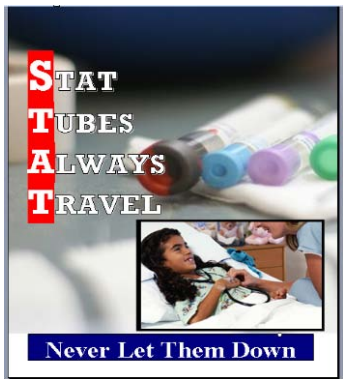
ARIZONA QUALITY ALLIANCE

Arizona Showcase in Excellence Award

2009 Showcase in Excellence Award Recipient

Laboratory Sciences of Arizona

"Turn-Around-Time on Emergent Lab Specimens"



Company Information:

Highest Ranking Official:
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Type of work:
Laboratory Sciences of Arizona (LSA) is the largest fully integrated laboratory network in the nation. This diverse network includes the nine Arizona Banner Health hospital laboratories and Sonora Quest Laboratories (SQL). LSA will perform over 55 million laboratory tests for greater than 6 million Arizona patients in 2010.

Workforce: 2,500 employees

Testimonial of Value of the Arizona Performance Excellence Award Program

"Laboratory Sciences 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 & Chief Executive Officer, Laboratory Sciences of Arizona

Highlights of Organizational Process:

Banner Estrella Medical Center (BEMC) is a full-service, nonprofit, acute care hospital in West Phoenix. The 214-bed hospital incorporates state-of-the-art technology such as an electronic medical record and a computerized physician order-entry system. Approximately 7,000 patients pass through the Emergency Department each month.

Laboratory Sciences of Arizona provides laboratory services for the nine Banner Health hospitals in Arizona and monitors turn-around-times for critical laboratory tests. The Emergency Departments expect the Laboratory to complete 90% of critical laboratory testing within 30 minutes of receipt in the laboratory. The BEMC laboratory was meeting goal for critical laboratory testing only 84% of the time.

Customer complaints and monthly metrics indicated process failures. Such feedback points are inadequate as they occur after the process failed. The overall turn-around-time from specimen receipt in lab to reporting results is dependent on steps in the pre-analytical process for handling the specimens received from ED. The testing areas expect STAT specimens within 5 minutes of

arrival in the lab in order to meet their turn-around-time goals. Only 75% of specimens were delivered to testing area within 5 minutes.

Process Improvement Methodology

The approach taken to improve the process was a Lean Green Belt project named "Be the Tube." A cross-functional team of Lab and ED associates used Lean principles and the DMAIIC methodology to Define, Measure, Analyze, Innovatively Improve, and Control the process. Lean is a way to add value from the viewpoint of the customer, eliminate waste, and create a flow of value-added steps.

The laboratory measured efficiency of specimens and orders received from the Emergency Department. Investigations of inadequate inputs slow down the process. A Pareto Analysis highlighted the most common problems. A value-stream map of the lab's pre-analytical process was completed. This provided information on the factors, which drive the process that are critical to quality: batch size, cycle time, and resources. The team measured what is critical to quality at each step in the process.

Process Improvements

The Emergency Department held a "Best Dressed Banner Patient Tube" campaign and trained all associates on requirements for adequate specimens – including tube types, placement of labels, and required information – with a "catchy song" as part of the training module. The value stream map of the lab's pre-analytical process indicated that specimens arrived in the lab in batches, associates entered specimens into the laboratory computer system in batches, and delivered them to the testing area in batches. The wait time for specimens delivered to the testing areas was increased due to this batching. Team members wanted to understand why associates were not delivering each patient's specimens immediately to the testing area.

The project led team members to "be the tube" which stressed the importance for associates closest to the process to understand that delays in the pre-analytical process affect patients. They personified the laboratory specimens as representing actual patients and created a new philosophy: STAT Tubes Always Travel, Never Let them Down. When we set the tubes down, we let the patient down. The team wrote a standard operating procedure, which implemented a first-in-first-out workflow, prioritization of specimens based on acuity, and eliminated batching so that associates immediately delivered each patient's specimens, highest priority first, for testing. The Laboratory placed a control on the process as an immediate indicator using the computer laboratory system. The testing area immediately notified the pre-analytical associates when a specimen was not received in the testing area within five minutes of receipt in the lab.

Results

Bridging the connection between the patient and specimens was a key ingredient to improving the process and delivering specimens to testing areas within 5 minutes 99% of the time. The overall turn-around-time for critical ED testing improved from 84% to 90% reported within 30 minutes. BEMC Lab improved their ED TAT from longest, compared to sister hospitals, to second best in the system. A reduction in ED TAT complaints to zero demonstrated that customers perceived the value of improvements.