



Centerstone Research Institute: Smarter clinical decisions help patients and performance



— Tom Doub,
Chief Operating
Officer, Centerstone
Research Institute



— Casey Bennett,
Data Architect, Data
Analytics Department,
Centerstone Research
Institute

At 30,000 feet, Tom Doub and Casey Bennett are talking shop. As they do several times a year, Doub, COO of the Centerstone Research Institute (CRI), and Bennett, its chief data architect, are traveling to an academic conference to present the findings of recent research to their peers.

The subject of their research—how advanced analytics can improve the effectiveness of behavioral healthcare delivery and ultimately transform the way disease and treatment are each conceptualized—is just one part of CRI's broader mission of supporting the clinical operations of Centerstone, its sister organization and leading provider of behavioral healthcare services in Tennessee and Indiana. But it's a part that, over the past few years, has steadily grown in importance, with Doub and Bennett at the center of the action.

Leadership Spotlight

COO Tom Doub and everyone else at the Centerstone Research Institute fervently believe in the mission of their organization—supporting Centerstone's efforts to prevent and cure behavioral illnesses. They brought that same zeal to their goal of transforming Centerstone Research Institute into a data-driven provider.

How Centerstone got smarter

Driven by a changing business landscape, Centerstone went on the offensive. Resolving to take advantage of the information it captures, Centerstone embedded intelligence into its clinical decision-making practices and made it more transparent. Empowering its clinicians to make smarter decisions has had a direct impact on the company's financial performance, increasing revenue by 30%. But more importantly, it has enabled Centerstone to improve key quality-of-care measures, while making itself more accessible to patients.

Let's Build a Smarter Planet

A shared passion for improving care

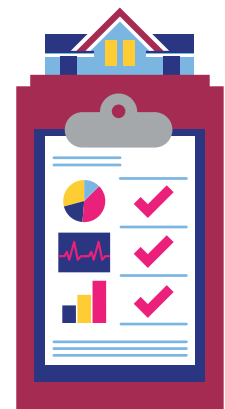
Like just about anyone you talk to at CRI, Doub and Bennett share a passion for their organization's mission and a sense of being privileged to be a part of something they consider so personally important. While bound by common values, the strength of CRI as an organization derives from the diversity of its expertise and, more importantly, from its ability to mesh this diversity to address complex issues. In the case of CRI's ongoing initiatives around the use of analytics to improve care, the weaving together of different backgrounds and perspectives has proven especially effective, with no better illustration than Doub and Bennett themselves. Doub, a Ph.D. trained in clinical and quantitative psychology, anchors the clinical dimension of the research, while Bennett, trained in informatics, brings important perspectives he learned modeling genetics and biology. Both played a key role in the genesis of what they see as a broad transformation in the way CRI—and Centerstone more broadly—uses information to support clinical care decision making. That story begins a few years ago, in Centerstone's Nashville headquarters, with a realization, an idea, and the will to act on it. In the course of discussions COO Doub held with Centerstone's VP of Quality Improvement and its CIO, the trio realized that each had unique data skill sets and resources in their respective groups and could benefit from pooling these resources to create a common analytics capability that they could all leverage.

Nurturing a data-driven culture

Out of this effort evolved not only CRI's new analytics organization, but also, explains Doub, a new resolve to transform Centerstone into a more data-driven organization. "Our vision at the beginning was to have a group that could focus on helping Centerstone become a more data-driven organization," says Doub. The first component of this vision—the data itself—was already in place, a product of the strict requirements around record keeping that healthcare providers like Centerstone are subject to.



“By becoming more data-driven, we’ve strengthened our ability to adapt to the direction that we see behavioral healthcare going in and, more importantly, our ability to provide the best outcomes for our patients.”



The benefits of Centerstone's clinical decision optimization

- 30% increase in revenue
- 25% increase in treatment plan compliance, signifying improved quality
- 25% increase in the amount of time clinicians spend with patients (as opposed to administrative tasks)
- Patients can now schedule services in 10 days instead of 16, a 37% improvement in access

Doub and his team saw the other piece of the puzzle—the need to institutionalize the use of data to drive decisions and processes across all of Centerstone’s operations—as a multilayered challenge, one that they recognized would take time. Their first step was to refine their vision and develop a roadmap for implementing it. The approach they took reflects the spirit of open-mindedness and eclecticism that runs deeply throughout CRI’s culture. While Doub’s team saw healthcare best practices as an important reference point, they were determined to think out of the box by exposing themselves to a range of different ideas in completely unrelated industries. “When it comes to leveraging data to optimize, we believe in the value of cross-pollination,” says Doub. “That may mean gleaning some of the predictive analytics approaches used in retail, along with things that are going on in the cancer biology realm.”

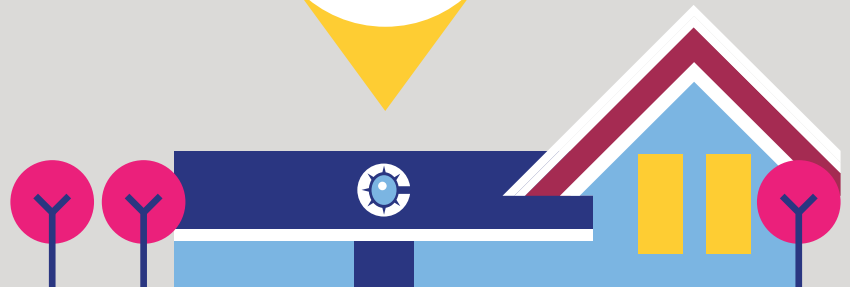
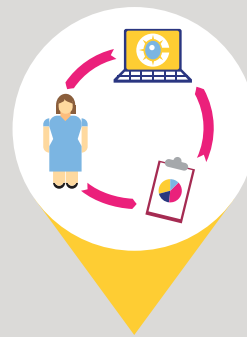
Leadership is:

Making ‘little wins’ add up

Recognizing the need to nurture a data-driven culture within Centerstone, CRI methodically built a case for change through a series of incremental “under-the-radar” successes. “As we accumulated little wins, we built up a lot of momentum... You need to be opportunistic and take advantage of little wins along the way and not try to change the world overnight.”

— Casey Bennett, Data Architect, Data Analytics Department, CRI

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Show me, don’t tell me

By developing a roadmap for embedding data and analytics into the core of its operations, Centerstone now had a specific set of goals to work toward. That was, in many ways, the easy part. The Centerstone team recognized that the cultural side of the transformation would be as challenging as it was essential. As Bennett points out, this was especially true for clinical staff, whose day-to-day decisions would be more closely guided by analytics-based intelligence, and as a first step toward the longer-term goal of a data-driven clinical decision support system (CDSS) and personalized medicine. “Before we could get people comfortable dealing with clinical recommendations that come from algorithms, we needed to establish their legitimacy gradually and from the ground up, show them how data can make their lives better,” explains Bennett. “In this case, ‘show me’ is much more powerful than ‘tell me.’ The end game is data-driven CDSS and personalized medicine, but it doesn’t happen overnight.”

The same basic principle applied in the approach Doub would take to make the business case for investing in the analytics and decision-support infrastructure needed to make Centerstone a more data-driven operation. The thinking behind his approach was that even though these investments were ultimately strategic in nature—in that they enabled a broad transformation of the business—it was easier, and just as effective, to justify them as a series of tactical investments, directed at specific

Lessons learned:

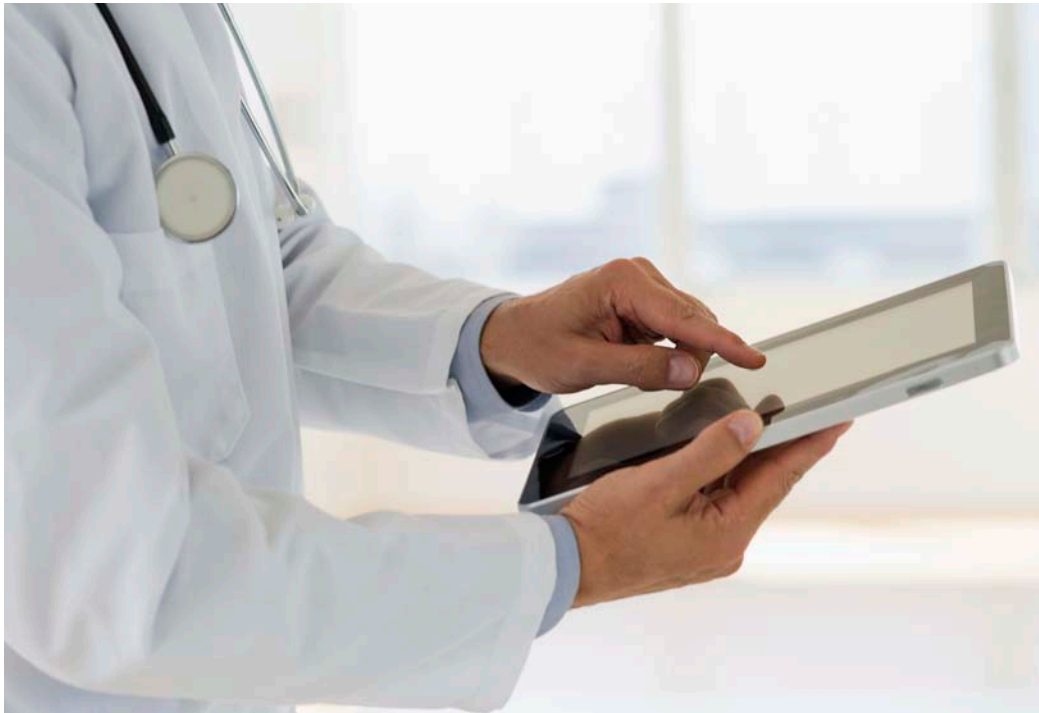
Virtuous cycle of data quality

In making business information more transparent to clinicians, CRI managers were surprised that it led to an improvement in data quality. “The fact that clinicians and managers benefited from [data] transparency ultimately proved to be an incentive for them to get the information into the system correctly. That gave us a very strong foundation of ‘good’ data that we could then use for the kind of modeling we’re doing now.”

— Tom Doub, Chief Operating Officer, Centerstone Research Institute

business needs. In essence, Doub and his team saw Centerstone's need to react as an opportunity to build toward a broader vision—call it “reactive opportunism.”

When, for instance, Centerstone needed to enable interactive reporting to support a new mobile crisis response capability, the team used its existing data warehouse and ad hoc querying capability as a starting point, and designed it in a way that would support other, longer-term reporting and analysis needs. The more dramatic impact came, however, when the new payer relationship—requiring a different contractual payment model—compelled Centerstone to revamp its case management capabilities, and in the process its long-standing core payment processes. Given the potentially adverse financial impact of the change, the stakes were high.



Centerstone Research Institute: The parameters of data-driven clinical decisions

Instrumented

Clinicians gather patient data in the course of “intake,” where it is automatically fed into underlying business rules.

* Interconnected

CRI's decision support tools integrate data from numerous systems to provide a comprehensive view of each patient's situation.

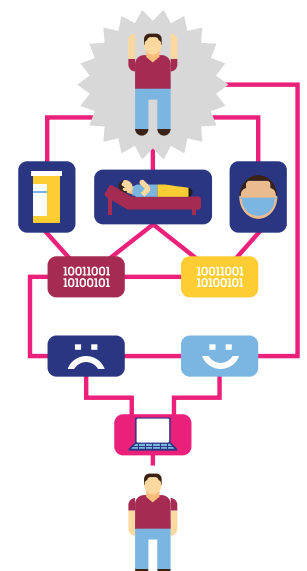
👁 Intelligent

By analyzing the effectiveness of past treatment patterns, Centerstone will be able to predict which treatment approach will yield the best result for a given symptom profile.

Supporting the clinician

What CRI developed in response was an analytics capability that makes the financial impact of specific clinical and business decisions transparent. With it, clinicians can track on a day-to-day basis how they choose to spend their time, which services and courses of treatment they choose to provide, and the impact of those decisions on revenue and profit; intelligence from underlying algorithms provides guidance to help optimize those decisions. Not surprisingly, skepticism bubbled to the surface almost from the outset, with some managers bristling at the idea of compromising the sovereignty of clinicians' decisions. One way the team allayed those concerns was to clarify that this was about supporting decisions, not making them. “We frame it as trying to provide better tools to make clinicians better at what they do,” says Bennett, “like a modern surgical scalpel.”

What was most effective at changing minds were the results the new solution delivered. By making the financial impact of clinician decisions more transparent, the solution drove a 30 percent increase in revenue, while the average time required to see a clinician fell by nearly half, to a historic low. Perhaps most importantly, Centerstone's quality of care indicators surged. For each of these improvements, it all comes back to making the right decisions with the backing of intelligence.

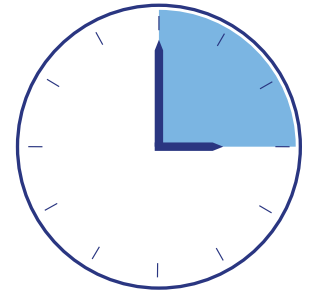


Putting patients at the forefront

While every clinician is compelled to focus on more than the core skills of diagnosis and treatment, it's especially the case in the field of behavioral healthcare, which faces a myriad of administrative requirements. Most commonly, clinicians need to ensure that patients are eligible for specific treatments. Having a patient assigned to, and adhere to, a specific treatment plan is not only a prerequisite for eligibility, but also one of the most important quality-of-care indicators. However, given their intense daily demands, it's not difficult for the average behavioral clinician to inadvertently miss this requirement, thus making it harder for the provider to collect reimbursement. By embedding this information (in the form of underlying artificial intelligence) directly into the feedback system, Centerstone increased its treatment plan compliance by 25 percent, while similarly increasing the time clinicians focused on patients rather than on administrative details.

The next stage of Centerstone's transformation—leveraging analytics to help optimize clinical diagnosis and treatment—is currently unfolding. Bennett believes that the model Centerstone is pursuing reflects its deeply held belief in the value of enabling highly individualized mental health services. “We recognize there's variability in the real world and that a one-size-fits-all approach [to diagnosis and treatment recommendations] doesn't work in our population,” says Bennett. “Our aim is to give the clinician a foundation of practice-based evidence for making the best care decision by predicting what works best based on the clinical patterns that we observe.”

In the two years since Doub and his team embarked on a mission to nurture a more data-driven mind-set within Centerstone, they've made major strides. He credits the opportunistic approach they took—with its emphasis on building trust by letting the results do the talking—as a major reason for the program's success. “We've been able to really transform the organization [to the point where] we are nothing like we were just a few years ago,” says Doub. “By becoming more data-driven, we've strengthened our ability to adapt to the direction that we see behavioral healthcare going in and, more importantly, our ability to provide the best outcomes for our patients.”



Centerstone Research Institute's decision optimization solution is ...

Software

IBM® SPSS® Modeler, IBM SPSS Statistics

For more information

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