Unlock your hospital's potential: Establishing a starting point for data analysis

In 2012, Vivian Lee, senior vice president for health sciences at the University of Utah, asked a group of senior managers and physicians to find ways to reduce spending at the academic medical center in Salt Lake City, which consisted of four hospitals and 1,330 physicians. Lee was shocked to learn that no one knew the costs associated with patient care or how to minimize them.

U.S. hospitals make up the largest portion of the $2.7 trillion spent nationally on healthcare, yet very few administrators know what it costs to care for the patients they admit. Lee's discovery was not out of the ordinary, but it did help her realize that the medical center needed an effective data analysis infrastructure to evaluate where and how money was spent so administrators could find ways to improve hospital performance and save money.

Any hospital, clinic, or healthcare facility lacking a reliable and effective data infrastructure is missing out on the opportunity to gather unique insights into the facility's strengths and weaknesses — findings that could lead to significant improvements for nearly every department.

How data analysis infrastructures work for you

The changing healthcare landscape presents a number of new challenges for hospitals. Administrators now deal with everything from preparing for hospital-wide use of mobile devices to learning how to share data while complying with HIPAA. They also have to worry about cutting costs while improving patient care and reducing readmission rates to avoid hefty fines.

The growing interest in predictive medicine has placed an even bigger financial burden on hospital administrators. With more and more patients moving toward accountable care contracts, providers are at a greater risk for losing money if they fail to get business and procedural costs under control.

What few hospital administrators understand is that establishing a better data analysis infrastructure can aid in many of those overwhelming tasks. It can improve business intelligence, manage costs, increase speed and efficiency of business procedures, improve staff education practices, and facilitate effective information sharing. On top of that, it can increase patient, partner, and staff satisfaction.

Once Lee understood the importance of devoting time and energy to rounding up data and putting it into a useful infrastructure, her hospital system was not only able to cut $2.5 million from a $1 billion budget in the first year, but it also effectively educated all employees on the costs associated with quality patient care. Now the Salt Lake City academic medical center is one of the few in the nation that can track cost and quality for every one of its 26,000 patients.

But it certainly isn't the only medical center to benefit from collecting data and building an infrastructure. In 2012, Rice Memorial Hospital in Minnesota began using data analysis to track pneumonia cases. After interpreting data and making adjustments to patient care plans, the hospital was able to shorten hospital stays for pneumonia patients, lower death rates, and decrease related costs.

On a similar note, Asha Saxena used data analysis to identify key indicators for patients at risk of readmission so it could provide additional support to those patients following discharge. Originally designed for patients with congestive heart failure, the program has now expanded to other high-risk health conditions. This data analysis program has allowed the hospital to lower readmission of high-risk patients and cut costs as well.

Establish a data infrastructure for your hospital

Hospitals of any size or budgetary level can construct effective, usable data infrastructures for specific programs, departments, or the entire facility. It all starts with administrators conducting detailed assessments of current

situations, developing technical architecture to support the data, and determining the best way to deliver the information to users. Here's how you can get the process started:

1. Define your overall business strategies and goals. You need to determine your hospital's overarching goals, including how you'd like to improve or strengthen healthcare services throughout the facility. These goals will guide the data gathering and analysis process.

2. Create a current state assessment. A current state assessment will provide an in-depth look at the hospital's performance and operations. You must answer basic questions about current data collection, including: What regulatory data is being collected? Where is this data being housed? How is this data currently being used? It's crucial to make sure these questions are answered so you don't create new infrastructure around pre-existing infrastructure.

3. Establish best practices for data collection. You have to create guidelines for gathering, analyzing, and reporting your data so the hospital can reach its highest potential. They should be easy to teach and communicate to a wide audience. This will help every team member understand the parameters and expectations for information reporting and sharing.

4. Conduct a gap analysis. Examine how your hospital stacks up against others in the area and across the country. Explore how more focused data collection would help your hospital improve its performance, and establish steps for creating infrastructure around that data.

5. Determine metrics that fit your facility. It's important to look at metrics around finances (e.g., patient/physician profitability and lags in posting charges), operations (e.g., discharges and length of stay), quality (e.g., mortality and readmission rates and resource utilization), staffing (e.g., payroll, overtime, turnover, and absences), and productivity. Focusing on these things will give you a holistic view of how your organization is performing.

6. Share metrics with employees. Hospital staff should pay attention to metrics and goals and use them to hold themselves, their units, and their departments accountable for providing the highest quality of care. To aid in that, employees should have access and repeated exposure to all metrics being recorded so they can improve actions and practices. Access can also help leaders manage those they're directly supporting and spot when they're overstaffed or understaffed.

7. Map out an information delivery system. Decide how you will communicate the data you've gathered and analyzed to your team. There are currently three main options:

- **Self-directed business intelligence and analytics:** The renaissance of increased BI is in the hands of the users, not your IT staff. Give them the ability to discover data and author their own insights.

- **Data visualization:** Visuals can reveal insights that reports might bury, and they're far more helpful than a data dump.

- **Versatile data integration strategies:** Integrating data from multiple sources into one platform is critical. Consider creating a data federation to orchestrate access rather than moving your data around.

It's also best to have support staff in place to analyze and report your findings.

Taking the steps to establish an effective data analysis infrastructure for your hospital can affect everything from patient care and employee education to budget constraints and compliance with state and national regulations. When done well, it will unlock your hospital's potential, allowing your facility, physicians, and administrators to deliver high-quality healthcare.