Carolinas HealthCare System

Reducing Low Acuity Length of Stay: a Care Paradigm Transition

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One TEAM, DRIVEN TO MAKE A DIFFERENCE

Background

CHS Emergency Services service line has partnered with a LEAN Healthcare organization called X32 in an initiative to reduce length of stay (LOS) for low acuity patients (ESI Level 4/5). LOS is important because it has been linked to quality of care as well as patients perceived level of service excellence. Furthermore, studies have shown that when we reach a level of LOS less than 90 minutes patients rank their overall experience at or above the 85% top box score.

What is LEAN?

LEAN is a systematic approach to eliminating waste, in healthcare waste could mean eliminating overstock, excess and non-value added steps in processes as well as reducing movement of supplies and patients including eliminating waits.

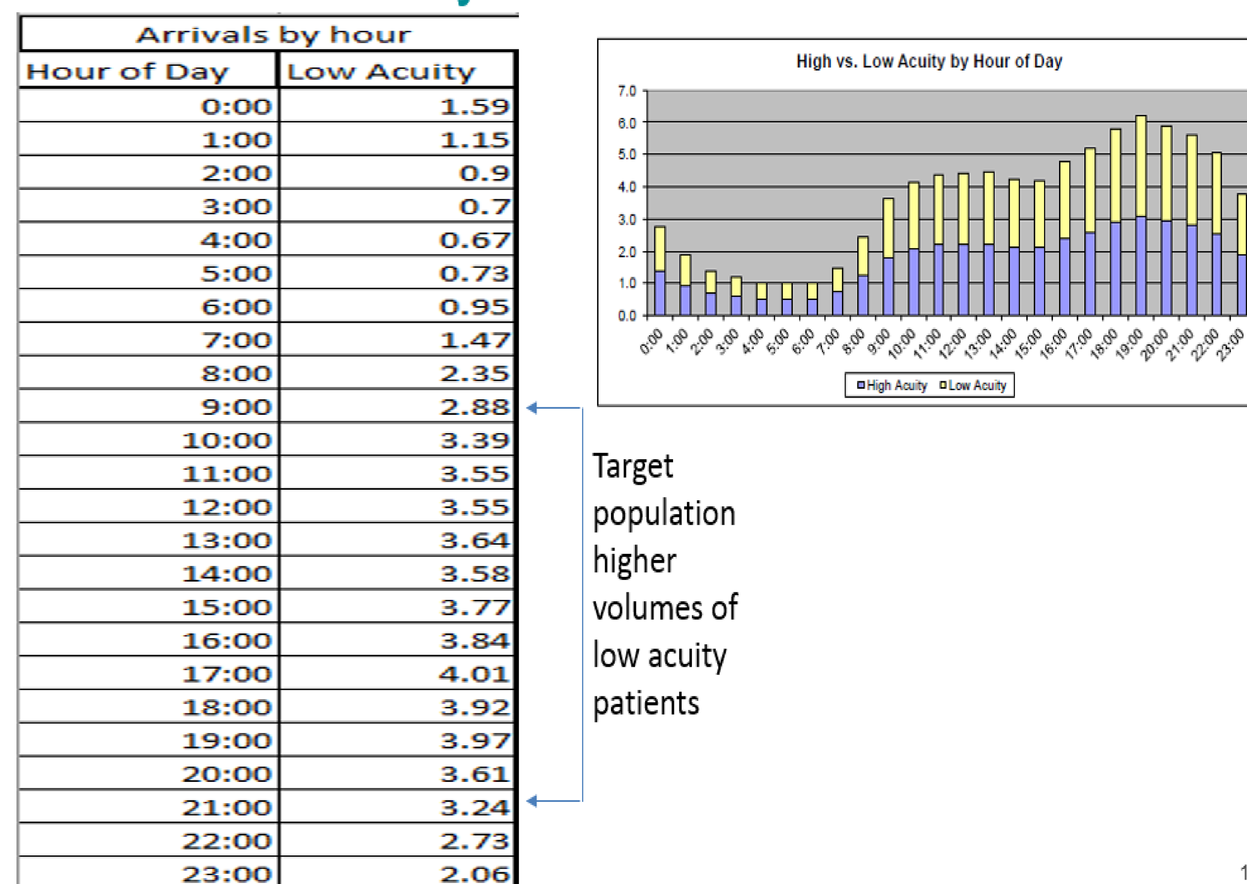
Problem

There is no identified plan or pathway to evaluate/treat/disposition low acuity patients. As a result, low acuity patients tend to wait longer to see the Emergency Physician. Creating lengthy ques of non-emergent patients results in overcrowded Emergency Departments and decreased throughput.

2015 Data

Average Daily Data	Sun	Mon	Tue	Wed	Thurs	Fri	Sat
Actual Avg Daily ED Volume	140	145	139	136	129	127	128
ESI 4,5 Volume	64	67	64	62	60	58	59
ESI 1,2,3 Volume	76	78	75	73	70	69	69

Arrival by hour ESI level 4 and 5



Arrivals by hour

Hour of Day	Low Acuity
0:00	1.59
1:00	1.15
2:00	0.9
3:00	0.7
4:00	0.67
5:00	0.73
6:00	0.95
7:00	1.47
8:00	2.35
9:00	2.88
10:00	3.39
11:00	3.55
12:00	3.55
13:00	3.64
14:00	3.58
15:00	3.77
16:00	3.84
17:00	4.01
18:00	3.92
19:00	3.97
20:00	3.61
21:00	3.24
22:00	2.73
23:00	2.06

2015 Data Continued

Inputs

Input	Value
Yearly ED volume	49,384
% EMS Arrivals	14%
% ESI 4/5	46%
% ED Patients are Admitted to Hospital	14%
Current Walkout Rate (LWOBS)	2%

Beds

Beds	Count
Triage Bed Count	2
ED Bed Count	24

Is your ED the appropriate size?

Annual Volume Divided by Number of Beds *	2,058
* IHI Avg is around 1,500 annual visits per ED bed	

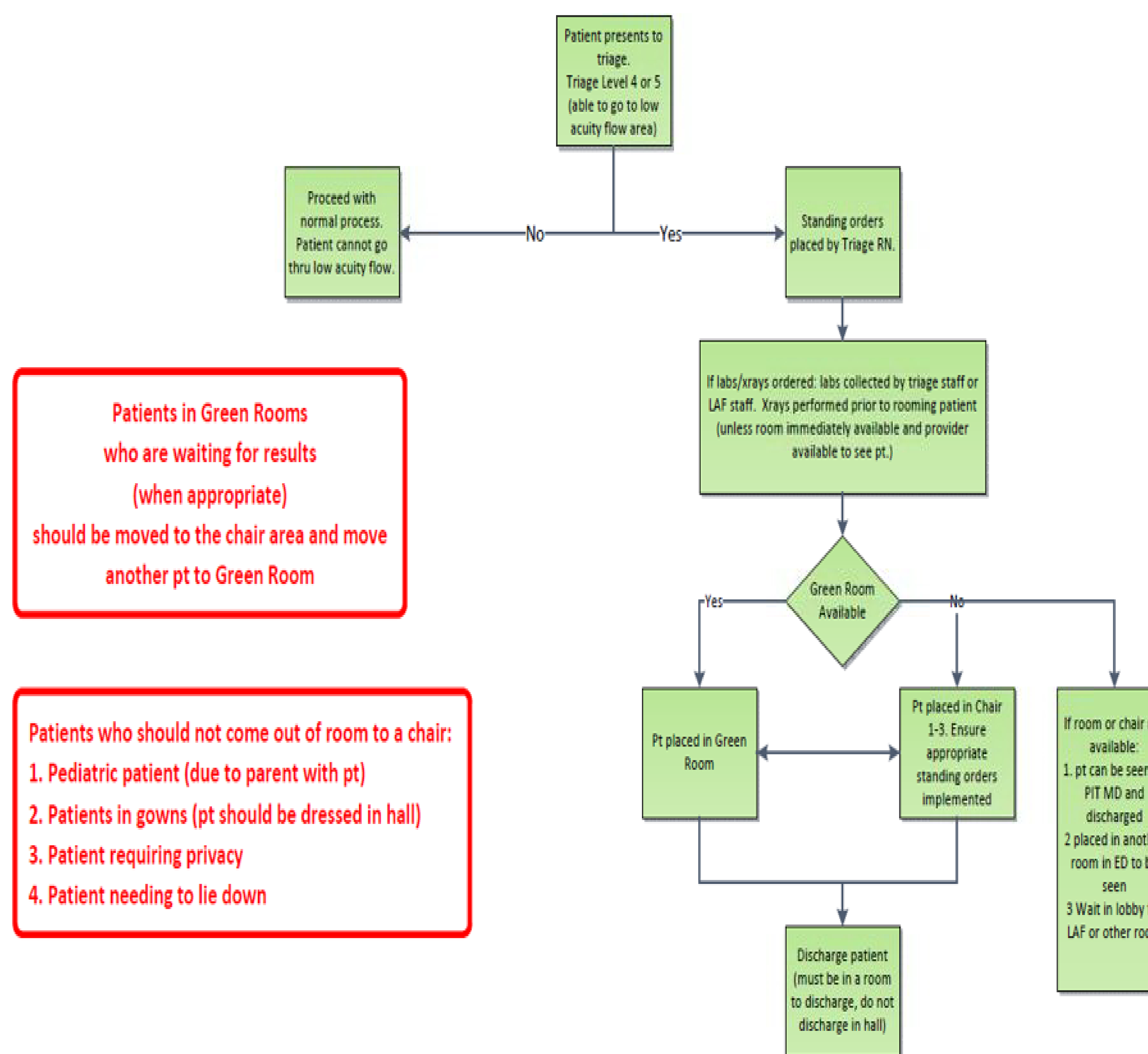
Careful! This is as much a measure of efficiency as it is a measure for capacity (i.e. the lower your LOS, the higher you can push this target)

Aggregate Patient LOS	147	Patient Min

2015 Baseline LOS for low acuity patients was approximately 135 minutes, using LEAN methodology, if we can reduce low acuity LOS to less than 90 minutes we can effectively see 3 patients in this new process in the amount of time that we would have seen only 2 patients in the prior state.

Process Evolution

April 2016 Emergency Department leadership team attended initial training session with X32 facilitators. A plan to implement a rapid low acuity track was initiated. Over the course of the next several months, weekly meetings were held with key stakeholders in the Emergency Department. A care flow map was developed with input from the entire care team. This team also redesigned the nurses station to align with LEAN values of eliminating waste in movement and supplies.



Process Evolution

- ED tracking board had to be modified to include changes in location and naming of new treatment areas. Additional beds were added to tracking board and colors were changed to assist in visualization of new care area.
- Staff were trained to this new care paradigm in a classroom setting, 2015 data was discussed to set a baseline for improvement.
- Additional physical signage was installed.
- Early August new mid-level provider was onboarded by Physician leadership to assist in the Direct Care tract.

Implementation

- August 15, 2016-Go Live Date. Initially started the new care area operating from 1200-2100 as we identified that these hours were the highest arrival hours of low acuity patients.
- One PA and one RN operating 3 beds and 3 chair treatment area.
- ED leadership worked side by side with this team to identify issues.
- Manual process was implemented to ensure triage was done appropriately and tract patients seen through this care area.

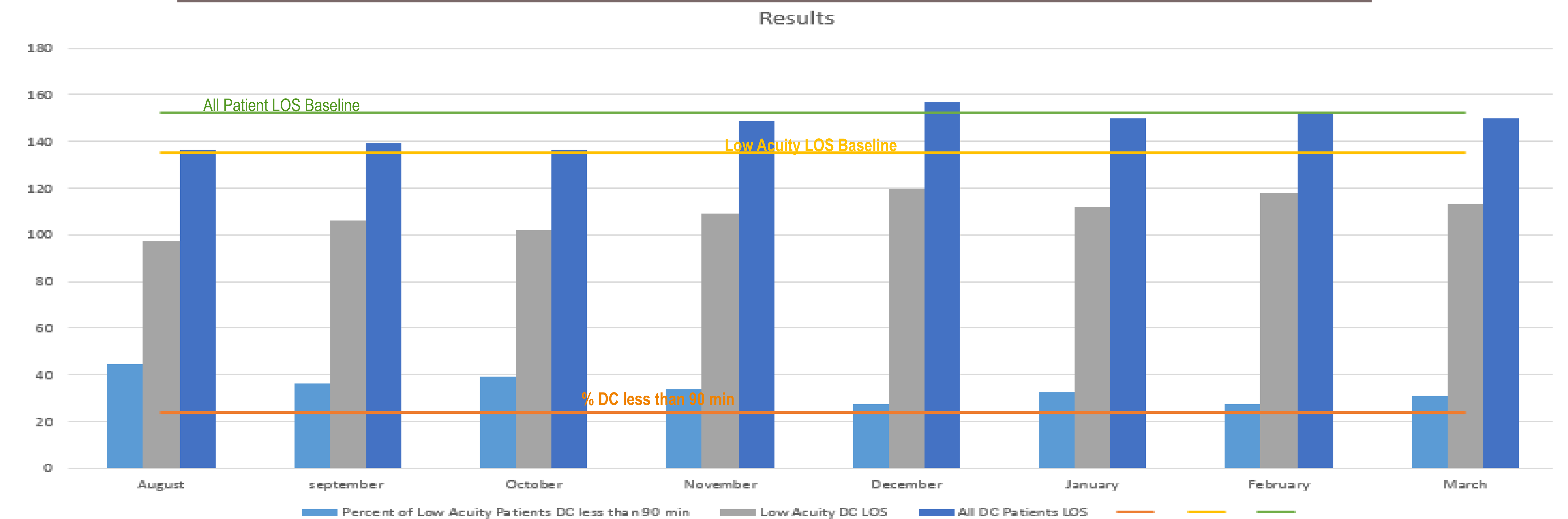
Results Explained

- CHS Lincoln was awarded the X32 Xcellence Award for most decreased length of stay in low acuity patients 2016.
- The Emergency Department was able to decrease the overall LOS for low acuity patients from a median of 130 minutes in Q1 and Q2 of 2016 to a median of approximately 100 minutes since the implementation of our care redesign.
- Median Door-to-Doc decreased from and average of 52 minutes in Q1/Q2 2016 to approx. 32 minutes.

Lessons Learned……

- To be successful we must ensure appropriate patients are being triaged to this accelerated tract. Additional triage education was necessary.
- Can be difficult to onboard new midlevel providers to this area. Requires an experienced provider that is comfortable making dispositions without a great deal of testing.
- Having appropriate staffing in place at time of patient arrivals is key to meeting this goal of 90 minutes.
- The idea of discharging low acuity patients quickly requires a culture change within the Emergency Department.

Results



Ongoing Process Improvement

- Meet with Physician and lead Mid-Level provider on an ongoing bases to evaluate improvement/challenges.
- Utilized online staffing module based on historical data to align staff shifts and hours of operation of low acuity track. Staffing must match patient demands.
- Throughput is discussed daily in each shift huddle to understand what worked well and what did not from prior day.
- Periodical check-ins with X32 Consultants.

Contact information

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