

2011 Showcase in Excellence Award Recipient

Laboratory Sciences of Arizona/Banner Boswell Medical Center Laboratory

“Improve Laboratory Turnaround Time for STAT Laboratory Tests for Emergency Department Patients”



Organization Information:

Highest Ranking Official:

Dave A. Dexter
President and Chief Executive Officer

Contact Person:

Rick Rolfe
Administrative Director,
Clinical Laboratory, Banner
Boswell Medical Center
623-832-5381
ricky.rolfe@bannerhealth.com

Type of work:

Laboratory Sciences of Arizona (LSA) is the largest fully integrated laboratory network in the nation. The diverse network includes the ten Arizona hospital laboratories of Banner Health and the medical laboratories of Sonora Quest Laboratories (SQL).

Workforce: 2500

Testimonial of Value of the Arizona Performance Excellence Award Program

“Laboratory Science of Arizona and Sonora Quest Laboratories are committed to continuously improving its laboratory processes. Our goal is to “Be the trusted leader in diagnostic testing and information services”. The Arizona Quality Alliance and the Performance Excellence Program continues to provide our organization with an opportunity to validate our processes and be recognized once more as a Showcase in Excellence Award recipient.”

David A. Dexter, President and Chief Executive Officer,
Laboratory Sciences of Arizona

Highlights of Organizational Process:

Banner Boswell Medical Center, a 430 bed not-for-profit healthcare facility located in Sun City, AZ, provides orthopedic surgery, stroke care, cancer care, cardiac services, neuroscience services, rehabilitation services, and emergency care.

With over 3,000 patients seen monthly in the Banner Boswell Emergency Department, improvements to timely patient laboratory results help improve patient care and treatment and contribute to improved patient satisfaction scores. Decreasing Emergency Department wait times and providing timely, quality care to our patients allows Banner Boswell to provide quality emergency healthcare and maintain a loyal customer base.

Laboratory Science of Arizona provides laboratory services for all ten Banner Health hospitals in Arizona and monitors turnaround times for critical laboratory tests. The goal for Emergency Department testing is 90% completion within 30 minutes from the receipt of the specimen in the laboratory. In early 2009, STAT ED test results only met goal 88% of the time.

Process Improvement Methodology:

The approach taken to improve the process was a LEAN Six Sigma Green Belt project. An intradepartmental team of Test Management, Chemistry, and Hematology staff members used LEAN and Six Sigma process improvement principles to drive decisions and process changes in order to meet customer requirements. The goal of the project was to achieve the 90% completion rate within 30 minutes by decreasing non-value added steps (travel distance) by 30%, standardizing work flow to include the new chemistry analyzers, reducing inventory, establishing a 5S visual workplace, and reducing rework.

Processes:

A formal Define/Measure/Analyze/Innovative Improvement/Control (DMAIC) project process was applied. The Define phase included determining the project scope and goals as well as obtaining the Voice of the Customer (VOC). In the Measure phase, the team measured and mapped the current process. The Analyze phase entailed a detailed evaluation of the current process and issues contributing to inefficient and ineffective workflow in the sample processing and technical areas. Factors that led to designing a new layout were the increased staff and work space required to support collecting samples on the nursing units, which previously had been collected by nursing staff. While walking the process, the team identified several delays, including rework loops and non-value added work. The disruption and noise resulting from numerous phone calls inquiring about LIS changes, a varied receipt pattern of laboratory samples, a non-standardized sample drop off, and the sub-optimal location of Test Management were all factors considered in the new floor design. Finally, the selection and implementation of a new chemistry platform required a new workflow process, which made it an ideal time to renovate the laboratory.

The team identified several approaches to address gaps in the current process. The first design approach for the pre-analytical process was to allow for single piece processing of patient samples with an uninterrupted flow of distribution of samples to the technical area. The second design approach for the analytical process was to receive the samples for analysis with minimal manual manipulation in order to reduce cycle time and allow for a repeatable process. The third design approach was to improve laboratory layout to accommodate new analyzers and increased Test Management staff. This approach improved process flow and visibility, while improving quality through simplifying the path of the samples. Travel distance was reduced by 33%.

After defining, measuring and analyzing the current process, the team developed and implemented innovative improvements. The final phase of the DMAIC project was Control when the team established a control plan to ensure continued success and sustained results.

