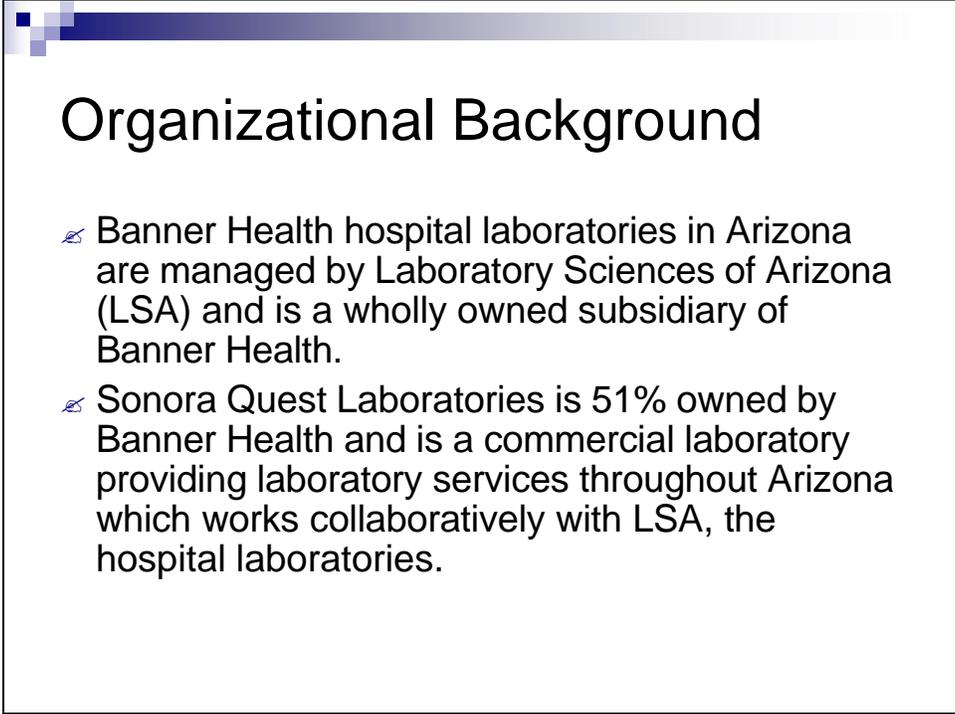


Transforming Turnaround Time for Early Morning Tests across Multiple Hospitals

Collaboration between Health System, Physicians and Laboratory



Organizational Background

- ✦ Banner Health hospital laboratories in Arizona are managed by Laboratory Sciences of Arizona (LSA) and is a wholly owned subsidiary of Banner Health.
- ✦ Sonora Quest Laboratories is 51% owned by Banner Health and is a commercial laboratory providing laboratory services throughout Arizona which works collaboratively with LSA, the hospital laboratories.



Banner Health LSA Laboratories

- ✍ Banner Thunderbird Medical Center
- ✍ Banner Desert Medical Center & Banner Children's Hospital at BDMC
- ✍ Banner Good Samaritan Medical Center
- ✍ Banner Estrella Medical Center
- ✍ Banner Baywood Medical Center/
Banner Heart Hospital
- ✍ Banner Gateway Medical Center



Banner Health Strategic Initiative

- ✍ 2004 – As part of a BH System Strategic Initiative a survey was conducted to identify issues impacting physician productivity
 - ✍ Lab results on the patient chart prior to conducting morning rounds – one of top five areas identified as an opportunity for improvement related to increasing physician efficiencies.



Banner Health Strategic Initiative

- ✍ 2005 – BH System Initiative – Laboratory Response Reporting to Allow for Increased Physician Efficiencies
 - ✍ Set up a measure and develop a baseline at each of the BH Arizona hospital laboratories, which provided the percent of laboratory tests completed by physicians' morning rounds.
 - ✍ Accomplished utilizing Six Sigma methodology and tools – Six Sigma Measure Project



Banner Health Strategic Initiative

- ✍ 2006 - BH System Initiative - Improve the baseline results at each hospital laboratory by at least 33%.
 - ✍ Six Sigma Improvement Project at all seven hospital laboratories



Process Key Requirements

- ✍ Voice of Customer Survey
 - ✍ Physician specialty
 - ✍ Time of morning rounds
 - ✍ Tests ordered
 - ✍ Desired percent complete
 - ✍ Current level of satisfaction



Process Key Requirements

- ✍ Stratification/Analysis of VOC Data
 - ✍ Different times for morning rounds
 - ✍ 100% of results available
 - ✍ Different tests
- ✍ Development of Key Requirements
 - ✍ 95% physician satisfaction

Process Key Requirements

- ✧ Morning Rounds
 - ✧ Results available by 6:00am
- ✧ Percent Results Available
 - ✧ 90%of Results
- ✧ Laboratory Tests
 - ✧ Complete Blood Count (CBC)
 - ✧ Basic Metabolic Panel (BMP)
 - ✧ Comprehensive Metabolic Panel (CMP)
 - ✧ Prothrombin Time (PT)
 - ✧ Partial Thromboplastin Time (PTT)

Baseline Data and Targets

Banner Health Baseline Data and Targets		
Facility	Baseline Data 2005	Year End Target 2006
BHH	67%	78%
BBMC	68%	79%
BDMC	79%	86%
BEMC	72%	81%
BGSMC	44%	62%
BMMC/BGMC	45%	63%
BTMC	42%	61%
AZ Region Roll-up	62%	75%



BH Systems Perspective

- ✦ Measure Project
 - ✦ LSA Executive Director of Hospital Operations led the Six Sigma team which had members from each hospital laboratory.
 - ✦ Communication with BH Strategic Initiative Team to provide updates on team's progress.
 - ✦ Also tied to LSA Critical Success Factor for Customer Satisfaction



Process Design/Improvement

- ✦ Key Factors – Cycle Time
 - ✦ Cause & Effect Diagram
 - ✦ Staffing/Staffing levels
 - ✦ Scheduled Start Times
 - ✦ Specimen Availability
 - ✦ Specimen Integrity
 - ✦ Instrument Readiness



Process Design/Improvement

- ✍ Staffing
 - ✍ Minimum staffing levels
 - ✍ Adjust Phlebotomy /Technical start times
- ✍ Specimen Availability
 - ✍ Adjust draw times
 - ✍ Standardized flow
 - ✍ Continuous flow



Data Collection Plan

- ✍ AM TAT measured on a daily basis
- ✍ Data collected on five identified tests that are ordered before a designated time and nurse collected specimens that are received before a designated time and resulted by 6:00am.
- ✍ Data Collection System validated by Measurement System Analysis (MSA).

BH Systems Perspective

✍ Improvement Projects

- ✍ 2005-2006 – Meetings held with Six Sigma teams across the system to discuss improvements implemented and results achieved
- ✍ Progress and results shared during individual site staff meetings, Banner Health Board meetings, LSA/SQL Quality Council, LSA/SQL Town Meetings.

Project Successes / Physician Satisfaction Comments

- ✍ “All labs completed and in Cerner by the time I need them.”
- ✍ “Everything is completed on time and I am very happy with the lab.”
- ✍ “The lab is doing a great job.”
- ✍ “Great job, much better! No issues with lab or phlebotomy.”



BDMC - Where Did We Start?

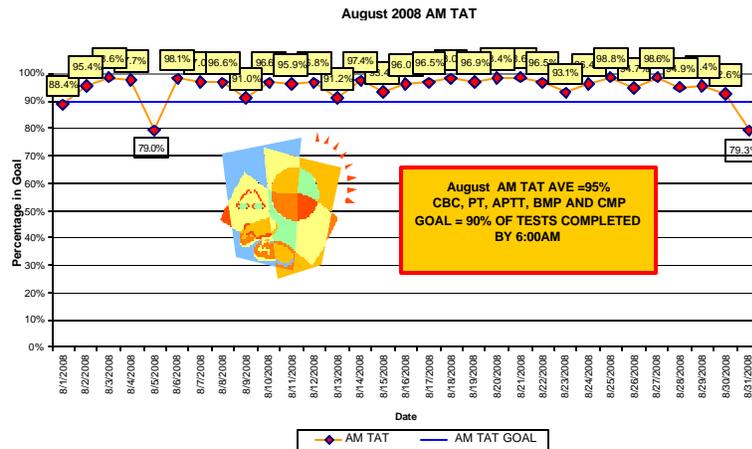
- ✍ YTD 2005 Baseline – 79% of 5 identified tests were completed by 6:00am.
- ✍ Goal - 33% improvement of baseline performance – 86%
- ✍ May, 2006 – 34.8% improvement – 87%



BDMC – Innovative Improvements

- ✍ Determined minimum staffing levels
- ✍ Adjusted phlebotomy/technical start times
- ✍ Adjusted phlebotomy draw times
- ✍ Standardized work flow
- ✍ Continuous flow of specimens
- ✍ Cart person

BDMC – Where Are We Now?



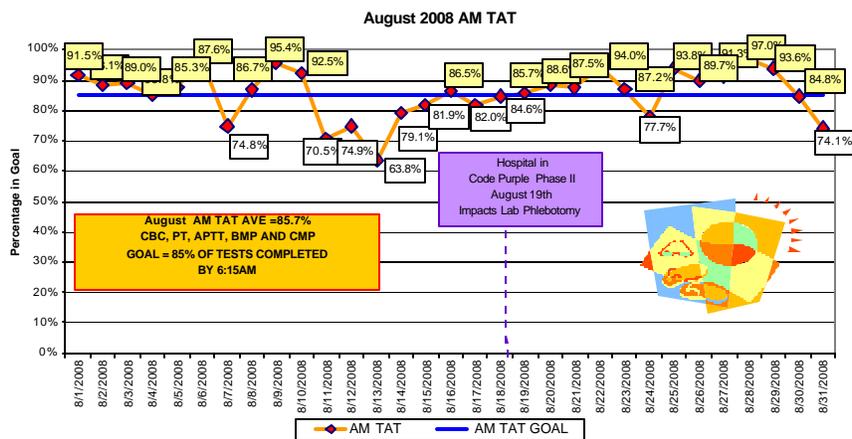
BTMC – Where Did We Start?

- ✍ YTD 2005 Baseline – 42% of 5 identified tests were completed by 6:15am
- ✍ Goal - 33% improvement of baseline performance – 61%
- ✍ May, 2006 – 33.3% improvement – 61%

BTMC – Innovative Improvements

- ✦ Adjusted phlebotomy and technical schedules
- ✦ Monitored hours worked
- ✦ Tracked Code Purple (Hospital saturation)
- ✦ Continuous flow of specimens
- ✦ New STAT spin for coagulation
- ✦ No additional Cerner labels sent to technical areas

BTMC – Where Are We Now?



AM TAT Project Results

Banner Health Baseline and Current Data				
Facility	Baseline Data 2005	2006	2007	August 2008 YTD
BHH	67%	87%	95%	94%
BBMC	68%	86%	87%	79%
BDMC	79%	87%	89%	94%
BEMC	72%	84%	88%	88%
BGSMC	44%	61%	70%	75%
BMMC/BGMC	45%	71%	91%	90%
BTMC	42%	63%	81%	81%

Key Learnings

- ✍ Work with physician to determine their needs
- ✍ Continually improve process
- ✍ Calculate the staffing hours needed
- ✍ Use a systematic approach—met Mission, Vision, Values, and Roadmap critical success factor to delight the customer