

Improved Data Access Drives Effective Care Delivery



Texas Children's Hospital®



HEALTHCARE ORGANIZATION

Academic Medical Center

PRODUCTS

- Health Catalyst® Analytics Platform and robust suite of analytics applications

SERVICES

- Professional Services

EXECUTIVE SUMMARY

The role of data in healthcare is critical. Despite this, end users often have trouble accessing the meaningful data they need to understand care delivery and drive improvements. Many organizations still limit data access and sharing among end users, especially in larger healthcare organizations.

Texas Children's Hospital, a top-ranked, internationally recognized children's hospital, knew that improving data access was key to driving improvements and sought to improve analytics adoption and democratize its data. By focusing on developing a culture of data access and sharing, Texas Children's has shifted its data and analytics culture, establishing the foundation required for it to continue to advance its analytics adoption, including engaging in predictive analytics. Leaders and employees are actively investigating and sharing data, and operations are more data-driven than ever before. Texas Children's has achieved the following:

- 25 percent growth rate in the number of analytics users in just one year.
- 81 percent relative improvement in turnaround time for new report requests.

THE IMPORTANT ROLE OF DATA IN HEALTHCARE

Digital information—data—plays a critical role in healthcare from a care delivery and business perspective. Despite this, meaningful data is often unavailable to end users, as many organizations limit employees' access to the data required to improve outcomes and reduce costs.¹

Texas Children's, located in Houston, Texas, is a not-for-profit organization whose mission is to create a healthier future for children and women globally by leading in patient care, education, and research. Texas Children's is consistently ranked



By creating a culture of data advocacy and data democratization through self-service tools, all users benefit from having access to additional information which allows them to gain new insights and context based on their own curiosity which may not have been possible in the past.

Warren Boudreau, MSN, RN
Director, Quality Outcomes
and Impact Service
Texas Children's Hospital

among the top children's hospitals in the nation. In order to continue to provide its patients with the best possible care, Texas Children's sought to improve the data access of its clinicians and staff.

OVERCOMING BARRIERS TO UNLEASHING THE DATA

Texas Children's has long been committed to the quadruple aim of improving outcomes, improving the patient experience, reducing costs, and improving the provider experience. With that goal in mind, the hospital was an early adopter of an EMR system. After that, as technology advanced and it seemed that the EMR couldn't meet all of its reporting and analytics needs, Texas Children's implemented the Health Catalyst® Analytics Platform and a robust suite of analytics applications.

Texas Children's leveraged the capabilities of analytics, effectively standardizing vocabularies and patient registries, automating internal and external reporting, reducing waste and unwarranted variation, and engaging in some population health management and use of suggestive analytics. While the organization made substantial progress, it began to encounter difficulties in its endeavors to advance its analytics adoption, including its abilities to provide broader access. Texas Children's was not advancing as quickly as desired when it came to data democratization, limiting its ability to perform more robust predictive analytics, personalized medicine, and prescriptive analytics.

Improving analytics adoption at Texas Children's would require overcoming some roadblocks. When individuals wanted access to data and analytics, they would often request that a new visualization be built which would sometimes require months of development time as the analyst and requestor worked back and forth to clearly define the request.

Conversations about improving access to data and analytics including data governance within the organization were occurring, but the perception around data governance led many to believe the organization was instead locking data down, not improving access. Texas Children's needed to shift this perception to advance its analytics adoption and unleash its data, enabling the use of its most valuable data to improve outcomes and reduce costs.

“Categorizing users based on the type of data they need access to and educating them on the most appropriate data tool that can meet their requirements was key. While data sharing and access are encouraged, you must match the user with the tool that provides relevant information at their level of understanding.”

Warren Boudreau, MSN, RN
Director, Quality Outcomes
and Impact Service
Texas Children's Hospital

DATA SHARING DRIVES ANALYTICS ADOPTION

Texas Children's leverages the Health Catalyst® Analytics Platform and a robust suite of analytics applications as the foundation for its data and analytics structure. The data platform integrates more than a dozen source systems, providing easy access to a variety of complex data sets, and the ability to correlate cohort data from various source systems.

With its data and analytics foundation established, and sound data governance, security practices, and training in place, Texas Children's flipped its governance discussions. Rather than focusing on what users can't have, Texas Children's now focuses on giving the right access to the right people, enabling widespread use of data for improvement initiatives.

To facilitate this, Texas Children's established a data operations team, with representatives from across the organization, to leverage its data platforms and maximize the use of these platforms among its various users, including clinical leaders, business leaders, physicians, and nurses. The organization developed a “front door” for data and analytics, placing training resources, request forms, and links to all of its analytics tools online in one location. New and existing users are able to go to the “front door” and investigate the available resources, and from there ascertain if existing tools will meet their data and analytics needs, or if they need to initiate a new request. The processes for requesting data and obtaining access to reports is incredibly transparent. Users are encouraged to use the “front door,” rather than “back door” workarounds that may have been used in the past.

Investing in improving data advocacy and literacy

Texas Children's has taught its analysts how to better communicate with clinical teams and has improved the data literacy of both its clinical and operational teams, enabling them to ask more sophisticated questions. The organization is growing its data science capabilities and has changed its hiring process to accommodate the growth. When hiring into analytics positions, the organization now looks for analysts who understand the business problem and can partner with clinical leaders to define the clinical or operational problem the organization needs to solve.



We are now in the predictive phase in our data journey—focusing more on predictive analytics and collecting data beyond what's in the EMR. We're starting to talk about sensors, wearables, and other technologies that have valuable data. We're focusing more on data science, and building a foundation to collect and access data that we don't even know exists yet.

Ashok Kurian
Director, Analytics and
Data Integration
Texas Children's Hospital

Texas Children's serves up data for each of its user types:

- **Data tourists:** High-level users who want summary data, such as volumes, census reports, aggregated, and run charts to visualize performance over time are provided access to the visualizations they need.
- **Data farmers:** Users, such as physicians, nurses, and quality improvement teams, who need to ask questions about the data, need to investigate hunches, or define a patient population are provided easy access through various analytics applications that allow them to validate and drill into patient-level detail without having to sort through rows and rows of data.
- **Data miners:** These users have the skills required to interact with the data platform and data directly. Texas Children's supports them in applying the tools they prefer to directly query the data platform.

When presented with new requests from one of these groups of users, Texas Children's seeks to develop a solution that will meet the needs of many, rather than only one user. For example, Texas Children's needed to develop an application to coordinate care more efficiently across its system. The organization developed a single application for all Texas Children's entities to use. The care coordination patient stratification analytics application was built on top of the data platform, and it includes data from five different source systems, including several EMRs, pharmacy, and claims data. The source systems feed data into the data platform, where the information is bridged into a master patient list.

Texas Children's can risk-stratify all patients within its system based upon their care coordination needs. Analytics users are able to view three groups of patients: Texas Children's System patients, Texas Children's Health Plan patients, and Texas Children's Health Plan patients seen in the system. The analytics application selects all active patients in the system based on the last 12 completed months of rolling data and looks for specific diagnosis and national drug codes in order to determine each patient's chronic illness and disability payment system score as a marker for patient acuity and stratification. Patients are categorized from the highest acuity (tier one) to the lowest acuity (tier four), which represents their level of care coordination needs (see Figure 1).

FIGURE 1. CARE COORDINATION PATIENT STRATIFICATION ANALYTICS APPLICATION VISUALIZATION

- 1 Tabs for selecting content area of interest.
- 2 Filters for selecting data of interest.
- 3 TCH and TCHP utilization by tier within the last 12-months.

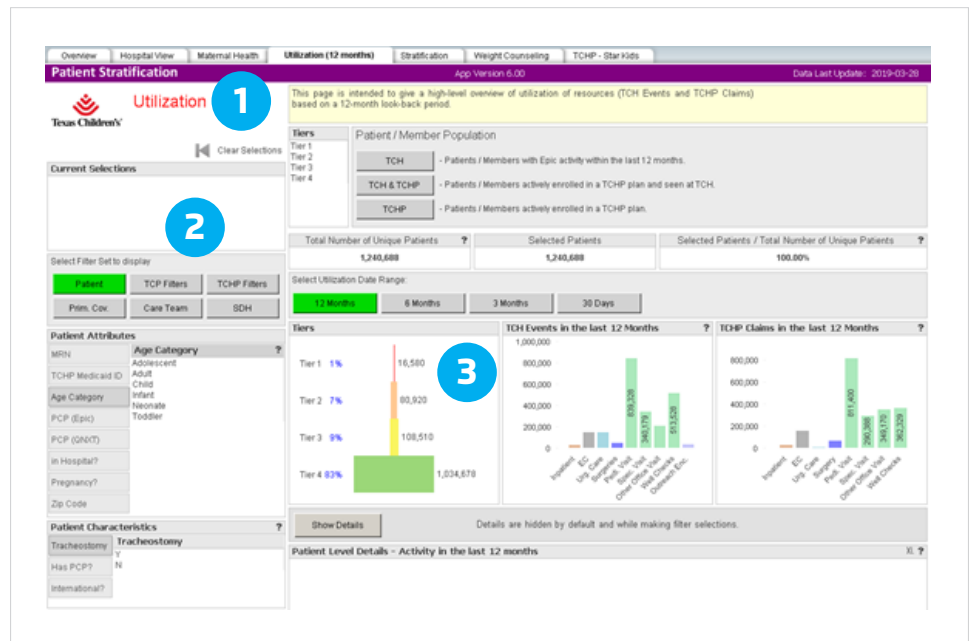


Figure 1: Care Coordination Patient Stratification Analytics Application visualization

With the analytics application, Texas Children’s can now understand the medical complexity and utilization of its patient population, which has helped drive focused improvement. The analytics application serves as a platform to understand Texas Children’s patient population, including acuity, and resource consumption such as admissions, emergency center visits, urgent care visits, surgeries, outpatient visits, and more. Many improvement initiatives at Texas Children’s have utilized the analytics application to tailor interventions to assist patients and improve the efficiency of care delivery.

RESULTS

Texas Children’s has shifted its data and analytics culture, establishing the foundation required to continue to advance its analytics adoption, including engaging in predictive analytics. Leaders and employees are actively investigating and sharing data. Operations are more data-driven than ever before. As a result, Texas Children’s has achieved the following:

- 25 percent growth rate in the number of analytics users in just one year.
- Nearly 20 percent of the organization routinely accesses data from the analytics platform each month.

- 81 percent relative improvement in turnaround time for new report requests.
 - Improved data literacy has increased the effectiveness of collaboration between clinical leaders, business unit leaders, and clinicians. Analysts are now able to meet report requests within 15-days.

WHAT'S NEXT

Texas Children's plans to further its analytics adoption by continuing to advance the effective use of predictive analytics, prescriptive analytics, and personalized medicine to improve the health of the women and children it serves. 🌟

REFERENCES

1. The Office of the National Coordinator for Health Information Technology. (2018). *2018 report to congress – Annual update on the adoption of a nationwide system for the electronic use and exchange of health information*. Retrieved from <https://www.healthit.gov/sites/default/files/page/2018-12/2018-HITECH-report-to-congress.pdf>

ABOUT HEALTH CATALYST

Health Catalyst is a leading provider of data and analytics technology and services to healthcare organizations, committed to being the catalyst for massive, measurable, data-informed healthcare improvement. Our customers leverage our cloud-based data platform—powered by data from more than 100 million patient records, and encompassing trillions of facts—as well as our analytics software and professional services expertise to make data-informed decisions and realize measurable clinical, financial, and operational improvements. We envision a future in which all healthcare decisions are data informed. Learn more at www.healthcatalyst.com.

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