Addressing the Critical Concerns of the Emergency Department

The i-STAT® System accelerates patient care decision-making by providing critical lab test results at the bedside
EDs across the nation are facing unprecedented challenges

**Overcrowding**¹
- The number of patients is rising as the number of facilities to treat them is decreasing
- The practice of “boarding” is the primary cause of overcrowding²
- Ambulances are being diverted

**Extensive wait times**
- Patients wait an average 55.8 minutes to see a physician³
- Long waits for lab results may delay treatment
- In 2006, 30% of visits to the ED lasted 4 hours or more³

**Operational demands**
- Need for increased system efficiency
- Supporting quality/compliance initiatives
- Limited resources and financial constraints

More and more, ED performance is being linked to clinical and financial outcomes
The i-STAT System can help you triage and treat patients faster.

In clinical trials, the i-STAT System has been shown to:

- Expedite patient triage by accelerating the availability of critical diagnostic test information\(^4,5\)
- Improve patient flow, shorten door-to-disposition times, and reduce overall ED length of stay\(^4,5\)
- Provide lab-quality test results in minutes,\(^6\) which can accelerate patient care decision-making and expedite time to treatment, when every minute counts
- Support hospitals in maintaining compliance with evidence-based guidelines\(^4\)

Other key benefits include:

- A comprehensive menu of tests, including those most commonly used in the ED
- An easy-to-use, four-step testing process that significantly streamlines the complexity of traditional lab processing
- Improved financial outcomes through increased efficiencies in the ED and throughout the hospital\(^7\)
Chest pain, shortness of breath, fever, trauma, GI distress, and abdominal pain are among the top reasons for visits to the ED.

The i-STAT CHEM8+ cartridge is a basic metabolic panel that provides:
- timely, critical BUN and creatinine measurements for evaluating renal function for the disposition of patients to radiology
- electrolyte and potassium measurements for patients such as those with renal impairment, cardiac distress, and dehydration
- hematocrit and hemoglobin measurements

For in vitro diagnostic testing only. See CTI Sheets for full details.

The 2007 ACC/AHA UA/NSTEMI Guidelines recognize troponin as the biomarker of choice.

The i-STAT cTnI cartridge meets the ACC/AHA guideline of 60-minute turnaround time 98% of the time, compared with 53% for the central lab.

Provides lab-quality results, which can improve adoption of serial cardiac marker testing.

Use of bedside testing in the ED has been shown to reduce:
- time to anti-ischemic therapy by approximately 45 minutes
- time to discharge by 24 minutes
- ED length of stay by 1.9 hours

Intended Use
The i-STAT cTnI test is an in vitro diagnostic test for the quantitative measurement of cardiac troponin I (cTnI) in whole blood or plasma samples. 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.

For in vitro diagnostic testing only. See CTI Sheets for full details.

ACC = American College of Cardiology; AHA = American Heart Association
The most common ED patients

**Congestive Heart Failure**

**Application:**
For quickly reaching a diagnosis in patients presenting with shortness of breath (acute dyspnea)

- The clinical diagnosis of heart failure may be difficult, particularly in patients presenting with acute dyspnea in the ED¹¹
- Rapid measurement of BNP is useful for quickly differentiating CHF and ADHF¹²,¹³ from conditions that present similarly such as ACS, asthma, pneumonia, and chronic obstructive pulmonary disease (COPD)¹¹
- Early diagnosis and treatment of heart failure in the ED can result in:
  - faster administration of therapy (1 hr vs. 22 hrs)¹²
  - 36% reduced length of stay for in-patients¹²
- Treatment of CHF in the ED can result in a 25% reduction in treatment costs¹¹

**Intended Use**
The *i-STAT BNP* test is an *in vitro* diagnostic test for the quantitative measurement of B-type natriuretic peptide (BNP) in whole blood or plasma samples using EDTA as the anticoagulant. BNP measurements can be used as an aid in the diagnosis and assessment of the severity of congestive heart failure. For *in vitro* diagnostic testing only. See CTI Sheets for full details.

**Lactate**

**Application:**
Useful for the diagnosis and treatment of lactic acidosis and hyperlactatemia

- Elevated levels of lactate are mainly found in conditions of hypoxia, such as shock, hypovolemia, and left ventricular failure
- The *i-STAT CG4+* cartridge can be an accurate and reliable method of measuring lactate and blood gases at the patient’s bedside within minutes

For *in vitro* diagnostic testing only. See CTI Sheets for full details.

**Anticoagulation**

**Application:**
Identifying and monitoring of patients on anticoagulant therapy

- There are over 3 million patients in the U.S. on oral anticoagulant therapy, most commonly with warfarin (Coumadin®)
- Between 1999 and 2003, warfarin was associated with about 29,000 visits to the ED for bleeding complications per year¹⁵
- In the ED, PT/INR is the standard test for identifying patients on warfarin

**Intended Use**
The *i-STAT PT*, a prothrombin time test, is useful for monitoring patients receiving oral anticoagulation therapy such as Coumadin® or warfarin. For *in vitro* diagnostic testing only. See CTI Sheets for full details.
Providing lab-quality results fast when every minute counts

Accelerates patient care decision-making
- Portable, handheld system provides lab-quality results in minutes
- Helps maintain compliance with guideline-recommended lab turnaround times

Real-time test results improve ED efficiency
- Patients triaged quickly, improving patient flow and timeliness of care
- Shortens door-to-disposition and length-of-stay times

Most comprehensive bedside testing platform available
- Tests include cardiac markers, blood gases, lactate, chemicals and electrolytes, coagulation, and hematology
- Advanced biosensor technology ensures accurate, lab-quality results

Easy-to-use four-step testing process works with you
- Reduces the time required to collect, process, and report accurate test results, allowing diagnosis and treatment at the bedside

References:

To learn more about how the i-STAT System can help you improve patient care in your ED, contact us at: www.abbottpointofcare.com