Inpatient Boarding

Strategies for Overcoming Operational Challenges

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The Problem

- “Boarding of admitted patients in the ED represents a **hospital-wide failure** and contributes to lower quality of care, decreased patient safety, reduced timeliness of care, reduced patient satisfaction, an increased number of patients leaving without being seen, and increased mortality. Additionally, it directly contributes to ED crowding due to the resultant loss of bed and resource capacity.”

- ‘Boarding of Admitted and Intensive Care Patients in the Emergency Department’ ACEP policy statement revised February 2023

Original Contribution

ED overcrowding is associated with an increased frequency of medication errors

Erik B. Kulstad MD, MS, Rishi Sikka MD, Rolla T. Sweis PharmD, Ken M. Kelley MD, Kathleen H. Rzechula RN

J Emerg Med. 2012 Oct;43(4):736-44. doi: 10.1016/j.jemermed.2011.06.131. Epub 2012 Feb 9.

An association between occupancy rates in the emergency department and rates of violence toward staff

Dylan B Medley [1], James E Morris, C Keith Stone, Juhee Song, Thomas Delmas, Kunal Thakrar

Price for waiting: the adverse outcomes of boarding critically ill elderly medical patients in the emergency department FREE

Kuang-Wen Huang, Chun-Hao Yin, Renin Chang, Jin-Shuen Chen, Yao-Shen Chen

Postgraduate Medical Journal, Volume 100, Issue 1184, June 2024, Pages 391–398, https://doi.org/10.1093/postmj/qgae006

Published: 02 February 2024 **Article history**

The Problem

- October 2024—first article detailing $$ impact, nearly double the cost for a non-ICU patient to board in the ED (not including loss of access to beds for new pts, staff inefficiencies and potential malpractice suits)

Observational Study > Ann Emerg Med. 2024 Oct;84(4):376-385.
doi: 10.1016/j.annemergmed.2024.04.012. Epub 2024 May 24.

Measurement of Cost of Boarding in the Emergency Department Using Time-Driven Activity-Based Costing

Maureen M Canellas [1], Marcella Jewell [2], Jennifer L Edwards [3], Danielle Olivier [3], Adalia H Jun-O'Connell [4], Martin A Reznek [3]

- What definition do you use for "boarding"-vague: decision to admit to departure from the ED (we use > 60 minutes)

BECKER'S
Hospital CFO Report

Financial Management

The costs of ED boarding: 4 takeaways

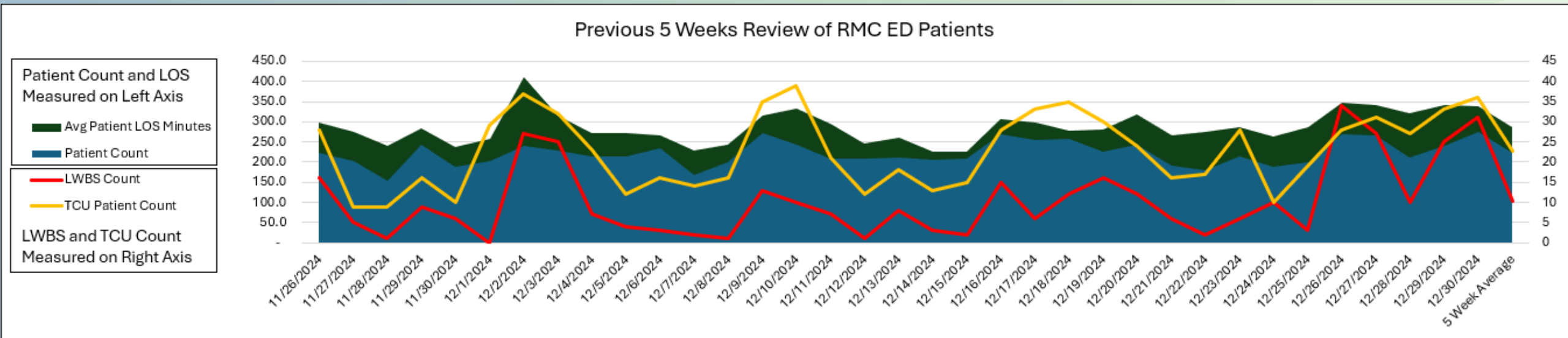
Mackenzie Bean (Twitter) - Thursday, October 17th, 2024

Leadership engagement: Whole facility issue NOT an ED issue

- What you see vs what they see
- We see misery in the hallways, risk, risk, risk, overrun nursing staff, burnout of ED staff, slow to no bed turnover, pts leaving without care….
- They see SNF & Rehab delays, guardianship delays, room for surgical/specialty procedure pts, LWBS/LWOT/LBTC, $$$

Make it make sense

- Is your site tracking LWBS/LWOT?
- Speak on their level
- LWBS curve correlates to boarding hours



Facility-wide issue

- Must have leadership buy-in/support
  - Help them understand
  - Give them the vocabulary
  - Will need their help (facility at least) to execute needed change

NEDOCS

- National Emergency Department Overcrowding Score
  - Introduced by Weiss et al. 2004
  - Standardized framework to assess ED crowding
  - Score ranges from 0-180
  - Components: number of ED beds, number of inpatient beds, number of pts in the ED, number of inpatients in the ED, longest inpatient boarding time, longest waiting room time & number of patients on ventilators in the ED
    - **0–50**: Not busy
    - **51–100**: Busy
    - **101–140**: Overcrowded
    - **141–180**: Dangerous
    - **Above 180**: Disaster

S.J. Weiss, Et al. “Estimating the degree of emergency department overcrowding in academic medical centers: results of the national ED overcrowding study” Acad Emerg Med, 11(1) (2004), pp. 38-50.

NEDOCS

- Available tool in EPIC
- VALIDATE FOR YOUR SITE (do this work up front)
  - Reassure everyone this isn't alarmist (ie: can hv 90 pts in the ED but the score is in the busy range)
  - Can be posted on the ED map for department visibility
  - And on capacity management boards
  - Color code it!

NEDOCS Sc	Surge Level	ED Patients	Admits	Longest Admit Hold	ICU Holds	Waiting Room	Longest LOS in WR	
163.8	Dangerous/Tier 3	64	36	55 hours	1	9	3 hours 30 minutes	1/3 0700
162.08	Dangerous/Tier 3	82	34	59 hours	1	10	1 hour 30 minutes	1/3 1000
182.85	Disaster/Tier 4	88	35	62 hours	4	9	1 hour 20 minutes	1/3 1345
172.78	Dangerous/Tier 3	92	25	65 hours	2	17	2 hours	1/3 1630
120.82	Overcrowded/Tier 2	67	30	38 hours	5	9	2 hours 20 minutes	1/4 0700
150.14	Dangerous/Tier 3	87	34	41 hours	6	6	45 minutes	1/4 1000
133.57	Overcrowded/Tier 2	105	19	27 hours	8	41	4 hours	1/4 1700
80.03	Busy/Tier 1	52	21	17 hours	7	5	1 hour 15 minutes	1/5 0730

Surge plan

- Everyone has one
- Last time it was looked at?
  - Dust it off!
  - Link surge tiers to NEDOCS and make each job role detailed and well defined
  - Positions included in our Job Aid: ED Manager, ED Director, ED Medical Director, Nursing Supervisor, Bed Mgmt, Transfer Center, Inpt Unit Managers, Inpt Directors, EVS, Imaging, Lab, Hospital Transport, Inpt Medical Directors/CMO, Admin On-Call, Staffing, Facility Leadership & Emergency Management

Surge Tier NEDOCS Score	Normal Operations 0 - 50	Tier 1 Surge/Green (Busy/Extremely Busy) 51 – 100	Tier 2 Surge/Yellow (Overcrowded) 101 - 140	Tier 3 Surge/Red (Severely Overcrowded) 141 - 180	Tier 4 Surge/Black (Dangerously Overcrowded) >180
ED Charge Nurse	• Consider the pace new patients are arriving. • Review LOS of patients in rooms. • Lead regular provider/CN huddles at: 0600, 1300, 1600, 2300.	• Evaluate for situations that could lead to surge. • Evaluate the pace of arriving patients. • Review LOS in VZ waiting room. • Review LOS of patient in rooms and RP. • Look for opportunities to proactively decompress volume. • Notify nursing supervisor of delays that are impacting admissions. • Ensure discharges to home are completed within 20 min goal. • Ensure patients in the waiting room are being reassessed at required intervals	• Review LOS in VZ waiting room. • Review LOS of patient in rooms and RP. • Evaluate what is preventing the disposition on patients- delays in lab/imaging, etc. • Evaluate for discharges that can be expediated. • Evaluate for opportunities to expand ED capacity (iresults, hallways, surge)	• Review LOS in VZ waiting room. • Review LOS of patient in rooms and RP. • Evaluate what is preventing the disposition on patients- delays in lab/imaging, etc. • Evaluate the ability to move patients out of rooms to alternate waiting areas. • Evaluate for discharges that can be expediated. • Evaluate for opportunities to expand ED capacity (iresults, hallways, surge) • Evaluate need for additional staffing resources (Nursing, providers, support roles)	• Continue all actions in prior tiers. • Evaluate the ability to move patients out of rooms to alternate waiting areas. • Consider alternate areas for inpatient boarders (surge, OBS, PCA, additional hallways) • Collaborate with the lead provider and/or IR 3 provider to prioritize waiting patients

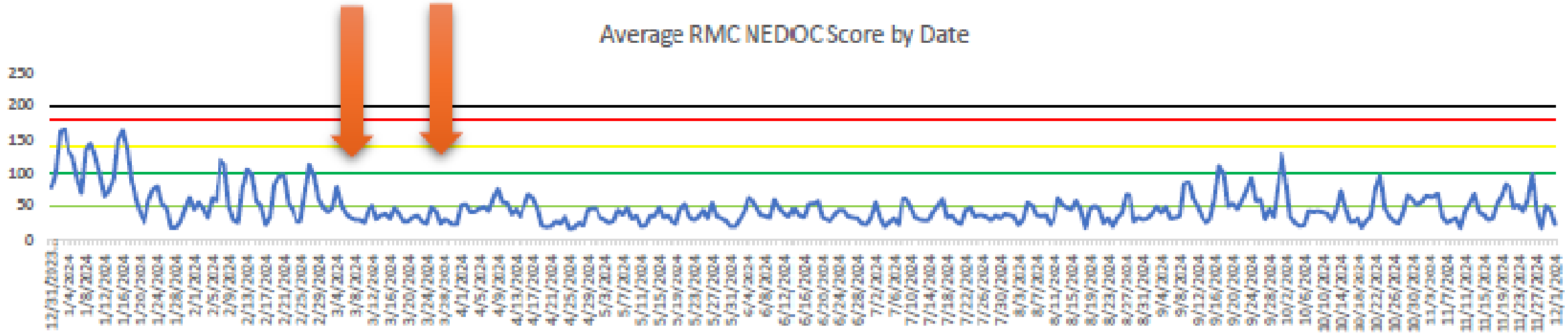
Old dogs, New tricks

- Some strategies included
  - Hallway to hallway transfers
    - “Transitional Beds”
  - EVS room turn around tracking
  - Discharge lounge

Take your show on the road

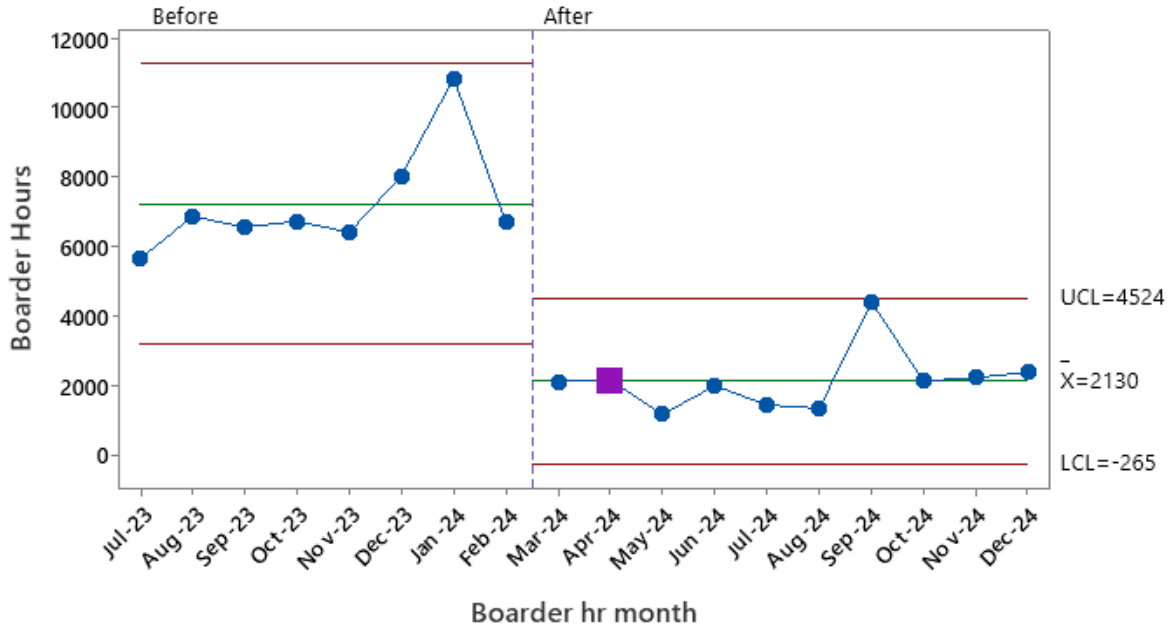
- Educate and notify
  - ED leadership with facility leadership
  - Include stakeholders in specific action development where appropriate
  - Facility-wide awareness is essential
    - Notification is sent out to every desktop in the facility every 3 hours in advance of facility-wide bed planning meeting

RRMC ED is in Surge Tier 3. Please follow ED surge plan job action shee


Average RMC NEDOC Score by Date
250
200
150
100
50
0

RRMC Hours Boarded by Month

Before and After Full Discharge Lounge Implementation

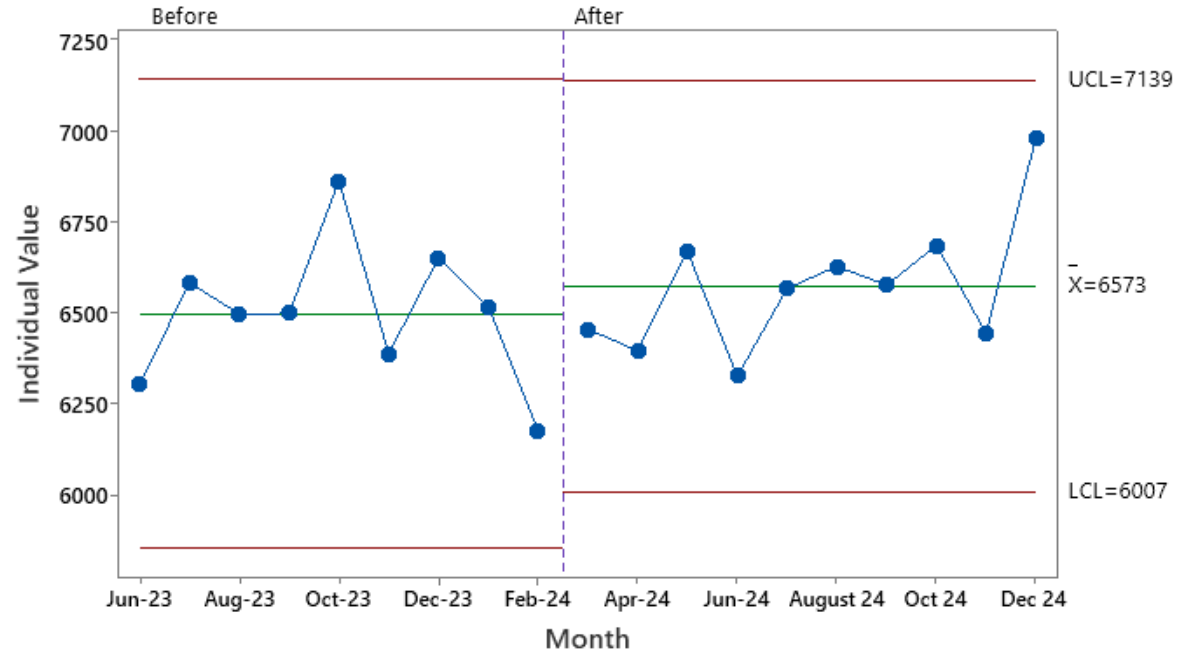


Source: ED Monthly Dashboard

Purple Square- 1st full month of NEDOCS (launched March 25, 2024)

Number of ER visits by Month

Before and After Full Discharge Lounge Implementation



Source: ED Monthly Dashboard

System capacity management

- Transfer center
  - Transfer status notification to facilities
  - Banner notification
  - Transport contracts for discharged patients

  - Future direction to include incorporation of ED surge status
    - Routing of non-emergent ambulance transport, evals from LLH etc to ED with capacity
    - Notice system-wide of transfer and ED surge statuses

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Transfer Color Code Status

		2024			2023		
		Red	Amber	Green	Red	Amber	Green
Jan	Days	15	16	0	15	15	1
	%	48%	52%	0%	48%	48%	4%
Feb	Days	9	20	0	7	18	3
	%	31%	69%	0%	25%	64%	11%
Mar	Days	0	14	17	6	21	4
	%	0%	45%	55%	19%	68%	13%
Apr	Days	0	14	16	9	21	0
	%	0%	47%	53%	30%	70%	0%
May	Days	0	0	31	4	27	0
	%	0%	0%	100%	13%	87%	0%
June	Days	0	13	17	12	18	0
	%	0%	43%	57%	40%	60%	0%
July	Days	0	3	19	5	26	0
	%	0%	14%	86%	16%	84%	0
Aug	Days	0	2	29	11	20	0
	%	0%	7%	93%	36%	64%	0%
Sept	Days	2	18	10	14	16	0
	%	7%	60%	33%	47%	53%	0%
Oct	Days	3	10	18	9	22	0
	%	10%	32%	58%	29%	71%	0%
Nov	Days	0	9	21	9	21	0
	%	0%	30%	70%	30%	70%	0%
Dec	Days	0	4	27	9	22	0
	%	0%	13%	87%	29%	71%	0%

Legend: Red: >10% on Red Amber: ≤10% Red and Amber > Green Green: ≤10% Red and Green > Amber

Consider this…

- Can we do any of this safely
  - Lab draws, dietary
  - Nursing for inpatient holds
  - Rapid response (who responds?)

Questions?