



# Going With the Flow: Collaborative Throughput Initiatives Improve Quality Metrics

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## Background/Purpose

- ED overcrowding is costly and contributes to compromised patient care.
- AHRQ recommendations for improvement include creation of a patient flow team, evaluation of ED metrics, and initiatives to improve overall patient flow.

**Aim:** Reduce our Children's ED's LOS and Admission Order to Departure time to be in the top 10% nationally (i.e., AOTDT <38 mins)

## Design, Setting, and Sample

- Design: PDSA with Shewhart Chart SPC analysis of variance
- Setting: a free-standing CED that serves:
  - Raleigh, NC and it's surrounding cities
  - Patient ages 0-18 years
  - 45,000 patient visits/year
  - Affiliated with a 919-bed teaching hospital that serves as a Level 1 trauma center
- Sample: CED patients who were subsequently admitted over a 2 year period (May 2017 – May 2019).

## Learning Objective

Participants will be able to discuss how the described patient throughput initiatives might be applied in their own ED setting.

## Methods

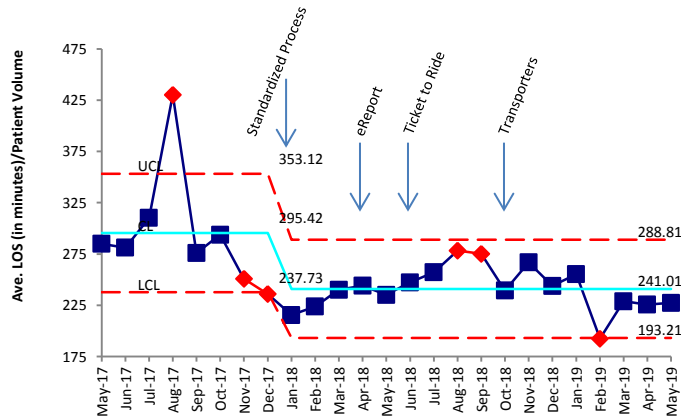
- ED and inpatient pediatric leadership and MDs, our designated patient flow committee, and 2 data analysts met to review throughput data and develop strategies to address barriers & facilitators to flow.

### Strategies Implemented in 2018:

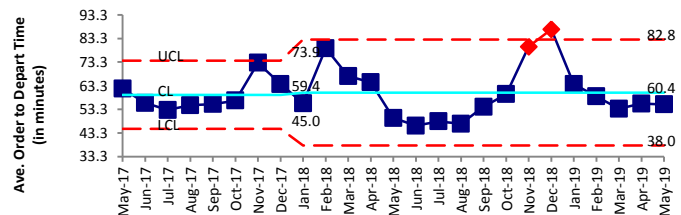
Jan	Created standard work	Standardized the transportation process following the assignment to an inpatient bed
Apr	Facilitated relay of clinical data to providers	Electronic nursing report (eReport) created and implemented between ED and inpatient nursing staff
Jun	Reminded clinicians	"Ticket to Ride" form created to summarize eReport priorities at inpatient handoff
Oct	Revised roles	Inpatient transporters began transporting patients to their assigned inpatient beds.

CHILDREN'S ED TICKET TO RIDE	
Last Name:	
Room Assigned:	Please circlefill out as applicable
PT Condition:	Better Worse Same
Diagnosis/Complaint:	
Outstanding Orders:	Yes No What:
Procedures:	
Last VS & Pain:	HR RR BP O2 Sat Temp Pain
Reassess/Concerns:	
IV:	Yes No Difficult/stop
Follow Up:	Yes No
RN Name:	Number: ID-XXXX

## Results



Shewhart X chart analysis of variance (3 sigma) shows primarily common cause variation. We are unable to attribute instances of special cause variation to any particular process change. However, statistically insignificant trends towards less variance and shorter LOS may be emerging.



The X chart for Admission Order to Departure time, shows data varying normally without special cause, suggesting a stable process unaffected by improvement initiatives.

## Conclusions

- Over the 2 year period:
  - Admission Order to Departure time decreased 23% (64.6 to 49.91 minutes)
  - LOS decreased 8% (297 to 274 minutes)
- New initiatives saved nurses a total of 225 minutes per month of patient care time.
- Coincidentally, ED patient satisfaction improved and was well over the 90<sup>th</sup> percentile for two quarters!

## Implications for Practice

- Standardizing a transport process for admitted patients and utilizing an eReport for nursing handoff should be evaluated further for process improvements
- Strategies to improve admission order and bed assignment times should be investigated to assess for improvement of patient flow



## Acknowledgements

Thank you to Brittany Komansky MHA, BSN, RN, CEN for your support and advocacy in these efforts and to Pat Woltz PhD, RN for your research wisdom!