



Data Intelligence Supports Registries, Quality Improvement and More

Bryan Health - Lincoln, NE

A history of excellence. BryanLGH Medical Center/BryanLGH Heart Institute, located in Lincoln, NE, is a nationally recognized leader in heart and vascular care, serving patients from as far away as Arkansas and Wyoming.

Sophisticated outcomes analysis tools. Clinical Manager is a crucial component of the BryanLGH CVIS, supporting the hospital's quality-improvement initiatives and registry participation.

Close collaboration between clinical and IT staff. Staff and clinicians work together to ensure that the hospital gets the most out of its data.

Multiple modalities and clinical areas utilize data analytics and reporting. Analytics help diagnostic and invasive areas streamline workflow and optimize performance.

BryanLGH has been delivering top-quality care for over 85 years. Named a Distinguished Hospital for Clinical Excellence™, BryanLGH has been recognized many times for the care it delivers.

Highly skilled clinicians, state-of-the-art technology and an unwavering focus on quality form the foundation of BryanLGH's success. This foundation enables BryanLGH to consistently improve its outcomes. To support outcomes improvement efforts, BryanLGH recently implemented LUMEDX's Clinical Manager analytics software as part of its cardiovascular information system (CVIS).

National Registry Participation the Gateway to Quality

In cardiovascular care, national registry data is the gateway to quality, enabling internal QI projects, clinical research and trials, process improvements—and maximum reimbursements. At BryanLGH, Cardiac Data Managers Linda Grdina, RN, and Susan Barnason, RN, manage the STS and ACC-NCDR® registries as well as internal quality efforts, putting them at the center of data analysis and reporting.

Clear-Cut, Ongoing Quality Improvement Efforts

"We're always looking at our numbers and trying to improve here," says Linda. "Door-to-balloon time is at the top of everyone's agenda. It's what we're watching most closely for our CathPCIs. And we look at mortality and then the major complications.

"Any time that you can provide physicians with information and reports that are complete and timely, you have increased the opportunity for evaluation and improvement. And that is so important in healthcare—now and forever. I think it's a priority of every hospital. You have to improve your outcomes. And the more integrated we are at BryanLGH, the more easily we can achieve this."

Linda Grdina, RN
Cardiac Data Manager
BryanLGH Medical Center

Fortunately we don't have many complications with our CathPCI patients. Right now our heaviest reporting workload is for the STS, and we pay a lot of attention to what's going on with surgery. We've worked on lowering our postoperative atrial fib rate for quite a few years, and have been able to get it down into the 20 percent range. In fact, one or two quarters we've even been below the STS value. We're also looking very closely at renal failure."

Volumes at the BryanLGH Heart Institute are high; thus copious amounts of data are generated. Managing and monitoring all this data is critical to BryanLGH's success. For several years the Data Managers at BryanLGH have been doing all of the reporting in the Apollo clinical data repository—and have been happy with the database. "The Apollo queries are very good. I was able to get quite a lot just by using the queries already built into Apollo and modifying them for our purposes. But I also like the reports because the reports are more concise," Linda states. While this method was certainly working for BryanLGH, high volumes and ambitious, ongoing QI projects necessitated more sophisticated reporting.

When BryanLGH elected to expand its LUMEDX CVIS, it purchased Clinical Manager analytics/performance management software. The product, BryanLGH staff says, has turned out to be more versatile than they had originally expected.

Drill-Down Saves Time and Yields More Meaningful Reports

"From a registry standpoint, we've gained a lot, because with Clinical Manager we have all these great reports, and now we have drill-down capability too. We can look more closely at the information in the report. And we need that, because when we see any problems, we need to drill down to identify which patients they are. So the drill down is a big advantage," explains Linda. "Being able to break reports down, drilling down into your data—this is very helpful for us."

The data and quality team runs reports with a focus on mortalities and major complications for a quarterly Quality Forum. "We present graphs to the physicians, and we break those down by each quarter, by each physician, by each operative category. If you were to do that all manually, you would have to break down each complication about 25 ways. With Clinical Manager we can do that easily and quickly," Linda says.

The flexibility of Clinical Manager enables users to identify data trends and understand the causes. "We can break Clinical Manager reports down by quarter or by month—whatever we need. We compare by quarters and then do a total rolling quarters report and compare that with the STS, but the ability to break things down further can be helpful. For example, let's say you find that one quarter your infection numbers are up. And perhaps you knew that in the month of February you were doing some

Top Clinical Quality Initiatives for Cath and Surgery

- D2B
- Atrial fibrillation
- Renal failure
- Mortalities

BryanLGH Heart Institute Average Annual Volumes

- 500 Cardiac Surgeries
- 900 PCIs/Stents
- 3,200 Diagnostic Caths
- 950 ICDs, EPs and Pacemakers
- 14,000 Echos
- 26,000 ECGs
- 10,000 Cardiac & Nuclear Stress Tests

OR renovations. So you could break down that quarterly report by month and see if your infections were up only during the OR renovations. And you could know that was why you had a problem. And take steps to prevent that in the future.”

Reporting That Exceeds Expectations Creates Demand

“We’re using Clinical Manager in a number of areas,” notes Project Manager Deb Bolte. “We have the CardioPACS suite (image management system) in Echo, and they’re using the Clinical Manager reporting there for Echo. We’re using it for Cath and Interventional Radiology Inventory as well.”

The demand for reports among Clinical Manager users at the BryanLGH Heart Institute is growing daily. Clinical and IT staff work closely together to ensure that the hospital makes the most of its investment in technology. Senior Programmer/Analyst Jovy Banaag writes a wide variety of custom reports that the CV staff requests and then uploads them into Clinical Manager. “The user interface makes it easy for staff to navigate in Clinical Manager. Pivot tables and the ability to drill down into the data are also very useful. Linda uses the pivot tables. I use them, and other CV staff members use this functionality as well,” says Jovy.

A user-friendly front-end and the sophistication of the reports mean that Jovy gets more requests each day. “People are asking for more information to be added on existing statistical reports, wanting new reports on a pretty regular basis,” he says. “BryanLGH’s CV service line has a need for integrated statistical data reporting, and Clinical Manager provides us with a solution.”

Connecting the Service Line and the Enterprise

The medical center plans to increase Clinical Manager use within the BryanLGH Heart Institute—and ultimately connect it to enterprise systems and the EHR.

“Our goal at BryanLGH is to be fully integrated,” says Deb. “Within the CV service line, we will be making Clinical Manager our center for reporting. Beyond cardiology, from an enterprise-integration standpoint, we have Siemens for our HIS, and we have a decision support system. In the future we plan to link Clinical Manager to our decision support system so that we can make better global decisions as well.”

“Integration is so important,” Linda adds. “Just recently one of our cardiologists was looking into patients with aortic valve stenosis. He wanted to see certain parameters and how many of those patients were referred to surgery. Because our CVIS is integrated, I was able to pull those parameters from the echo and then link those with my surgery patients and do a comparison for him—quickly. Any time that you can provide physicians with information and reports that are complete and timely, you have increased the opportunity for evaluation and improvement. And that is so important in healthcare—now and forever. I think it’s a priority of every hospital. You have to improve your outcomes. And the more integrated we are at BryanLGH, the more easily we can achieve this.”

Key LUMEDX Solutions at BryanLGH

- Apollo clinical data repository
- CardioDoc physician structured reporting – Cath, and Echo
- CardioInventory
- CardioPACS image management
- Clinical Manager analytics software
- Apollo Toolkit
- PVD module
- ACC CathPCI Registry
- ACC ICD Registry
- ACC CARE Registry
- STS Cardiac Surgery Registry