

HEALTHCARE ANALYTICS

Four ways data is
improving healthcare
operations



Lower cost, better care

More than ever, the healthcare industry is challenged with corralling and understanding massive amounts of data to drive operational efficiencies, and better patient outcomes.

As healthcare providers adopt new practices to align with the value-based care paradigm and enterprise business objectives alike, they are critically challenged with implementing repeatable processes to improve supply chain efficiency, revenue cycle management, and clinical productivity.

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Four ways data is improving healthcare operations

- 1 Enabling population health management with self-service analytics
- 2 Increasing productivity with real-time analytics
- 3 Aggregating and blending data to uncover inefficiencies in the supply chain
- 4 Automating ad hoc visual analysis for better revenue cycle management

Enabling population health management with self-service analytics

Self-service analytics empowers individual healthcare employees, and the enterprise alike, to see and understand data across every system—operational, financial, and clinical.

With direct access and the ability to explore population-risk stratification data, any healthcare worker can monitor, measure, and understand the risk and financial implications of his or her treatment protocols and decisions on a per-patient basis.

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The biggest problem is not: How do we get more data? It's: How do we take the data that we have, and be able to simplify it to a point at which someone that's nontechnical—like a lot of the physicians, or executives, or hospital managers—can easily understand where they are, and move in a common direction? We have about a thousand users a day on average, and it's saved us a lot of money in analysts, time, and resources.

- David Delafield, CFO of Swedish Medical Group, Swedish Medical Center

Providence Health, a 34-hospital network, has tons of data, hundreds of disconnected systems, and thousands of disjointed reports. In order to successfully move to new value-based model standards, Providence needed to simultaneously streamline operational reporting and improve clinical productivity.

Providence integrated an enterprise self-service analytics platform, internally named Vantage, to allow anyone in the organization to monitor, analyze, and improve any related clinical outcome with data.



Vantage empowers people to find insights and track financial and clinical KPIs. People can track each region's quality of care and spending at both the provider level as well as on a physician scorecard.

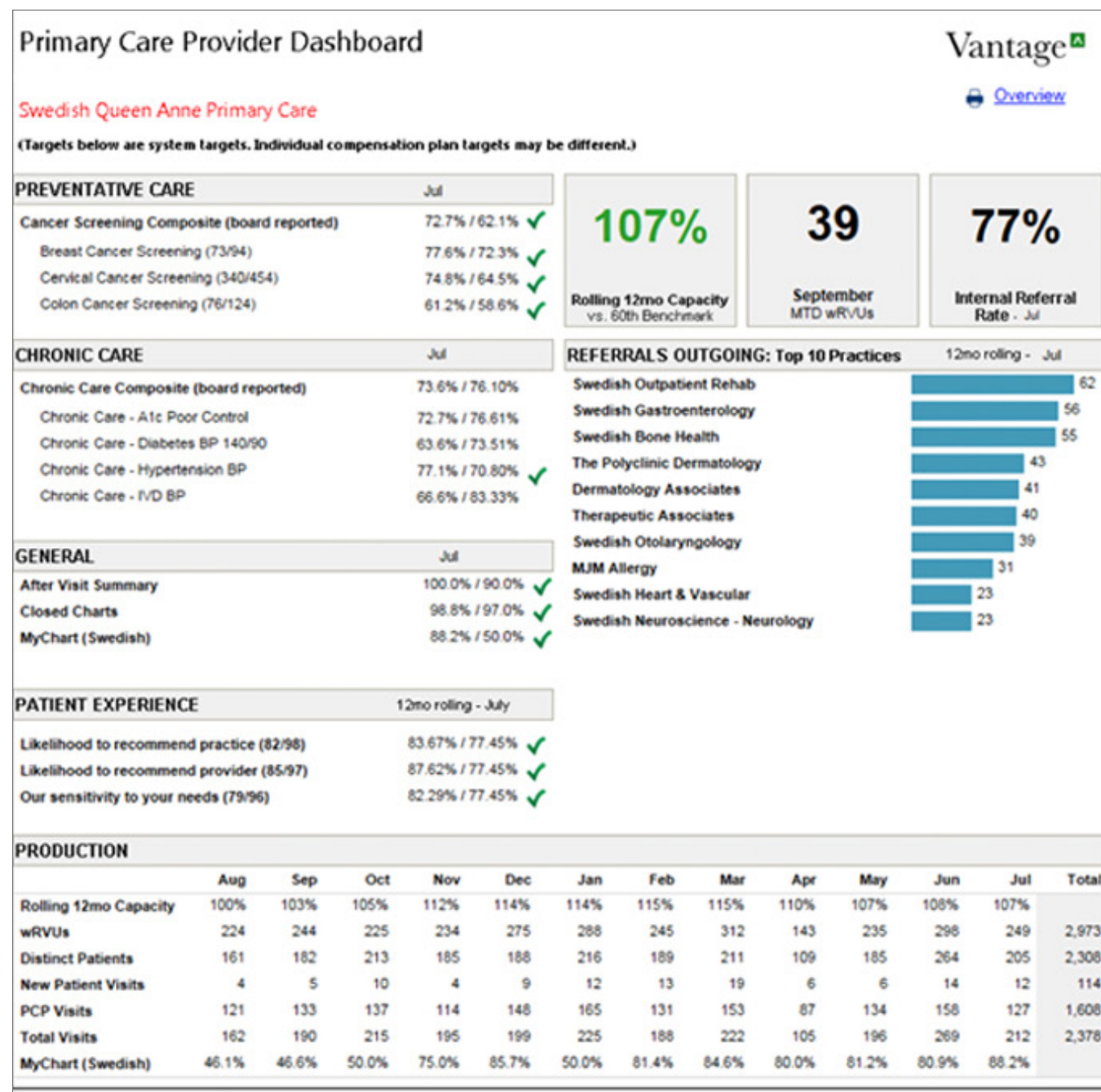
More than 26,000 Providence employees adopted Vantage in the very first year, and the results are actually saving lives.



For example, Swedish Medical Group, an acquisition of Providence Health, drove a massive cancer screening effort with Vantage. Using interactive dashboards, clinic employees could quickly identify the patients overdue for their screenings, then, send patients reminders without leaving the platform.

This effort alone has increased the colon, colorectal, and breast cancer screening composite metric for this population from 30% to 62%.





Here are examples of cancer-screening data visualizations. The data is segmented to identify patients at risk for specific kinds of cancer within a certain population, and it is used to monitor the need for proactive intervention.

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The cancer screening metric and our patient detail reporting has enabled better patient care. We are really saving lives with our data.

- Kim Womack, Clinic Administrator, Swedish Medical Group

Increasing productivity with real-time analytics

Responding to fire drills is a fact of life for healthcare workers. Whether data is from this year, this week, or a few minutes ago, there's no doubt about it, reliable data that is within the right timeline for a hospital's needs, will elevate operational efficiency.

In order to drive decisions at the speed of business, data must be current. Proactive healthcare organizations are turning to right-time data feeds to improve decision-making, and track costs and outcomes as they go.

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We had more than 100 physicians and mid-level extenders, and we needed to reorganize their entire day. We had them basically spread out doing many different things, creating some inefficiencies.

- Mark Jackson, Piedmont Healthcare



Watch this video to learn what Piedmont Healthcare is doing to improve operations with data.

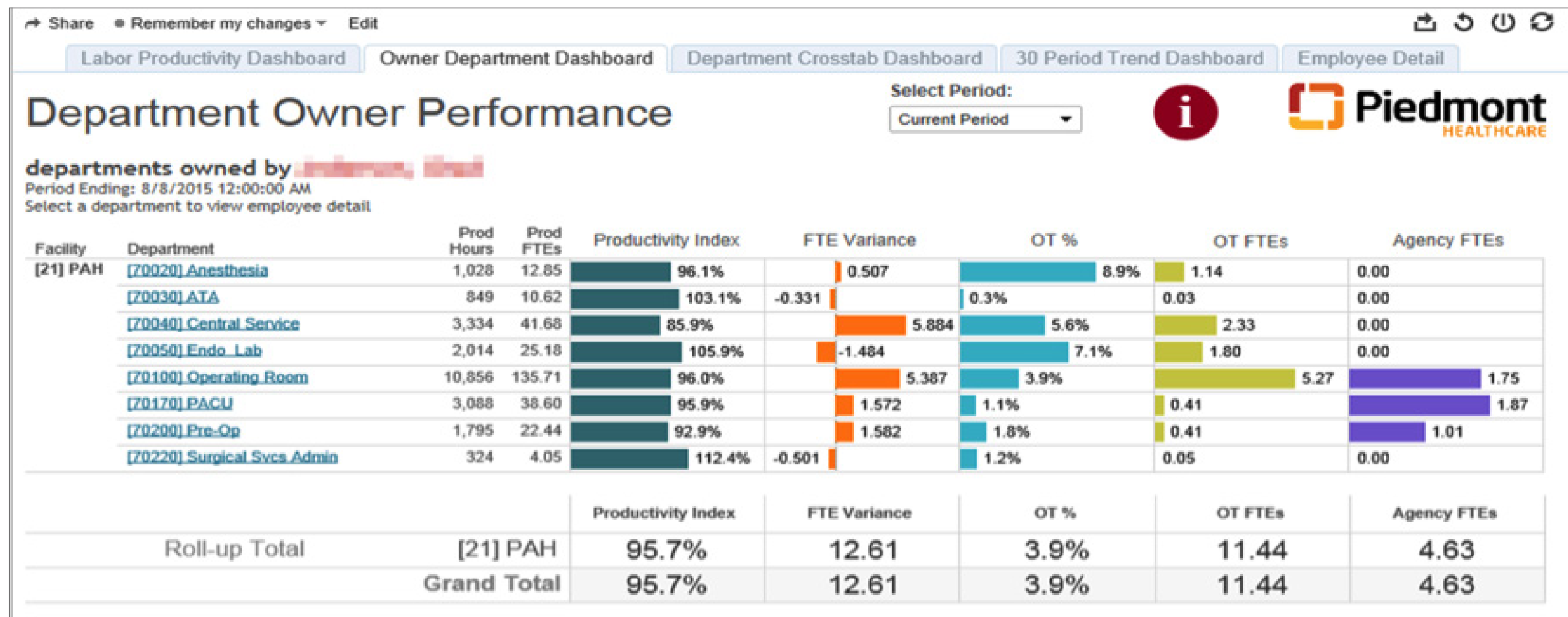
Piedmont Healthcare, a five-hospital nonprofit healthcare system with more than 1,600 medical employees and affiliate physicians, lacked a productive scheduling system and struggled with declining labor productivity

Accessing right-time data has helped Piedmont Healthcare reorganize schedules and pivot.

“We were able to cut out a third-party physician-consulting service and some additional third-party work that was being done on the weekends. That, in total, saved us a little over \$2 million a year,” Jackson says.

Standardization of staffing with real-time data allowed physicians to focus their attention on one patient-centered activity at a time. Piedmont has seen a 50-percent improvement in its variance from benchmark lengths of stay, and a 10 percent reduction in readmissions.





This labor productivity dashboard at Piedmont Healthcare tracks productivity, the FTE variance, and agency spend across hospitals and departments.

Aggregating and blending data to uncover inefficiencies in the supply chain

Healthcare organizations accumulate massive amounts of data that's stored in silos across the entire enterprise. These silos make it difficult to spot savings opportunities in the thousands of daily supply chains. Connecting these islands of information is key to understanding the big picture and making smarter buying decisions. The ability to aggregate and blend data on a common field is key.

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We've drastically reduced the annual total number of rushed special orders, and our fill rates—inventory fulfilled or available against orders—are in excess of 98 percent with zero excess, expired, or obsolete supplies.

- Jason Klein, Supply Chain Analyst, Seattle Children's Hospital

From drugs and medical devices to equipment and business assets, hospitals have huge inventories to manage. With data disjointed, and supply and demand for thousands of different items always in flux, decision-makers are prone to wild and inefficient purchasing (known as maverick-buying) outside of the standard processes.

Dashboards created with data from multiple sources will generate more truthful visuals and offer 360-degree assessments of supply chains in specific areas like operating rooms and emergency departments.



After connecting to all of the supply chain data—strategic sourcing, spend, procurement, and inventory—healthcare providers can easily spot outliers, surpluses, expired drugs, and potential stockouts without second-guessing their decisions or wasting money.

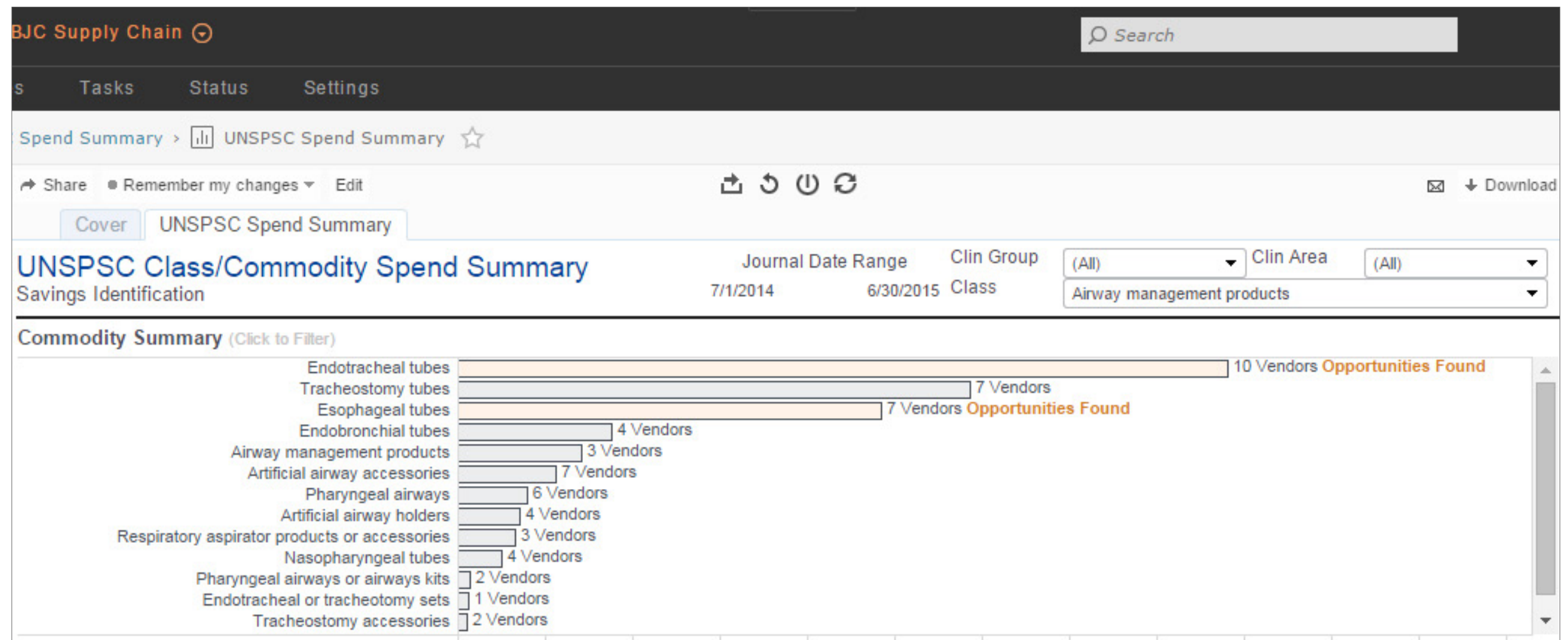
Barnes-Jewish Healthcare (BJC), an 11- hospital network with more than 1,300 beds, lacked visibility into its own inventory supply chain strategy. BJC had one single employee performing supply-chain analysis in Excel. Without a fast and easy way to identify cost savings opportunities, the approach was costing BJC millions in time and money.



By aggregating and visualizing all of the data, BJC reduced supply-chain spending by more than \$200 million over four years. By identifying rogue-buying patterns, BJC found \$1.9 million annual savings across five major spine-supply vendors, and \$560,000 annual reduction in medical-device costs for cardiac supplies.



BJC uses a centralized dashboard to monitor, track and improve performance against targeted supply chain cost savings annually.



This spend summary identifies opportunities for rationalizing suppliers at the SKU level to enable strategic sourcing and minimize maverick buying for hospitals and departments.

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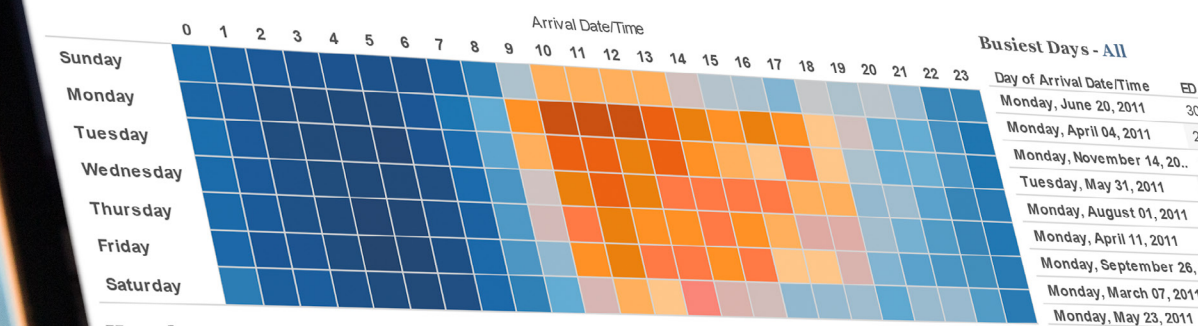
Every one-percent reduction in supply spending is equal to hiring 500 full-time equivalent caregivers. With our Supply Plus Initiative and data visualization, BJC Healthcare has saved \$212 million on supply chain spending over the past four years.

- Lynn Kersting, Strategic Supply Chain Manager

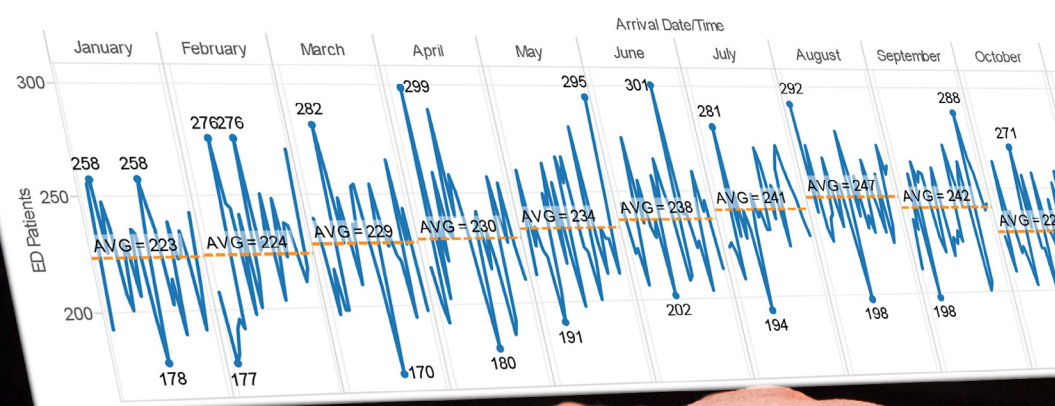
Automating ad hoc visual analysis for better revenue cycle management

Arrival Summary

When do ED Patients Arrive? Click to Filter



How does Daily ED Volume Fluctuate Over Time - All



Spreadsheets are the wrong tool for ad hoc financial reporting in healthcare. Too often, mistakes are made at the expense of efficiency, accuracy, and even thousands of hours of lost time.

Augmenting financial analysis with automated data visualization can take a four- hour process involving many tools and high-level expertise and turn it into a four- second query.

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Personally, I can say I've increased my efficiency probably 80 to 90 percent—and that's just time to initial insight. And I can fully automate that insight going forward.

- Mark Jackson, Piedmont Healthcare



Watch this video to learn more about how the University of Michigan Health System uses data visualization to automate reporting and save thousands of hours and dollars.

The University of Michigan Health System (UMHS), a three-hospital and 40-outpatient hospital network, used to manage a large, archaic billing system with spreadsheets.

To produce reports, UMHS staff either had to do the coding themselves or pay large fees to an outside vendor. And the final output was often late or incorrect. UMHS needed a better and faster way to get the reports they needed—and it wanted control over their own financial and revenue systems.

By automating visual reports, the UMHS financial teams have saved over 5,000 hours on four different projects within a single year.

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Data visualization allows us to quickly automate processes that used to take thousands, literally thousands of hours, into seconds.

- Jonathan Greenberg, IT Director, UMHS

Successfully adopting the Accountable Care Organizations (ACO) model, complying with new healthcare-industry mandates, and maximizing reimbursements all requires operational excellence.

Monitoring, measuring, and analyzing data to improve patient safety, care quality, operational costs, and compliance is easier than you think. And integrating self-service data visualization into your healthcare operations and processes is even easier.



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Overall, Tableau has helped us capture efficiencies and process improvements that we estimate to be valued at tens of millions of dollars.

- David Delafield, CFO of Swedish Medical Group

About Tableau

Tableau helps people see and understand their healthcare data no matter how big it is, or how many systems it is stored in. Quickly connect to any data, analyze, and share insights to reveal hidden opportunities that impact each patient, and your entire organization. With a seamless experience from the PC to the iPad, ask and answer deeper operational questions with expressive, interactive dashboards—no programming skills required. Start your free trial today.

[TABLEAU.COM/TRIAL](https://tableau.com/trial)

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The way Tableau approaches data, and visualizing data, is the way my mind works. What it lets me do is really move at the speed that I can think about things.

- Jonathan Drummey, Quality Management Data Analyst, Southern Maine Medical Center

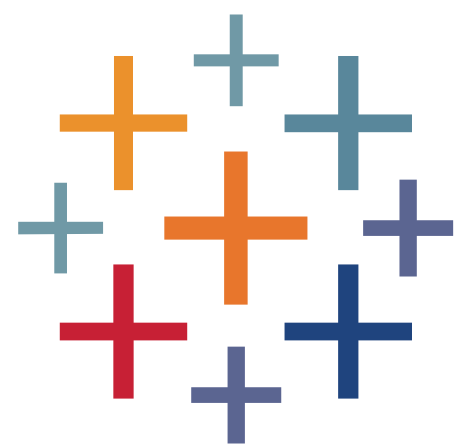


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About the author

Andy Dé is the industry strategist and solutions leader for healthcare and life sciences at Tableau. He has more than 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.



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