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REALIZING MEASURABLE RESULTS WITH THE i-STAT® SYSTEM

*The results shown here are specific to one health care facility and may differ from those achieved by other institutions. Background data presented represents data at the time the study was conducted: Sept-Nov 2006 to Aug-Oct 2007.

For *in vitro* diagnostic use only.

BACKGROUND

Located in Bethlehem, PA, St. Luke's Hospital is a nationally recognized tertiary care center and teaching hospital offering 72 medical specialties to its community. It is also a fully accredited Level I Trauma Center and an accredited Chest Pain Center.*

- **Hospital beds:** 480
- **ED visits:** 70,000 per year
- **End users:** Nurses and emergency service technicians
- **Use model:** Bedside testing

As part of an overall process improvement initiative, the hospital introduced the *i-STAT System* in 2006 for cardiac troponin and *CHEM8+* testing.

GOALS & METHOD

GOALS | Along with improving the quality of care, St. Luke's goals with bedside testing in the ED using the *i-STAT System* were to:

Improve efficiencies | Increase guideline compliance | Decrease length of stay

METHOD | Using established metrics, an independent, third-party consulting firm was engaged to:*

- measure improvement in process efficiencies with bedside testing in the ED for patients presenting with symptoms consistent with acute coronary syndrome
- measure significant decision points and activity times along the treatment algorithm
- critically examine productivity and workflow, both prior to and after the implementation of *i-STAT* testing

BEDSIDE TESTING WITH THE I-STAT SYSTEM:

STREAMLINED PROCESS IMPROVES EFFICIENCY AT ST. LUKE'S HOSPITAL ED

FEWER STEPS REQUIRED THAN WITH TRADITIONAL BLOOD ANALYSIS PROCESSING

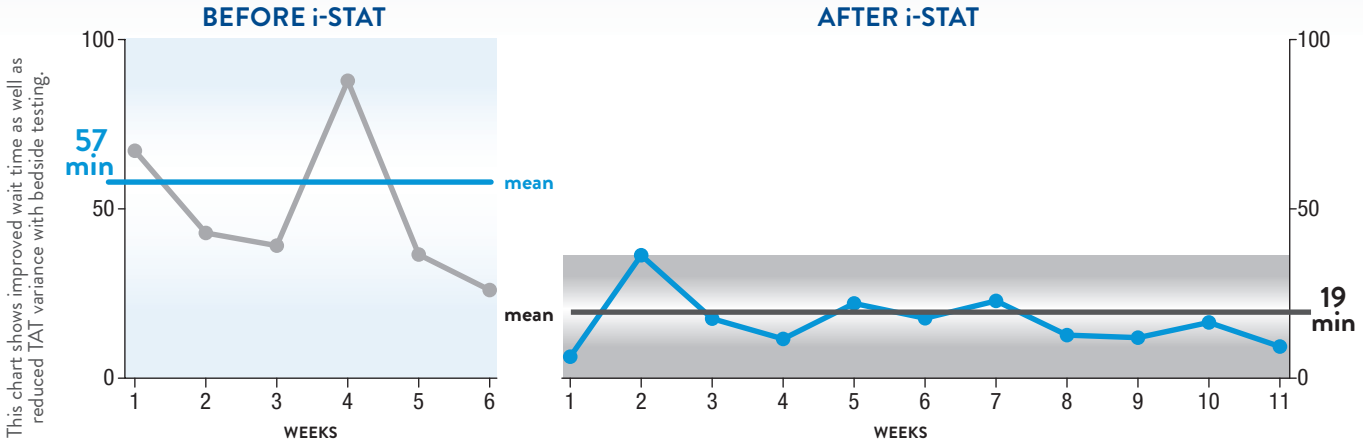
***cTnI*/*CHEM8+* ORDER REQUEST**

1. RN OBTAINS WHOLE BLOOD SAMPLE
2. SCAN USER ID, PATIENT ID, AND CTNI CARTRIDGE
3. FILL CARTRIDGE WITH SAMPLE
4. INSERT CARTRIDGE INTO i-STAT ANALYZER
5. RESULTS REPORTED IN MINUTES* & DOWNLOADED INTO EMR

*typically *cTnI* in 10 minutes and *CHEM8+* in 2 minutes.

PHYSICIAN INTERVENTION

FASTER TURNAROUND TIMES (TATS) AND IMPROVED CONSISTENCY OF TEST RESULTS



This chart illustrates the long wait time for test results and wide variance in TATs prior to the implementation of the i-STAT System.

This chart shows improved wait time as well as reduced TAT variance with bedside testing.

OUTCOME:

Due to reduced draw-to-result time with the i-STAT System (19 minutes vs 57 minutes), clinicians were given critical test information more quickly, which can expedite diagnosis, treatment, and disposition of patients.

*See intended use information on back panel

CLINICAL & OPERATIONAL IMPROVEMENTS: MEASURABLE RESULTS REALIZED

RESULTS REALIZED WITH THE i-STAT SYSTEM:

Along with faster TATs, the study found that there was a dramatic increase in meeting recommended guidelines and other process improvements after the implementation of bedside testing with the *i-STAT System*, including:

62.5% DECREASE ▼ in the median time of blood drawn to result time (15 minutes vs 40 minutes)

51.8% DECREASE ▼ in the median door-to-first ED troponin result time (41 minutes vs 85 minutes)

250% INCREASE ▲ in the percent of results (70% vs 20%) meeting the ACC/AHA-recommended guideline of a 60-minute TAT for troponin.[1] | 81.8% of the time, cTnI testing with the i-STAT System met a draw-to-result TAT of 15 minutes or less

39-MIN DECREASE ▼ in average ED length of stay (LOS) for walk-in NSTEMI patients*

*Cardiac troponin elevated greater than five times the reference range.

OUTCOME:

As part of an overall process improvement initiative, testing with the i-STAT System in the St. Luke's Hospital ED was associated with improved clinical and operational benefits.

MEASURABLE RESULTS ACHIEVED USING THE i-STAT SYSTEM

GOALS	RESULTS
• IMPROVE EFFICIENCIES	62.5% decrease in median time of blood drawn to result time (15 minutes vs 40 minutes) 51.8% decrease in mediam door-to-first ED troponin result time
• INCREASED GUIDELINE COMPLIANCE	250% increase in percentage of results meeting ACC/AHA-recommended guideline of a 60-minute TAT for troponin • 81.8% of the time, a TAT of 15 minutes or less was met for cTnI draw-to-result, well below the recommended 60-minute guideline
• DECREASED LENGTH OF STAY	39-minute decrease in average ED LOS for walk-in NSTEMI patients* *Cardiac troponin elevated greater than 5 times the reference range.

Implementation of the *i-STAT System* for cardiac troponin and *CHEM8+* testing in our ED has dramatically improved the efficiency of processing our patients. It's particularly gratifying to see this improvement go beyond the ED and have a positive impact on the processing of patients throughout the continuum of care."

– Faith R., RN BSN NE-BC, Director, Emergency Department

Reference: 1. Anderson JL, Adams CD, Antman EM, et al. ACC/AHA 2007 guidelines for the management of patients with unstable angina/non ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines for the Management of Patients With Unstable Angina/Non ST-Elevation Myocardial Infarction). *Circulation*. 2007;116:e148-304.

For *in vitro* diagnostic use only.

Intended Use

The *i-STAT® cardiac troponin I* (*cTnI*) test is an *in vitro* diagnostic test for the quantitative measurement of cardiac troponin I (cTnI) in whole blood or plasma. Measurements of cardiac troponin I are used in the diagnosis and treatment of myocardial infarction and as an aid in the risk stratification of patients with acute coronary syndromes with respect to their relative risk of mortality.

See CTI Sheets at www.pointofcare.abbott for full details.
Not all products are available in all regions. Check with your local representative for availability in specific markets.

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