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Improving Inpatient and Emergency Department Flow for Veterans

VA Boston Healthcare System
West Roxbury, Massachusetts, USA

Team

The VA Boston Healthcare System team is a participant in the IHI Learning and Innovation Community on Improving Flow Through Acute Care Settings.

Joan Clifford, RN, Deputy Nurse Executive (Team Sponsor)
Stephan Gaehde, MD, Medical Director, Emergency Department
John Marinello, RN, Nurse Manager, Emergency
All Emergency Department Staff
Margaret Andrews, Patient Services Supervisor
Cathy Stephens, Chief of Patient Services

Aim

To redesign a system for the emergency department (ED) to improve timeliness and reduce delays by:

- Reducing the overall cycle time to admit/transfer patient to less than 1 hour
- Reducing the number of patients who left without being seen to less than 3 percent
- Reducing or eliminating the number of hours for ED diversion
- Improving communication between shifts and among staff (physicians and nurses)
- Improving overall teamwork

The overall aim of our flow journey is to increase access to inpatient tertiary services for the veterans in our integrated network. The Veterans Health Administration (VHA) has set performance targets for some of our measures at both a fully satisfactory and an exceptional level. Our goal is to be at or above the exceptional level for those targets.

Measures

Percent of Patients Who Left Without Being Seen
[Exceptional = Less than 3 percent of the patients left prematurely during the quarter]

Percent of Patients with ED Stays of Greater Than 6 Hours
[Exceptional = Less than 5 percent of all ED stays exceed 6 hours in length]

Emergency Department Average Length of Stay (LOS)
[Goal = 3 hours or less]

Decision to Admit to Inpatient Unit Median Time (in Minutes)
[Goal = Less than 1 hour]

Number of ED Diversion Hours
[Goal = No diversion hours]

FEATURED CONTENT

Optimizing Patient Flow: Moving Patients Smoothly Through Acute Care Settings »

Changes

An electronic ED progress note

An electronic order set/protocols for five major ED diagnoses (in many instances, results of lab or radiology studies are already back by the time the provider is ready to see the patient)

- Chest pain
- Shortness of breath
- Fever
- Abdominal pain
- Mental status changes

Fast Track Program: >30 percent of ED patients are triaged to Fast Track

Daily slotted appointments for patients that have a Primary Care Provider (PCP) located at the same campus as the ED

Organization-wide centralized bed control and bed huddles

- Bed control utilizes a “bed czar” approach with one central authority to assign inpatient beds.
- Bed huddles involve all inpatient nursing units, PACU, same-day unit, and procedural areas and lasts 5 to 15 minutes, twice daily. All units report current census, including transfers, discharges, and “expects” (expected patients); and all known bed requests are assigned.

Resident moonlighting program to add resources when needed

Telephone “expects” from urgent care areas are accepted by RNs

- This method releases the physicians and mid-level providers from the interruption of triaging phone calls.

An electronic bed board system, which allows for rapid visualization of patients’ acuity and status of pending tests, and tracks time from patient check-in to the ED to disposition, as well as patients expected to arrive in the ED

ED Flow Team was established to generate new ideas and meet weekly to track data, drill down on problems, and problem solve

Shape demand and patient satisfaction

- Frequent users: Direct frequent users to the appropriate setting for care
- More access to primary care: Created more access by allowing Administrators on Duty (AODs) to book appointments with primary care during the off-tours to ensure a follow-up
- Identify problems with contacting primary care: Survey (four-questions, yes/no answers) helps identify any problems with these patients contacting their PCP or the Telephone Advice Program (TAP), and triggers a discussion that helps determine future steps in more efficient management of these patients

Address patients who left without being seen (LWOBS)

- Identify patients waiting more than 90 minutes as highest priority patients and inform providers to move them to the front of the queue.
- Follow-up call by the triage or charge nurse for the patients who have waited >2 hours before leaving without being seen. Include an apology and if the patient still needs to be seen, direct them to come in a time when the ED is least busy.
- Measure and analyze daily data on the patients who leave without being seen. Some trends have been discovered, such as no patients had left without being seen when two specific providers were on duty. This may be related to their individual approach to the fast-track patients, and might be used as a strong practice for others to follow.

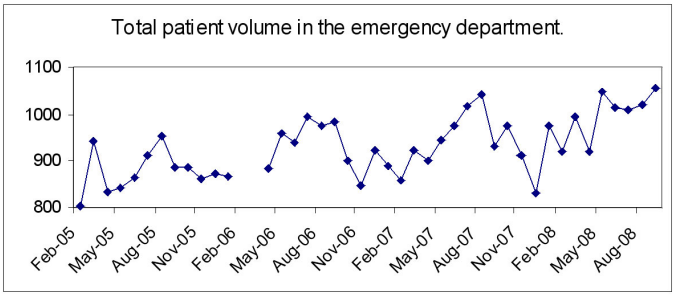
Pharmacy refill clinic

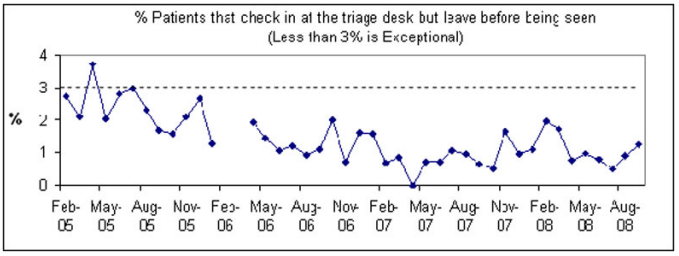
- The front desk clerk (patient services) is now able to check on the PCP appointment status of every patient attending the refill clinic. Those patients without PCP appointments in the next 90 minutes are now given a PCP appointment before going to the refill clinic. This allows the pharmacy staff to refill the medications and eliminates any possibility of patients being sent back to the ED.

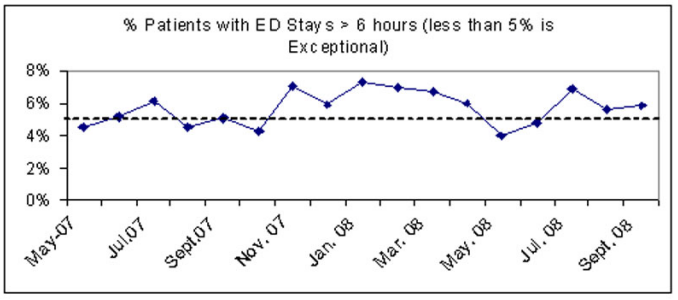
Linkage to inpatient flow: Create a “pull” versus “push” system

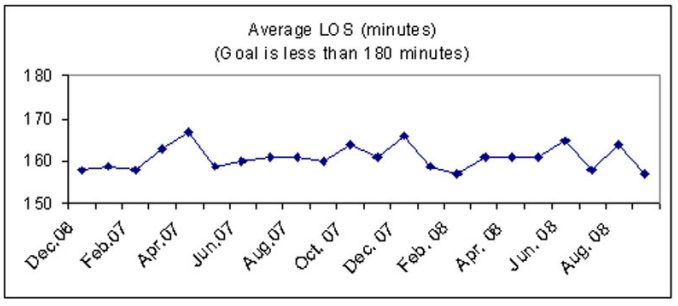
- Data sharing on timeliness of admissions, as well as sharing information about the challenges around flow from the ED to the floors, has led to better use of existing tools like the bed board, and efforts to pull admissions from the ED to the floors.

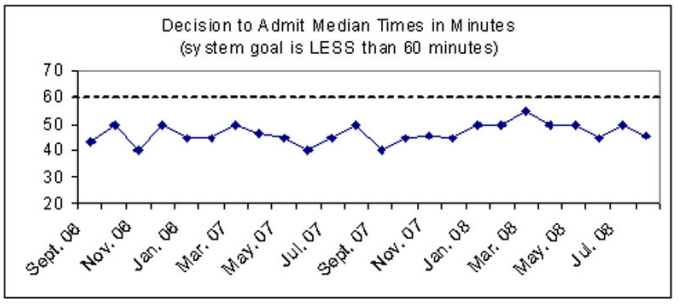
Results

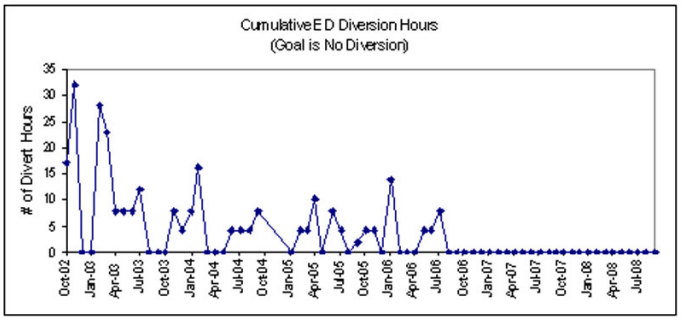

Total patient volume in the emergency department.
1100
1000
900
800
Feb-05
May-05
Aug-05
Nov-05
Feb-06
May-06
Aug-06
Nov-06
Feb-07
May-07
Aug-07
Nov-07
Feb-08
May-08
Aug-08


% Patients that check in at the triage desk but leave before being seen
(Less than 3% is Exceptional)
%
4
3
2
1
0
Feb-05
May-05
Aug-05
Nov-05
Feb-06
May-06
Aug-06
Nov-06
Feb-07
May-07
Aug-07
Nov-07
Feb-08
May-08
Aug-08


% Patients with ED Stays > 6 hours (less than 5% is Exceptional)
8%
6%
4%
2%
0%
May-07
Jul.07
Sept.07
Nov. 07
Jan. 08
Mar. 08
May. 08
Jul. 08
Sept. 08


Average LOS (minutes)
(Goal is less than 180 minutes)
180
170
160
150
Dec.06
Feb.07
Apr.07
Jun.07
Aug.07
Oct. 07
Dec. 07
Feb. 08
Apr. 08
Jun. 08
Aug. 08


Decision to Admit Median Times in Minutes
(system goal is LESS than 60 minutes)
70
60
50
40
30
20
Sept. 06
Nov. 06
Jan. 06
Mar. 07
May. 07
Jul. 07
Sept. 07
Nov. 07
Jan. 08
Mar. 08
May. 08
Jul. 08


Cumulative ED Diversion Hours
(Goal is No Diversion)
# of Divert Hours
35
30
25
20
15
10
5
0
Oct-02
Jan-03
Apr-03
Jul-03
Oct-03
Jan-04
Apr-04
Jul-04
Oct-04
Jan-05
Apr-05
Jul-05
Oct-05
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08

Summary of Results / Lessons Learned / Next Steps

Lessons Learned:

A systems approach to managing flow for VA Boston Healthcare System has allowed us to increase the throughput of the ED, meeting our goal of increasing access to our tertiary services. We have much more to do but we are heading in the right direction. It really is a journey that keeps taking us towards a better place.

A systems approach to solving flow problems is an absolute necessity. Our teams have come to realize the interconnectedness of units and the need to pay attention to the upstream and downstream effects of changes (i.e., changes in one area and the effect it may have on another).

Involving those at the front line is essential. As issues were identified by the ED Flow Team, they invited those who work in other areas to be part of the solution — one way to get the buy-in!

Next Steps:

Although the median cycle time for admitting to inpatient beds is above the goal, delay at certain times (2:00 PM to 5:00 PM) has been identified as an area that needs improvement. This has also been identified as an area of focus for the Inpatient Flow Team, and a group representing inpatient areas and the ED will be flow mapping the processes in those areas and working on some tests of change. Their focus will be to reduce admission delays to less than one hour.

Contact Information

Joan Clifford, RN
Deputy Nurse Executive
VA Boston Healthcare System
Joan.clifford@va.gov

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