QlikView Advances Quality Improvement and Outcomes Reporting at Texas Children's Hospital

"QlikView is one of the few solutions Texas Children's Hospital has acquired that actually did what it promised it would do. It has really delivered. Employees from all corners of the organization are amazed at how easy it is to access useful information, demonstrating the correlation between data and quality improvement."

– John Henderson, *director of Enterprise Systems, Texas Children's Hospital*

Overview

Texas Children's Hospital is a not-for-profit organization whose mission is to create a healthier future for children and women throughout a global community by leading in patient care, education and research. Texas Children's is an internationally recognized, full-care pediatric hospital located in Houston and is one of the largest freestanding pediatric hospitals in the country. The hospital continues to garner widespread recognition for its expertise and breakthrough developments in the treatment of pediatric cancer, diabetes, asthma, HIV, attention-related disorders, organ transplants and cardiovascular disorders; premature babies; fetal surgery; and high-risk pregnancy.

With a vast network of healthcare professionals working together to deliver optimal care, Texas Children's needed a comprehensive system that could bridge the gap between all the groups across the enterprise and unify them. Further, the organization implemented an EMR system, increasing the amount of data employees were inundated with. "Our Information Technology Team became a reporting factory, and we had a hard time keeping up

with demand," said John Henderson, director of Enterprise Systems at Texas Children's Hospital. "We had various methods of reporting, yet lacked any real governance or understanding of what we were looking at and by the time we figured it out, the data was stale. Our organization craved more useful information to make better decisions and also needed a central mechanism to house that information and make it available to everyone in the organization."

In order to turn its data into meaningful insights, Texas Children's implemented QlikView, Qlik's Business Discovery – user-driven Business Intelligence – platform across the enterprise. "It was like Christmas," said Fran Kelly, director of Quality and Safety at Texas Children's Pavilion for Women. "The deployment was seamless, and people from all corners of our organization were discovering things about their work that they didn't think was possible. Qlik highlighted the need to improve our source systems and visualize our data in useful and effective ways."

Improved Patient Outcomes

Once fully integrated, Texas Children's began using QlikView in very specific ways. For example, the solution was used to take a deeper look at hospital acquired conditions among patients. "We've built apps through QlikView that analyze the types of children that acquire these conditions and the successes and failures of preventing or minimizing occurances," said Terri Brown, assistant director of Clinical Outcomes and Data Support in Quality at Texas Children's

90 days
to develop QlikView applications

70 applications
and approximately 1,000 users

Hospital. "Armed with an understanding of the common characteristics of children who encounter these harms during hospitalization, we work very closely with our Clinical Process Improvement Teams to hone in on how we can improve quality of care and take preventative action. Further, we are able to analyze patient's admission and readmission rates to gauge how effective our interventions are."

To that end, one of Texas Children's most effective QlikView applications specifically looks at the readmission of pediatric asthma patients. "Our ER is a high volume department. The goal of this application is to look at how each patient in the ER with asthma is being treated and analyze readmission rates to conclude how effective the treatment plan really was," said Brown. "Further, we have reduced the number of chest x-rays ordered by approximately 30 percent because we are now able to identify when they are not actually needed."

The QlikView application has also enhanced Texas Children's ability to evaluate care provided to its pediatric diabetic patients. It was discovered that the number of diabetes patients receiving medication within two hours of being triage was lower than their standard. The organization developed an improvement statement and the problem was quickly corrected.

"The impact of QlikView on the improved understanding and meaning of data extends beyond clinical outcomes," said Kathy Carberry, director of the Outcomes & Impact Service at Texas Children's. Our length of stay time was longer than desired, and so a streamlined discharge protocol was implemented which dramatically improved our system efficiencies. We also implemented a better process for how surgeons documented what procedures occurred in which operating rooms. This optimization allowed for better capture of activity and location, as well as infection occurances."

In addition to supporting pediatric care

initiatives, QlikView is utilized for Texas Children's pregnancy quality and outcomes work, "allowing the interprofesional team to evaluate performance on fundamental quality measures." said Kelly. "This information empowers us to make changes where needed. For example, using QlikView showed us our rate of administering a full course of antenatal steroids (which help to mature the lungs in premature babies) to women who were at high-risk of delivering between 24 and 32 weeks of gestation was much better than initially estimated. This realization then helped us to increase the percentage of discretely captured data which supports the administration of this important drug. Having documentation of a job well done is significant in our industry."

A New Culture

"Organizationally, we've undergone a huge shift," said Brown. "All teams across the organization understand the power of data and believe that what we do for our patients can be dramatically improved with this system.

Further, "Qlikview has greatly improved operations, business and decision support," said Henderson. "Our Labor Productivity App is one of our most effective. This app is designed to provide staffing information against budget, and pulls from our time tracking system. Our leadership team can now strategically staff the hospital so that we are not wasting resources and are optimizing employee time and skillsets."

"QlikView has transformed our care by empowering our people," said Carberry. "Our IT partners are working with us, not seperately from us, and we have a completely new organizational structure and paradigm. At last, we have a solution that bridges the gap and forges partnerships between all teams across Texas Children's, working effectively together to provide unrivaled patient care."

"QlikView has enabled our clinicians and administrators to see *exactly* how we are treating patients and the outcomes. Implementing change isn't always easy, but now we have the solutions and data to drive improvement. QlikView is the 'siren of data' this organization really needed and we have completely transformed our culture."

– Kathy Carberry, *director, Outcomes & Impact Service, Texas Children's Hospital*