a tidal change occurring in healthcare analytics. The old business intelligence models are slow and resource-intensive. When families bring a sick child to your medical center, they want help fast, and the right data software can increase speed to action.

For healthcare providers, today's analytics and insights could make the difference in tomorrow's clinical outcomes. The need to understand healthcare data and to draw insights and correlations from it—BI & Analytics—continues to grow.

To help providers see how well vendors are helping deliver on speed to value and needed insights, the research institute KLAS, conducted a study focused on BI/Analytics products in healthcare. The goal of this study was to measure vendor performance and differentiate between vendor options to help providers as they consider and make BI/Analytics decisions going forward below are the findings of this report.



Learn more from this research by clicking into the report.

About the Author

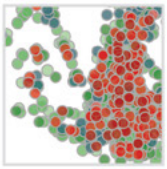
Andy Dé, Healthcare & Life Sciences Solutions Leader

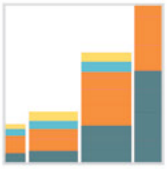
Andy Dé is the industry strategist and solutions leader for healthcare and life sciences at Tableau. He has over 20 years of enterprise software innovation strategy, portfolio management and go-to-market strategy, planning and execution experience at GE Healthcare, SAP Health-Sciences and i2.

Andy is passionate about Healthcare Innovation and authors a health sciences strategy blog and twitter feed (@HITstrategy) with a readership audience across 47 countries, that has been referenced by Harvard Medical School, HIMSS, Healthcare Informatics, Partners Healthcare and the Washington Post. You can read more about Andy and his healthcare expertise at www.andyde.com/.

About Tableau

Tableau offers a revolutionary new approach to self-service data discovery for healthcare analytics. With easy-to-use, drag-and-drop technology, you'll quickly connect to, visualize, share, and report on healthcare data, with a seamless experience from the PC to the iPad. With proven deployment methodology, Tableau solutions generate fast, visual, self-service dashboards with no programming skills required. See the impact Tableau can have on your healthcare organization by downloading a free trial at www.tableau.com/trial.





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Rapid Fire BI

The KLAS Report: Healthcare Analytics Performance

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