IMPROVING PATIENT FLOW THROUGH BEDSIDE TESTING AT A TEXAS EMERGENCY DEPARTMENT*

*The results shown here are specific to one health care facility and may differ from those achieved by other institutions. The information presented here is based on an actual facility, but the institution has requested anonymity in this promotional material.

BACKGROUND

This medical center is a 332-bed full-service hospital, and it is part of a hospital network in Texas. Serving the community since 1995, this institution is a regional trauma center with an accredited cardiac acute care unit.

- ED visits: **60,000 per year**
- ED beds: **30**
- Most common patients are those with abdominal pain, chest pain, and fever

Primary challenges were overcrowding and extended ED length of stay (LOS) due to operational demands and system inefficiencies.

GOALS

The overall goal was to implement a new patient evaluation process based on nurse-driven protocols. As part of the new protocol, the *i-STAT® System CHEM8+* and *cTnI* were implemented to facilitate testing for a broad range of patients. Specific goals were to:

- **Reduce ED LOS times** by eliminating barriers to patient care and accelerating patient throughput
- **Reduce door-to-lab results** for patients through efficiencies in processing
- **Shorten door-to-physician time** to expedite patient treatment

For *in vitro* diagnostic use only.

POINT OF CARE

POSITIVE IMPACT: INTEGRATION OF THE i-STAT SYSTEM INTO THE PATIENT-CARE PROCESS

i-STAT CHEM8+ was a key driver in expediting patient care—it was used for 50% of the ED population.

PATIENT ARRIVES AT ED AREA

INITIATE PROTOCOL

- Patient registered and labels generated
- Nurse-driven protocol initiated with patient symptom evaluation

✓ = CHEM8+ panel included in protocol.

Abdominal Pain	Chest Pain	Fever	Seizure	Extremity Injury	Shortness of breath/ dyspnea	Cough w/ fever >50 years old	Vomiting/ Diarrhea
✓	✓	☐	✓	☐	✓	✓	✓
Laceration	Syncope	Stroke	Vaginal Bleeding	GI Bleed	Overdose *Intentional*	Dysuria/Hematuria without Abdominal Pain	
☐	✓	✓	☐	✓	✓	☐	

DIAGNOSTIC TESTING

Based on patient symptomatology:

- Nurse draws blood for analysis
- *i-STAT* testing conducted at triage and/or bedside/workstation

CHEM8+
CHEM8+ panel conducted on all patients presenting with checked symptoms above, with results provided in 2 minutes

cTnI
cTnI testing completed for all patients presenting with chest pain symptoms*

CLINICAL INTERVENTION

- The *i-STAT System* helped the institution expedite patient flow, shorten door-to-physician times, and **reduce overall ED LOS by 23 minutes***

---

*See intended use information on back panel | *i-STAT cTnI testing not included in outcomes data or original protocol.

OPERATIONAL EXCELLENCE: IMPLEMENTATION OF NURSE-DRIVEN PROTOCOLS*

Evaluation form for new
ED nurse-driven protocols

		weight based for fever 101.0 or greater
Abdominal Pain	EKG if age 50 or >, CBC **iSTAT-Chem 8** UA POC UPREG SPREG if female with vaginal bleeding	
Chest Pain	EKG, IV , NS KVO, O2 2LNC, monitor, pulse ox CBC **iSTAT-Chem 8 iSTAT-Troponin** PCXR	
Syncope	IV, NS KVO, O2 2LNC, monitor, pulse ox EKG, CBC, **iSTAT-Chem 8,** PT/PTT if on Coumadin	
Stroke	IV, NS KVO, O2 2LNC, monitor, pulse ox Stat Alert Page: 512-625-1029 **iSTAT-Chem 8**, Initiate Stroke Order Set	
Shortness of Breath/Dyspnea'	CXR, EKG, (cardiac markers >50 yrs old) CBC, **iSTAT-Chem 8**, pulse ox, O2 as needed	
Vaginal Bleeding 1ˢᵗ Trimester	FHT'S if >12 weeks gestation CBC,UAIF/UAPY (culture if UA +) QHCG (hold type and Rh for MD order)	
Vomiting/Diarrhea >	IV, NS liter bolus, Zofran 4mg PO, POC UPREG CBC, **iSTAT-Chem 8**, UA, SPREG if menstruating	
GI Bleed	IV X 1, NS KVO, Monitor, pulse ox, EKG CBC, **iSTAT-Chem 8**, PT/PTT, Type and Screen	
Overdose —intentional	IV, NS KVO, O2 2LNC, monitor, pulse ox, CBC, **iSTAT-Chem 8**, UDS, Tylenol & ASA, ETOH, EKG POC UPREG, SPREG if menstruating	
Cough w/fever over >50 years old	IV, NS KVO, O2 2LNC, monitor, pulse ox BC X 2, CBC, **iSTAT-Chem 8**, CXR, EKG	
Seizure	IV, NS KVO, O2 2LNC, monitor, pulse ox **iSTAT-Chem 8**, Blood levels for SZ meds, Seizure Pads	

i-STAT CHEM8+ plays a pivotal role in
10 of 15 nurse-driven protocols

<div style="background:#1a3a6b;color:white">

The i-STAT System effectively helped nurses expedite the processing, treatment, and disposition of a greater number of ED patients.

</div>

Time	Orders	Init	Time	Orders	Init/Time
	CBC			Heplock	
	iStat Chem 8			Monitor O2	
	Amylase Lipase			O2: LPM	
	PT/PTT			NC NRB BVM	
	POC U-Preg			ABG	
	Urine-Tox ETOH			EKG	
	S-Preg HCG Quant			CXR Port 2V	
	U/A Micro C&S			ABD KUB 3V	
	iStat Troponin			C-Spine 3V	
	D-Dimer			CT: w/wo	
	Liver-Panel			GC/Chlam Wet Prep	
	BNP			Blood CX Sputum Cx	
	Comprehensive			Type Rh Screen	

Under the new protocol, *i-STAT CHEM8+* is the specified test
for all patients requiring a basic metabolic panel (BMP)

QUALITATIVE OBSERVATIONS

- With nurses as primary *i-STAT* operators, **patient care has become more efficient.**
- The *i-STAT System* helped the medical center's ED achieve its goal of **reduced LOS** because of its application across a broad range of patients.

MEASURABLE RESULTS: PROCESS CHANGE AT AN INNOVATIVE TEXAS ED

GOALS

RESULTS*

GOALS	RESULTS*
• Reduce ED LOS times and accelerate patient throughput	Prior to process change: 3 hours, 3 minutes After process change: 2 hours, 40 minutes **Improvement:** **23 minutes**
• Reduce door-to-lab results	Prior to process change: 70 minutes After process change: 20 minutes **Improvement:** **50 minutes**
• Reduce door-to-physician time to expedite patient treatment	Prior to process change: 45 minutes After process change: 38 minutes **Improvement:** **7 minutes**

These process improvements enabled 17% growth from the previous year in number of patients seen. For example, 20 more patients per day (average) were seen by the ED in one month vs the same month the previous year.

New nurse-driven protocols were instituted using i-STAT CHEM8+ in 50% of patients. This has enabled the staff to accelerate processing and treatment— allowing them to see more patients.

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.

* *i-STAT cTnI* testing not included in outcomes data or original protocol.

Abbott