



## Real-Time Data Collection Results in Significant Quality Improvements at Mercy Hospital Iowa City

### *Door-to-Balloon Times Down Dramatically*



Mercy Hospital Iowa City

**“If you know what information you’re trying to collect and you collect in real time and give that information back to caregivers immediately, that’s when the positive change can occur. Waiting six months for your ACC-NCDR Outcomes Report is like trying to drive by looking in your rearview mirror. The information is already in the past. We’re always looking to get immediate access to information whenever we can.”**

Gregory Clancy, RN, MSN  
Program Coordinator for Strategic Initiatives, CV  
Mercy Hospital Iowa City

The Cardiovascular service line at Mercy Hospital Iowa City has developed an innovative approach to collecting data for patients who receive a cardiac catheterization or stent. Patient information is gathered at the point of care in real-time, tallied and then analyzed. Real-time data collection has resulted in a demonstrated improvement in care

### Mercy Hospital Iowa City Highlights

**Data Collection Streamlined and Integrated into Clinical Workflow.** Resources once devoted solely to chart review and abstraction have been re-purposed. Moreover, data is available immediately; Mercy can run its own reports for review and analysis to identify areas for improvement.

**Door-to-Balloon Time Reduced.** Examining their own data has enabled Mercy to reduce their door-to-balloon time from over two hours to well under 90 minutes on average.

**Highly Engaged Clinicians and Staff.** Doctors, nurses and staff at Mercy are very aware of what data reveals about care quality. Now they are reaching out to their larger community—hospitals, paramedics, EMTs and other caregivers—to address how they can all work together to improve delivery of care in the region.

### Sunsetting Retrospective Data Entry

Until 2007, the team at Mercy collected cardiac cath patient data for the American College of Cardiology’s National Cardiac Data Registry® (ACC-NCDR) retrospectively. Weeks after discharge, a data manager from Medical Records would flip through patient charts to find needed information and transcribe the data onto a paper form. Next, staff would tab the information into the **Apollo Advance™** clinical data repository. This method involved a great deal of time and labor—two commodities in short supply at most hospitals today.

Mercy has now streamlined this process. Rather than retrospective chart review and abstraction, caregivers collect patient data in real-time, an approach that engages the clinical staff and facilitates teamwork. This has not only saved time, it’s yielded some unexpected positive results.

# great applications

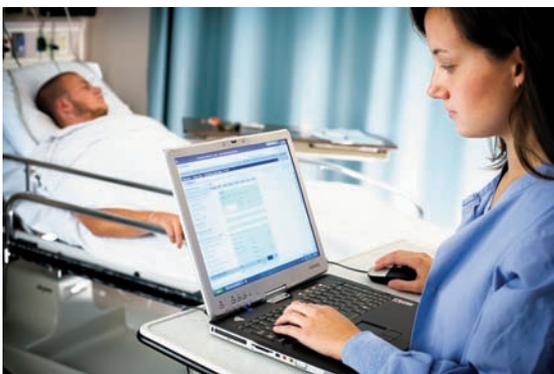
## BUILDING CARDIOLOGY CENTERS OF EXCELLENCE

“In the past, information needed for the ACC-NCDR Outcomes Report wasn’t effectively used for quality improvement. Because there was so much work involved, it had become more like something that we *had* to do rather than something we wanted to do,” explains Greg Clancy, RN, MSN, Program Coordinator for Strategic Initiatives at Mercy. “When the Outcomes Report was shown to cardiologists and staff, the data manager would sometimes end up defending negatively perceived data. Our people didn’t fully understand why this information was collected.”

### Integrating Data Collection into the Workflow

Shelly McGurk, an RN in the Cath Lab, worked with Greg to integrate data collection into the hospital’s hemodynamic system, and thus ease it into clinicians’ workflow. According to Shelly, “One reason the clinicians at Mercy didn’t understand the purpose of the data collection was because it was separated from their daily work. Integrating data collection into their work was the crucial first step toward generating interest in data—and what it shows about our care.”

Greg describes the process: “We had to educate everyone about standard data elements and the ACC-NCDR definitions. We had to come to agreement about what to collect and how to collect it. Once we got that going, people were very positive.”



*Sarah Biewen, RN, documents patient care activities in the Post-Anesthesia Care Unit.*

Mercy had been using Apollo for registry participation for many years. Greg had worked with Apollo at other hospitals, and he knew it could easily support real-time data collection. The Cardiovascular data managers collaborated with Mercy’s IT department to build customized pick-lists into their Witt hemodynamic system. They then added LUMEDX’s **Witt Hemodynamic Import Interface** to make patient data immediately available for retrieval and review in Apollo.

“Adding the interface improved the flow of data; we get data dramatically faster. For example, instead of waiting for medical records to be abstracted and entered into Apollo, now the information is right there,” reports Greg. IT supports the Apollo infrastructure and staff from Medical Records validate and export the information to ACC-NCDR for benchmark reports. The workflow is smoother and more efficient.

### Data Analysis and Improving Door-to-Balloon Times

Once a streamlined workflow was in place, the team at Mercy had time to examine their data right away—and more comprehensively. “They [physicians and staff] were so willing to use data for quality improvements,” Greg says. “We all talked about the registries, what we do, how we’re doing, what other hospitals are doing. We engaged key physicians, Cath Lab people, Quality Improvement people and IT people to make it work. And people here want to be part of the solution. It’s been fun.”

Mercy now runs reports monthly to see how they’re performing. If their numbers seem a little off, they drill down and analyze further. This has enabled them to make adjustments and see results quickly.

“We use our data to find opportunities for improvement,” says Greg. “For example, when we looked at the data from heart attack patients (STEMI patients), we realized that the care of these patients would improve if we reduced door-to-balloon time. And we’re reducing door-to-balloon times because Emergency Room staff and doctors, Cath Lab staff and cardiologists were all engaged to improve those times.” In fact, Mercy has reduced door-to-balloon time significantly, from over two hours to well under 90 minutes on average.

### Establishing an Engaged Healthcare Community

This success has encouraged the doctors, nurses and staff at Mercy to explore more areas for improvement. “We’re also looking at door-to-door-to-balloon time,” says Greg. “We’ve got all the data for patients transferred to our hospital from 1996 right up to Dec ’07 [just eight weeks earlier]. We know what happened to that heart attack patient, what hospital they first came to before they were transferred to ours.”

“We found recently that it took a long time for a heart attack patient to have that blocked artery opened up because it took so long for them to get to Mercy,” Greg explains. “In some cases it’s two-and-a-half hours or longer. It’s a problem, especially for those patients who live in rural areas. National guidelines indicate that the optimal time is two hours or less. The heart doesn’t know where it is—close to a hospital with a cardiac cath lab or far away—it just knows it’s under stress. We need to make sure ambulance crews, the rural hospitals and primary care hospitals are all working together to save that heart.”

Mercy plans to share its methods and successes with other providers in the area at their conference, *Acute MI and Stroke Collaborative: What’s the Rush?* “We’re including regional hospitals, paramedics, EMTs, nurses, Cath people and ED. We’re going to focus on what we can all do to improve the coordination and communication between us to improve the delivery of care in our region,” Greg explains. “It should be good for patients. We’re using our data to break down barriers here.”

### Forward-Looking Cardiac and Vascular Care

“If you know what information you’re trying to collect, and you collect in real time and give that information back to caregivers immediately, that’s when the positive change can occur,” says Greg. “Waiting six months for your ACC-NCDR Outcomes Report is like trying to drive by looking in the rearview mirror. The information is already in the past. We’re always looking to get immediate information whenever we can.”

At Mercy, using Apollo has given clinicians immediate access to patient information. This access offers a wide cross-section of healthcare workers the opportunity to do what they do best: deliver top-quality care and work continually to improve it.

#### OPPORTUNITY AND IMPROVEMENT BY THE NUMBERS

##### Average door-to-balloon times

- October 2006 – over 2 hours
- October 2007 – under 90 minutes

##### Data collection

- 2006 – 1 dedicated staff member collected data retrospectively
- 2007 – 2 RNs collect data in real time; data collection incorporated into their daily work in the Cath Lab and O.R.

##### Outcomes reports

- 2006 – 2x a year from the ACC
- 2007 – 1x a month from the departments involved

#### LUMEDX SOLUTIONS AT MERCY HOSPITAL IOWA CITY

- Apollo Advance Clinical Data Repository
- Witt Hemodynamic Import Interface

**About LUMEDX:** With over 500 heart center clients worldwide, LUMEDX is the market leader in fully integrated cardiovascular information and imaging systems and the No. 1 independent integrator of cardiology information solutions. LUMEDX offers the most proven, comprehensive package of clinical information tools, cardiovascular products, and services to help medical institutions enhance quality of patient care, reduce costs, streamline workflow, increase patient volume, and grow revenue.