Summary:
The traditional intake process resulted in prolonged wait times, poor informatics, and an ever increasing number of patients leaving without being seen (LWBS). The hospital decided to employ information technology changes and staff cultural changes to combine the processes and initiate triage-driven bed placement processes.

Category:
- A: Arrival
- C: Clinician Initial Evaluation & Throughput

Key Words:
- Crowding
- Patient Volume
- Queuing
- Rapid Intake
- Registration

Hospital Metrics:
(Taken from FY2005 AHA Annual Survey)
- Annual ED Volume: 45,822
- Hospital Beds: 530
- Ownership: Public
- Trauma Level: 1
- Teaching Status: Yes

Tools Provided:
- Rapid Entry Process Overview
  This tool is a two-page document explaining the rapid entry process’s plans, implementation and results, and is used by hospital staff and external audiences to understand the software changes made at UCSD Medical Center and its outcomes.
- Accelerated Care Triage (ACT) Flow Chart
  This tool is a one-page visual flow document explaining the accelerate care at triage process when no ED beds are available, and is used by hospital staff to understand the process details.

Clinical Areas Affected:
- Emergency Department
- Registration
- Triage

Staff Involved:
- ED Staff
- Laboratory
- Registration Staff

Hospital: UCSD Medical Center – Hillcrest
Location: 200 West Arbor
San Diego, CA  92103
Innovation
At the UCSD Medical Center – Hillcrest ED when a patient presented to the department they went through multiple processes (sign-in, triage, and registration), each with their own waiting queues and bottlenecks. This traditional intake process resulted in prolonged wait times, poor informatics, and an ever increasing number of patients leaving without being seen (LWBS). Karen Jones, RN, MS, Director of Emergency Nursing explained that the hospital decided to employ information technology changes and staff cultural changes to combine the processes and initiate triage-driven bed placement processes.

The rapid entry process involves integrating technology into hospital routines and implementing complementary changes in staff culture. As part of the process, patients undergo a quick electronic registration and bar-coding at sign-in. In addition, the culture of emergency department triage and registration staff was changed from patient sorting to patient management.

Results
As a result of these new processes, the Hospital has experienced significant decreases in wait times, total length of stay (LOS) and the number of patients leaving without being seen. LOS has decreased from 7 hours to 5 hours. LOS for urgent care patients is less than 3 hours and 46 percent of urgent care patients are discharged in less than 2 hours.

The percent of patients leaving without being seen is down from 9 percent to 4.6 percent and the time from discharge order to time leaving the ED is down to 30 minutes. Wait times continue to improve: 30 minutes for admitted patients and 60 minutes for all other patients.

Innovation Implementation
To implement the Rapid Entry Process information software changes to the ED electronic record were made, as well as linkages to the ED, hospital, laboratory, radiology information technology systems. Bar coding for patients, lab specimens, radiology and lab testing was also implemented. Along with the information technology changes, cultural changes for registration, nursing and MD staffs were also made (See Rapid Entry Process Overview).

In addition to implementing the Rapid Entry Process, UCSD Medical Center – Hillcrest also implemented a process to accelerate care at triage (ACT). This is a process that employs physician-initiated care at triage (specifically ancillary testing) when no ED beds are available (See ACT Flow Chart).

Advice and Lessons Learned
Ms. Jones said how staff resistance to changes in the various processes was a challenge. They also experienced barriers with the information technology systems and integrating the various systems. There was also resistance from laboratory services to change.

Ms. Jones said it was important that staff embrace and buy-in to the process change, as well as the information technology changes in order for the information technology improvements to be fully realized.

Tools to Download
Rapid Entry Process Overview
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Accelerated Care Triage (ACT) Flow Chart
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### Description of Current State:

**AIM:** Reduce ED LOS, wait times and LWBS by implementing a rapid ED entry process for arriving patients

| PLAN | Over the past 5 years, our ED has experienced increasing LOS times for patients (from mean of 4 to 7 hours) as well as an increase in numbers of patients leaving without being seen (LWBS) from 2% to over 9%. An analysis of our ED processes revealed that patients spend an inordinate amount of time in processing prior to getting to an ED bed to see the physician. These processes include initial sign in, waiting for registration, waiting for triage, and waiting for a bed. Our goal was to streamline these processes and reduce ED LOS, wait times, and %LWBS. |
| Do | We initiated an ED Rapid Entry project which combined informatics changes with culture changes for our staff. Our initial trial was conducted during the busiest 12 hours a day in our ED. First, we combined initial sign-in with a quick registration process for patients prior to triage. This required linking our ED webcharts computer system with the hospital PCIS registration system. In addition, we added patient barcoding at sign-in to facilitate this process and allow immediate ancillary testing to be ordered and obtained on patients prior to full registration. Second, we embarked on a process of changing the culture of ED triage from simply sorting, to managing patient flow into the ED by encouraging immediate patient movement to open beds when available, and the initiation of tests on patients at triage when beds are not available. |
| STUDY | We measured mean ED LOS and wait times on a weekly basis, as well as %LWBS on a monthly basis following the implementation of these changes. Our mean ED LOS decreased from 320.2 minutes to 294.0 minutes. Wait times decreased significantly for fast track patients (77.2 to 45.2 minutes – a 41.5% decrease) and for non-admitted patients.
(79.4 to 53.3 minutes – a 32.9% decrease). Monthly %LWBS decreased from a high of 9.2% to 3.4% 3 months after the initiation of the project.

We also tracked our registration process for any errors of patient misidentification during the project. No errors or misidentifications occurred as a result of the rapid entry sign-in/quick registration process. In addition, there was a 90% decrease in laboratory specimen mislabeling after the initiation of the patient bar coding process at ED entry.

**ACT**

- List changes taken as a result of this cycle
- Standardize the successes
- Act to hold the gains or abandon efforts
- Plan for next cycle

As a result of our project’s successes, we have implemented the rapid ED entry system 24 hours a day in our ED. We continue to encourage our triage staff to manage patient entry and flow into the ED and continue to track our LOS, wait times, and %LWBS on a monthly basis.