



# Deborah Heart and Lung Center Optimizes Patient Throughput With MEDITECH Business and Clinical Analytics

## Introduction

Deborah Heart and Lung Center (Browns Mills, NJ) needed a better way to provide executives with timely access to the most current analytics, to support their performance improvement efforts. Using Microsoft® Excel to track metrics manually was time consuming, static, and not always easy to interpret. They resolved to find a more dynamic analytics solution that was less resource-intensive and could provide each executive with the exact information they needed, when they needed it.

## SNAPSHOT

### Opportunity

Provide executives with access to timely dashboard-based metrics to support performance improvement efforts and reduce reliance on static reports.

### Solution

MEDITECH's Business and Clinical Analytics (BCA) Solution

### Benefits

- Deborah can now monitor process improvements as they happen and push statistics out to staff rather than waiting for monthly meetings to evaluate performance.
- BCA led to a sixfold increase in inpatient discharges by 10 a.m., freeing up beds for new patients.
- BCA eliminated the risk of human error associated with downloading reports from other sources and manually compiling data.

### Profile

Deborah Heart and Lung Center is an 85-bed cardiovascular specialty hospital in southern New Jersey. As New Jersey's only specialty cardiac hospital, Deborah treats some of the highest acuity patients in the state. They were recognized as a 2019 CMS Five-Star Hospital.

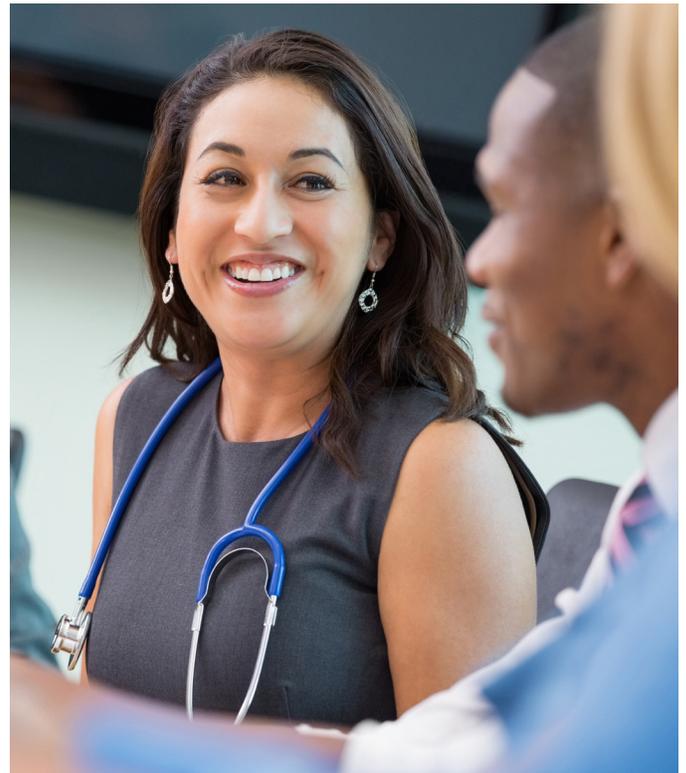
# Choosing MEDITECH's Business and Clinical Analytics Solution

Although the organization considered several bolt-on solutions, Deborah's leadership ultimately decided an integrated solution that optimized their EHR data for reporting would be the best fit, and selected MEDITECH's Business and Clinical Analytics. Using this solution, Deborah found that much of the heavy lifting had been done for them when it came to pulling data and using it in meaningful ways.

## Rollout

After going LIVE with Business and Clinical Analytics, Deborah's Information System (IS) team held a broad training session for directors, illustrating how the solution could meet each department's needs. But attendance was lower than anticipated. The IS team realized that they had to understand the various problems Deborah's directors faced, and demonstrate how Business and Clinical Analytics could help to solve them, in order to generate interest. This would require some level of dashboard personalization.

For 20 years Deborah used MEDITECH's Data Repository solution to store and query data. BCA helped them unleash its true potential. Serving as a visualization layer to MEDITECH's SQL data warehouse, BCA features a self-service analytics tool that enabled Deborah's IS team to readily pull data from the existing pre-built, query optimized data model, as well as source data from other databases. Deborah's IS team took a deeper look into the Data Repository and with MEDITECH's guidance, they gained the expertise they needed to begin designing their own dashboards that addressed staff-specific pain points. From there, building and editing content became as simple as dragging and dropping pertinent information into templates, before sorting and filtering it.



With this expertise in hand, they would now turn to two personalized dashboards that they felt would have the most impact on the organization and on generating staff buy-in.

### Surgical Intubation Times Dashboard

For their first custom dashboard, Deborah decided to focus on surgical intubation times, a need that was identified by a Vascular Department Clinical Improvement workgroup that met on a monthly basis. The new dashboard tracked patients during coronary artery bypass grafting procedures and open heart surgeries, with the goal of keeping intubation times as short as possible. In the past, Deborah staff tracked this information manually, recording information on index cards and later entering data by hand into a Microsoft® Excel spreadsheet. BCA enabled Deborah to transition away from heavy reliance on Excel, and gave them a tool to be able to analyze trends, set data-inspired goals, and monitor progress with up-to-date information.

## 10 a.m. Discharge Dashboard

As a renowned specialty hospital, Deborah relies heavily on timely patient throughput. If Deborah's inpatient discharge process is delayed, the flow of patients is disrupted, and other patients that are ready to be transferred might be unnecessarily detained in the ICU. Deborah's CEO advocated for a plan that would maximize the number of patients who were discharged by 10 a.m. each day, making this project an organization-wide priority.

They began by assembling a 12-member Discharge Tracking Committee chaired by Deborah's CMO, Dr. Lynn McGrath, and including representatives across clinical leadership. The Discharge Tracking Committee set a modest goal for their 10a.m. discharges, and increased it gradually as the dashboard proved its worth.

The IS team created a custom dashboard that tracked discharges by the 10 a.m. goal, by count and percent. They also tracked discharges by 11 a.m., to determine if they had missed their 10 a.m. goal by a small amount. The dashboard included interactive panels to identify potential bottlenecks by hour, physician, discharge provider, inpatient service, and day of the week, with the ability to drill down to patient-level detail.

With a comprehensive view of their total discharges by day, Deborah was able to determine the particular days when they fell short of their goals. They found that their discharges by 10a.m. were lower on the weekend due to lower staffing numbers, and on Mondays when they needed to address weekend backlog. These insights enabled them to make appropriate staffing changes.

IS is now starting to integrate a separate sheet into the dashboard that indicates the 'reason' recorded by case managers for delayed discharges. In several instances, providers found that some patients were staying in the hospital longer than needed, simply because they didn't have a ride home. Armed with additional context to understand the delays, Deborah can take a strategic approach to preventing them. In this case, staff assisted patients in finding transportation home, opening up a bed for the next patient. This dashboard provided Deborah with crucial insights so that they could monitor their own efforts and take informed steps to improve their processes.



# Adoption and Governance

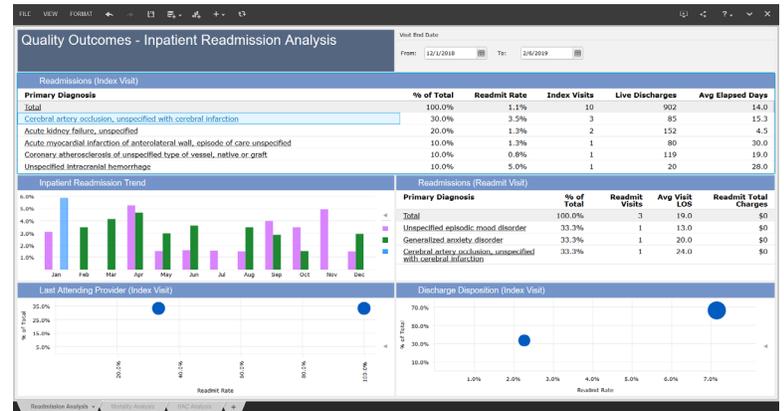
The overwhelming success of the first two custom dashboards sparked greater interest in BCA across the organization, convincing Deborah staff that Business and Clinical Analytics could be used to monitor and address more of their current challenges.

Workgroups were soon assembled to identify which specific metrics were needed to measure the efficiency of specific areas. Priorities for these dashboards are determined by the CIO, based on organizational need. Dashboards are now created accordingly, adhering to a timeline that includes dialogue with key stakeholders, back and forth feedback processes, and a technical validation process. When custom dashboards are completed, IS sends them to the original requestor for validation.

To encourage buy-in, the IS team enabled staff to filter dashboards to a personal view, based on what information they needed to see. Staff were also given a greater degree of autonomy; they could log into the system for the latest numbers at any time. Reports no longer need to be manually compiled and shared by request, freeing IS teams to create new dashboards instead of manually compiling reports. Executives at Deborah see the value of this tool, and Deborah's CEO in particular is eager to see the development of more custom dashboards.

# Results

- Discharges before 10 a.m. increased sixfold.
- Deborah has always had high patient satisfaction scores, but now they have more data behind their patient-centric processes, and they know that patients aren't waiting unnecessarily.
- With limited reporting staff, resources can be devoted to creating new dashboards and continuing to expand what they can analyze, instead of manually reproducing the same reports.
- Root causes for disparities in timeliness between physicians were identified and resolved.
- Deborah is now able to back suggestions for new projects and results of performance improvement projects with solid evidence.





“We really enjoyed using Business and Clinical Analytics. It’s opened our eyes to information about our organization that, previously, we weren’t able to access very easily.”

**Rich Temple,**  
Vice President/ CIO  
Deborah Heart and Lung Center

## Lessons Learned

Adopting Business and Clinical Analytics made analyzing organizational and project performance significantly easier to manage. Using dashboards that focused specifically on Deborah’s specific goals gave the project momentum. Showing various departments how this solution could meet their specific needs during training sessions, as well as through face-to-face interactions, was also useful in gaining widespread adoption.

The Information Systems team found that making small changes to existing reports can have substantial value. In one instance, a revenue cycle report showed diagnosis-related groups (DRGs) by code only. Deborah’s CIO altered the report to include the full group name, as not all staff had these codes memorized. This made the report more user-friendly, and consequently more impactful. Deborah found that having data available to them through BCA made it much easier to gain staff acceptance of new initiatives, as the need for these efforts was backed by solid evidence.

## What's Next?

Deborah will continue to use BCA to optimize various internal processes and throughput. IS has created multiple reusable dashboard templates that will facilitate the creation of even more dashboards in the future. The latest version of BCA includes pre-built data sets, some of which Deborah is using for financial reporting.

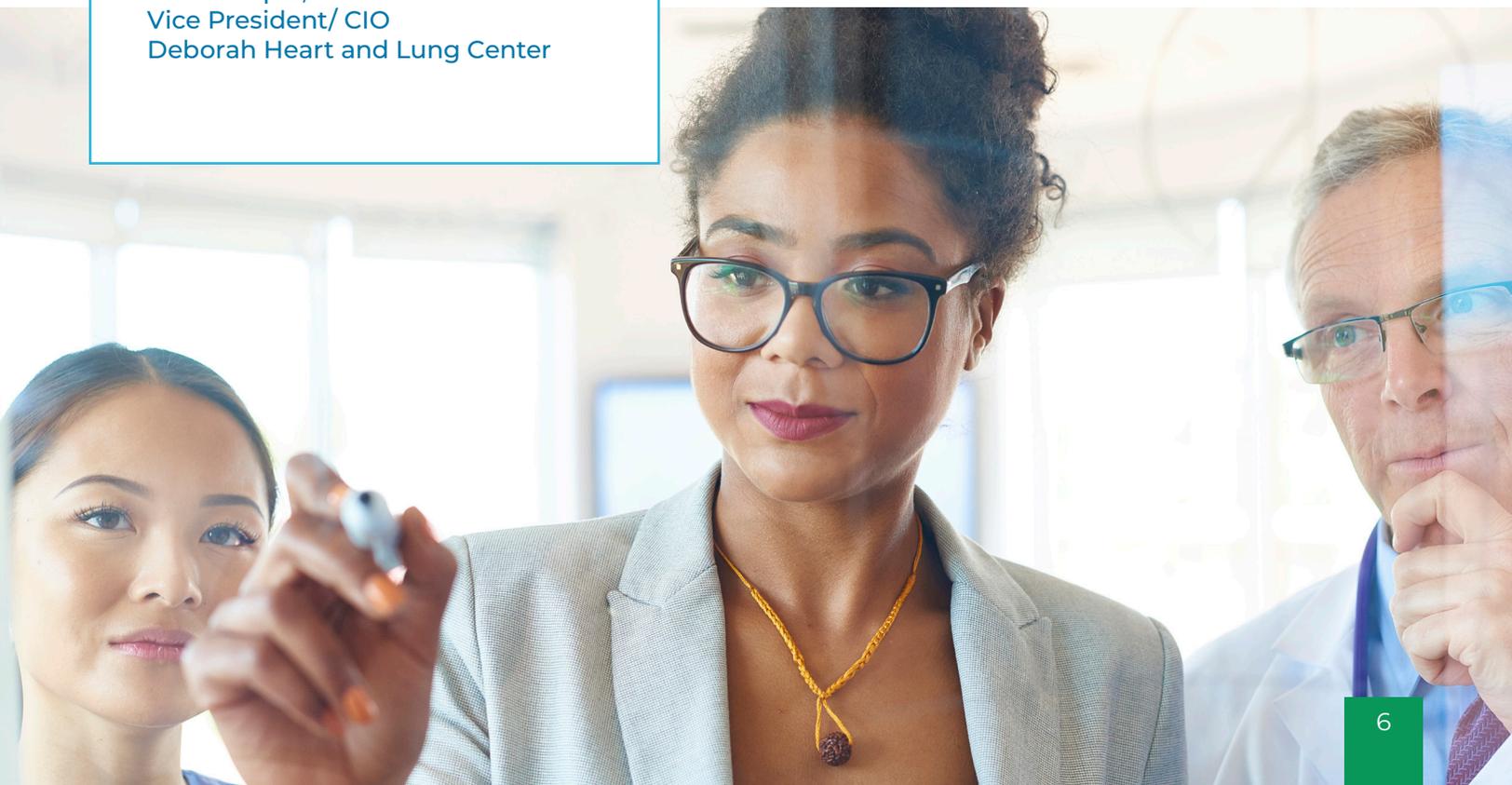
The IS team will be using BCA to create dashboards that can be pushed directly to Deborah's executive suite, making it easy for directors to review areas of interest and compare organizational data against their annual goals. In the upcoming months, they will also finalize a "downtime report" which includes scheduled orders that can be dropped to an offline computer in case of any system outages.

"The power of pushing 'the right data, to the right person, at the right place, at the right time, and in the right format' can be transformational. That's what MEDITECH's Business and Clinical Analytics solution does for us."

**Rich Temple,**  
Vice President/ CIO  
Deborah Heart and Lung Center

## Conclusions

According to Chief Information Officer Rich Temple, Deborah considers itself to be "a healthcare provider first and an information factory second." He and his team found that a solid business solution has the power to break down barriers between staff and the information they need, for continual performance improvements. Most importantly, BCA shines a light on existing processes, so that stakeholders can determine where and how to focus their efforts.





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