

BAPTIST HOSPITAL, Nashville, Tennessee

Point of Care Testing Yields Positive Impact to Hospital and Community

Dr. Robert A. Hardin, Chief Medical Officer, Dr. Robert Hutton, ED Medical Director, Holly Kunz, RN, ED Nurse Manager

SITUATION: FOCUS ON EMERGENCY SERVICES

With 683 licensed beds, Baptist Hospital in Nashville is Middle Tennessee's largest not-for-profit medical center. In 2002, there were 52,000 patients who presented at Baptist Hospital's 35-bed Emergency Department (ED) and approximately 10% of these visits were related to chest pain.

OBJECTIVE: STREAMLINE THE EVALUATION OF CHEST PAIN

Within the healthcare environment where efficiency is paramount, Baptist Hospital recognized an opportunity to improve chest pain patient flow through the ED while enhancing the quality of patient care.

"Providing superior cardiac care is a top priority at Baptist." – Robert A. Hardin, M.D., Chief Medical Officer

Baptist's ED physicians, ED staff, and cardiologists sought to improve emergency cardiac patient care as well as cost effectiveness. By rapidly and accurately identifying patients presenting with chest pain who are at risk for heart attacks, they would be able to save more lives, decrease unnecessary hospitalizations and reduce inappropriate discharges.

METHODOLOGY: PROVIDE RAPID RESPONSE TECHNOLOGY AT THE POC

Baptist decided to create a Chest Pain Center that includes a Chest Pain Evaluation Unit (CPEU) with direct access from the ED. To improve time-to-diagnosis and time-to-disposition, the ED incorporated Biosite's Triage® Cardiac Panel into an accelerated care pathway. The Triage Cardiac Panel, which operates on the Triage MeterPlus platform, is a simple blood test that simultaneously measures CK-MB, myoglobin and troponin I in approximately 15 minutes. Baptist was the first hospital in Tennessee to gain approval from the State Lab Board to bring point of care (POC) cardiac marker testing to the bedside. A total of ten Triage meters are used: the Chest Pain Center houses one meter in each room with additional meters placed in the CPEU, and the general ED.

"By giving our ED full control of the diagnostic process, we have the ability to expedite patient intervention and disposition without compromising the quality of patient care. Basically, we brought the lab to the patient, simplified the process and eliminated unpredictable delays." – Dr. Robert Hutton, ED Medical Director

- 10% of 52,000 ED visits are chest pain related

- Create Chest Pain Center
- Create a 5-track chest pain patient protocol
- Implement rapid bedside cardiac marker testing

BAPTIST CHEST PAIN CENTER GOALS

- Decrease patient turnaround times in main ED environment
- Reduce inappropriate admissions & discharges
- Provide state-of-the-art care
- Increase customer satisfaction
- Improve Baptist Hospital image in the community
- Community education
- Provide a working model for other ED operations
- Engender professional fulfillment among hospital staff
- Enhance research capabilities

This rapid testing technology was just one key element of the plan — success in this endeavor required a combined effort. The Laboratory evaluated and approved the diagnostic accuracy and precision of the point of care testing devices. Physicians created a customized 5-track chest pain protocol, designed to optimize patient outcomes.

RESULTS: INNOVATION BRINGS CLINICAL, OPERATIONAL, ECONOMIC REWARDS

To date, the Baptist team has achieved an average ED length of stay (LOS) for chest pain patients of 180 minutes. Holly Kunz, R.N., ED Nurse Manager reported that patients who were triaged to the CPEU had an even shorter ED length of stay (146 minutes), representing an annual savings value of \$74,000.

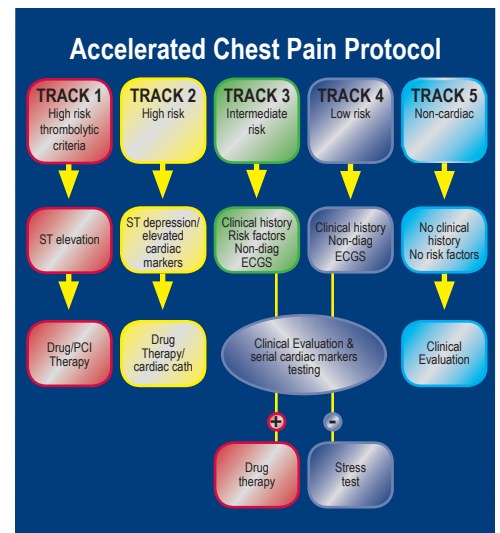
“The golden rule for cardiac care – Time is tissue. By bringing the cardiac markers to the bedside, we are saving precious time. Every opportunity we have to improve our process helps our patients.” – Holly Kunz, RN

Dr. Hutton also reported a reduction in unnecessary admissions due to more accurate and timely diagnostic capability. Fewer chest pain patients were admitted under a cardiac admit diagnosis, and of those who were admitted, a greater number had a final diagnosis of ACS/AMI (17% “after” vs. 15% “before”). Timely, accurate diagnosis has resulted in more efficient bed utilization, which represented an annual savings value of \$196,000.

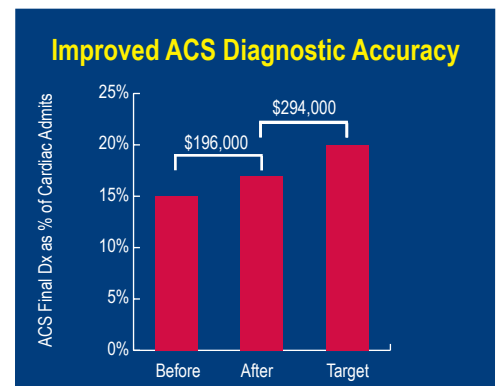
The hospital has also seen a decrease in inpatient length of stay. Average LOS fell from 2.9 days to 2.7 days for most of the cardiac admit patients, and down to 1.4 days for the small number of patients who were admitted from the CPEU. There was also a 22% reduction in CCU LOS. These achievements had an annual savings value of \$74,000. The above accomplishments have a total annual savings value of \$344,000.

CONCLUSION

Baptist Hospital has been able to demonstrate a positive impact to patients and the hospital. In the spirit of continuous quality improvement, Baptist would like to further improve across-the-board consistency among physicians in use of the 5-track protocol. This could yield even better patient care outcomes as well as further reduction in ED LOS, increased utilization of the CPEU and decrease in unnecessary hospitalizations of chest pain patients, with a potential value of up to \$980,000. Baptist is also moving forward, along with its sister hospitals, Middle Tennessee Medical Center and Saint Thomas Hospital, to ensure system-wide consistency in chest pain patient care.



- Average ED LOS – 180 minutes
- Utilization of the CPEU – savings value of \$74,000
- Better diagnostic accuracy/fewer unnecessary admissions – savings value of \$196,000
- Reduced inpatient and CCU length of stay – savings value of \$74,000
- Total annual savings value of \$344,000



Economic Impact		
	Impact Realized	Potential
Reduced ED LOS & Utilization of CPEU	\$74,000	Up to \$686,000
Better Dx Accuracy Fewer Admits	\$196,000	Up to \$294,000
Reduced IP/CCU LOS	\$74,000	TBD
Total	\$344,000	\$980,000