HealthCatalyst
ignite outcomes improvement

Improving Healthcare Provider Productivity with Advanced Analytics

Texas Children's Hospital®

HEALTHCARE ORGANIZATION

Children's Hospital

TOP RESULTS

- $20M physician services operational savings
- 15 percent increase in provider productivity
- Up to 39 percent increase in revenue per clinical FTE
- 90 percent reduction in RVU reporting efforts

PRODUCTS

- Late-Binding™ Data Warehouse Platform
- Advanced Application Suite
  - › Provider Productivity and Practice Management
- Instant Date Entry Application (IDEA)

SERVICES

- Installation Services
- Clinical Improvement Services

Improving productivity in our healthcare system—and thus decreasing costs and increasing access to care—is one of the most important tasks facing health systems today.[1,2] Delivering the highest quality care to a broader population of children is the top priority of Texas Children's Hospital, a not-for-profit organization consistently ranked among the top children's hospitals in the nation. Between its hospitals, affiliated practices and health plan, Texas Children's manages more than one million patient encounters each year.

In a difficult economic climate, Texas Children's leaders recognized that the organization would have to significantly reduce costs at the same time as it enhanced quality and patient access. To achieve this goal, they launched a system-wide initiative to generate $74 million in operational improvements. As part of this initiative, they determined to achieve a $20 million improvement in physician services through optimal practice management and enhanced physician productivity. By improving provider productivity, the health system could provide more services to more children while also maintaining a solid bottom line.

MEASURING PROVIDER PRODUCTIVITY ACCURATELY

Improving provider productivity requires extensive analysis to identify potential areas of improvement. To analyze and assess productivity, Texas Children's relies on a unit of measure called work Relative Value Units (wRVUs), using the RVU reimbursement table developed by the Centers for Medicaid and Medicare (CMS).[3] wRVUs are

> " It was frustrating to think about how much time and effort people were spending on gathering data and generating reports. They spent so much time on these tedious, manual tasks that they didn't have any time to absorb the information and assess what it could mean for driving strategic change. By bringing the information a few clicks away in a common platform, we've eliminated that manual work. This frees up valuable personnel to use their expertise to improve our organization's performance. And it puts the data in front of clinicians so that they, too, are more engaged in improving performance. "

Mark Mullarkey
Senior Vice President

numbers assigned to services that establish the differing amounts of provider effort and expertise associated with a clinical care event.

Determining productivity objectives based on wRVUs and then tracking performance against those objectives requires the health system to account for several variables. Health system leaders use national benchmarks to set individual provider wRVU targets and ensure competitive compensation. They must also track how many clinical FTEs they have when determining productivity objectives. In addition, they assess the amount of time each provider allocates to four categories of work—clinical care, academics, research and teaching. A physician who has a substantial teaching or research component to their position will have a lower wRVU target.

Texas Children's budgeting process includes a monthly forecast of wRVUs that accounts for the estimated number of patients that practice managers expect to see to inform the wRVU forecast calculation. Health system leaders monitor progress against the forecast on a continuous basis and intervene when necessary to ensure the wRVUs are on track to achieve the target.

Needless to say, analyzing provider productivity requires sophisticated analysis. However, Texas Children's existing analytical process was far too labor intensive to support good and efficient decision-making. In the effort to assess provider productivity, practice managers were required to access multiple databases on an ongoing basis to gather the data required to calculate wRVUs. Data that needed to be routinely gathered, integrated and analyzed to assess the productivity of each provider included:

- Time-tracking information (amount of time spent in clinical care, academics, research and teaching gathered from an external database at the Baylor College of Medicine)
- EHR data
- Clinic schedule data
- Billing data
- Benchmarking data from an external vendor

The effort was resource intensive and time consuming. In fact, it took four weeks to obtain the necessary wRVU data. To compound matters, the resulting reports lacked a common look or feel. Each report was unique to the practice administrator, revenue cycle manager or data analyst that produced it.

This complicated, time-consuming and inconsistent process made it very difficult—and sometimes impossible—for leadership

to understand where physicians' productivity and associated compensation stood compared to their peers internally and nationwide. Although Texas Children's has a very strong culture of transparency, section chiefs and administrative leaders often did not have access to the data they needed to effectively lead and manage in their areas of responsibility.

A SINGLE SOURCE OF TRUTH AND AUTOMATED PROCESSES FOR ASSESSING PRODUCTIVITY

To realize their operational efficiency, productivity and revenue goals, Texas Children's implemented a late binding enterprise data warehouse (EDW) platform and healthcare analytics applications from Health Catalyst. The EDW integrates data from sources like the health system's electronic health record (EHR), financial systems and operational systems, as well as from external sources such as the Baylor College of Medicine, to create an enterprise-wide, integrated, single source of truth to inform clinical and operational decisions.

FIGURE 1: PROVIDER PRODUCTIVITY SUMMARY TAB SAMPLE VISUALIZATION

1. Percentile distribution for wRVUs filtered by section versus national benchmark
2. Provider wRVU compared to national benchmark and section
3. Ability to filter by section, date, providers, etc.

Figure 1: Provider Productivity summary tab sample visualization

Texas Children's also implemented a suite of analytics applications—designed specifically to measure provider productivity—that pull near real-time data from the EDW. Through the application, section chiefs and operational leaders have routine and easy access to near real-time data and visualizations that enable them to assess

FIGURE 2: PROVIDER PRODUCTIVITY WRVU SAMPLE VISUALIZATION

1. Percentage of providers and FTEs allocated to clinical care

2. wRVU versus monthly and FYTD budget performance

3. Trended wRVU versus budget and prior year

4. Ability to filter by section, specialty or provider

productivity and compare providers to one another internally and to national benchmarks. This insight helps ensure that compensation is commensurate with work effort within specialties. Application users can filter by section (e.g., cardiology) and down to the individual provider (Figure 1).

The application allows users to drill into a physician's or group's performance, pinpoint opportunities for improving productivity, or discover the reasons behind differences in productivity. For example, an analysis might reveal that a physician has only been employed at the health system for a year and is still ramping up, explaining lower productivity. Likewise, a more accurate assessment of how a physician is allocating her time between clinical care, academics, research and teaching could explain an apparent low level of productivity.

The solution also streamlines the budgeting process. Each year, health system leaders establish a wRVU forecast. In the past, they would track actuals against the budget on a monthly basis. Now, the EDW enables them to compare overall RVUs to the budget in near real-time (Figure 2). They can promptly identify any deviation from the forecast, drill down into the data to determine the root cause and then implement an effective solution. For example, one analysis determined that a specific clinic location exhibited a higher than average no-show rate, which was negatively impacting productivity. Scheduling changes were subsequently made to allow the providers to be more productive.
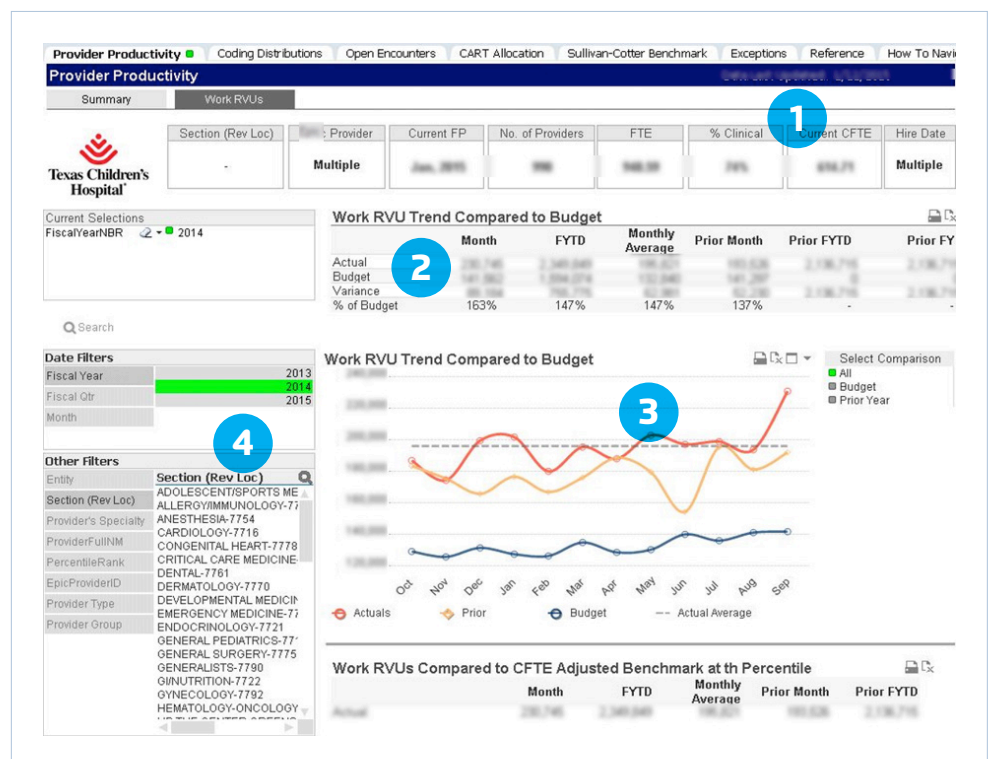

Figure 2: Provider Productivity wRVU sample visualization

> "Because so many of our physicians split their time between Texas Children's and Baylor College of Medicine, it is has been a challenge to define expectations for and measure physician productivity. We have some physicians and faculty members who primarily see patients, others who do more research, and still others who have a large teaching component. In working through this process of measuring productivity, we had to answer the question: How do we weigh these components and treat everybody fairly in a system as complex as ours with so many different models of employment? Having accurate data on hand that we can trust has proven essential to performing this task well."
>
> Dr. Gary Clark
> Chief of Neurology

With the integration of external benchmarking data in the EDW, Texas Children's can more easily establish targets to improve productivity. Leaders are now able to track and assess progress towards closing wRVU gaps between the health system's performance and a benchmark, which in turn can drive improvement to the bottom line. In fact, Texas Children's calculates that closing this gap translates to a $55 million net revenue opportunity.

Finally, the number of clinical FTEs is now more accurate, since leaders have better visibility into how providers are allocating their time between clinical care, academics, research and teaching. For example, in pediatrics an initial estimate of approximately 500 FTEs was revised downward to 300 FTEs due to the academic, teaching and research work efforts the actual clinical FTEs are involved in. This type of assessment is essential for calculating the actual level of clinical productivity.

RESULTS

As a result of its overall data-driven "Delivering on the Vision" (DOTV) initiative, Texas Children's has improved operating margins by $74 million to date by improving quality, increasing system-wide efficiency, eliminating workflow waste and lowering costs. The health system attributes an estimated $20 million of this savings to improved performance in physician services.

These improvements include:

- Many improvements in appointment scheduling and practice management

- A 15 percent improvement in provider productivity. A significant portion of the $20 million savings stems from providers being more productive as a result of seeing more patients. The department of surgery alone realized a 39 percent increase in revenue per clinical FTE. The ability to measure how much time each individual physician spends on clinical care (as opposed to academics, research and teaching), has enabled leaders to more accurately assess and manage productivity.

- 90 percent reduction in RVU reporting efforts. Significant improvements in acquiring timely, actionable information required for physician engagement and good decisions. Texas Children's has automated what once was a month-long manual process that involved dozens of practice managers, data analysts and revenue cycle managers gathering, validating, integrating and analyzing data. This manual work effort has been reduced to just a few hours per month—representing a greater than 90 percent improvement. Use of a common

platform not only saves time; it has also resulted in a common look and feel across the different specialties, making it easier for health system leaders to digest the information.

- Better engagement with providers. With the transparency the EDW brings, physicians now trust the data showing the allocation of their time between clinical care and other duties. Section chiefs are able to have honest, objective and data-driven conversations with providers concerning their productivity, thereby reducing frustration and mistrust on the part of providers.

WHAT'S NEXT

Texas Children's will continue to build a culture focused on data-driven improvement, accountability, engagement and responsible change. The hospital will maintain its initiative for optimizing practice management and provider productivity. At the same time, it will also turn its attention to operational improvement in other areas such as finance and revenue cycle management. ◈

References

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ABOUT HEALTH CATALYST

Health Catalyst is a mission-driven data warehousing, analytics, and outcomes improvement company that helps healthcare organizations of all sizes perform the clinical, financial, and operational reporting and analysis needed for population health and accountable care. Our proven enterprise data warehouse (EDW) and analytics platform helps improve quality, add efficiency and lower costs in support of more than 50 million patients for organizations ranging from the largest US health system to forward-thinking physician practices.

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