



## Charter Solutions, Inc. Improves Large Health Care System Data Visualization

“These new reports will drive even greater business decisions and will help inform current and future strategy.”

- CLIENT EVP

“I think the Cardiology Front Page does a great job of highlighting patient / procedure volume trends. I also believe users will like the option to filter the Surgery Analysis stats down by specific provider per year. Good job”

- CLIENT CLINICAL  
INFORMATICS LEAD

### Client

The client is a major healthcare system focused exclusively on children. Their mission is to inspire hope and promote lifelong health by providing the best care to every child. They achieve this through a 200+ bed hospital, a group of outpatient centers, a management services organization, and an ambulatory surgery center.

### Challenge

Across the health system, leadership wanted easy access to data to inform decision making, monitor performance, and provide a line of sight into improvement efforts. The hospital President & COO needed an analytic system to underpin his strategic initiative to advance data-driven decision making. However, most reporting was pre-filtered using point-in-time data, and built to answer pre-determined questions. An investment in Tableau products was constrained by limited resources with the needed advanced dashboard development and analytics skills.

### Solution

The client had selected Tableau as the platform for this effort, but needed help defining the approach, laying the foundation, and accelerating delivery. They turned to Charter Solutions for our expertise in Tableau and strong healthcare domain knowledge. Integrated into the BI Delivery team, our consultants overhauled the entire BI Portal to deliver health system-wide visuals for operational and financial performance, and to be the main point of entry to Tableau dashboards and other reporting and analytics tools. We worked with service line leaders from across their system, including neurosciences, cancer, orthopedics, and heart care, to develop a suite of dashboards for each service line. Dashboards ranged from an executive level front page to monitor KPIs and key service trends, to deep-dive analysis dashboards focused on specific clinical or operational topics such as Observation Cases, Surgical Case Load, Global Footprint of Cardiac Care, Diagnostic Test Volume, and Referral Network Performance.

### Technology

The Charter Solutions consultants helped enhance and optimize the use of Tableau Server to allow direct access to data in a visual and interactive way. Standardized data sources were designed, built and published for financial and clinical metrics, combining data from multiple Oracle and Microsoft SQL Server databases including the client's enterprise data warehouse, Cerner's PowerInsight and Allscripts EPSi. Source systems included electronic health records, scheduling books, billing, and financial reporting systems from Cerner and Lawson. Our consultants provided guidance to optimize data structures for use with Tableau. They offered recommendations to improve BI delivery processes, and advice on Tableau best practices. The Charter Solutions consultants built numerous templates, designed and documented UI/UX standards, and developed visual design patterns for use with Tableau Desktop.

### Benefits

The dashboards we delivered, combined with the self-service capabilities of Tableau, gave executives and service line leaders easy access to data to inform their decision making. Analysts could form questions on the fly, and let the data guide their journey to answer the who, what,



## Children's Health System

and why. The new BI Portal allowed staff across the health system to see key metrics and trends, delivering a new level of operational transparency.

The client was going through a time of significant change in their technology footprint – several systems were going through major upgrades or being replaced with different vendor solutions. Using published Tableau data sources provided a degree of separation so that the visuals were insulated from the system changes – only the published data sources had to be refactored.

Enhanced delivery processes and standards increased the BI Delivery team output, enabling them to respond more quickly to requests, and deliver faster time to value. Reusable data sources accelerated dashboard development, drove consistent business rules across the team, and laid the foundation for web authoring. Templates and design patterns provided a consistent user experience, and allowed complex and advanced techniques to be used by less experienced staff.