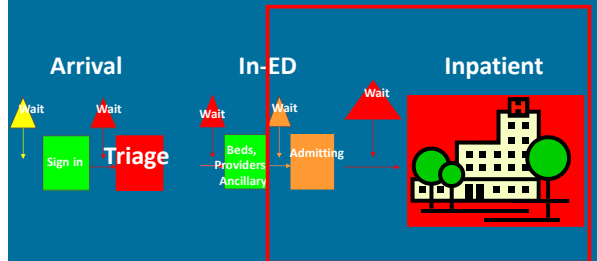


ED and Hospital-wide Flow Best Practices

Jody Crane, MD, MBA

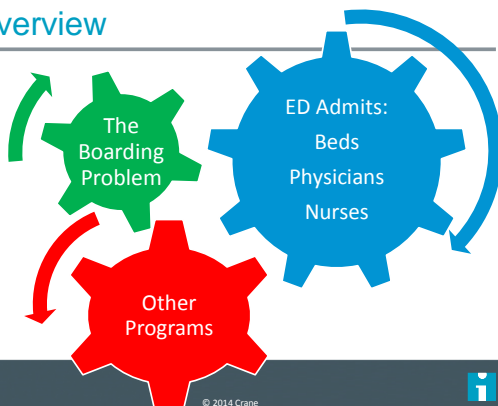
March 13th, 2014
Denmark

Admitting/Inpatient



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Overview



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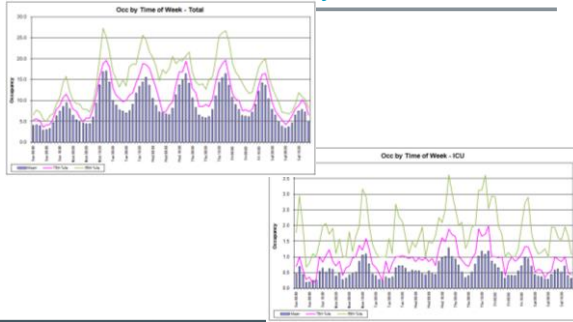
The Boarding Problem

- Hospital Overcrowding and Boarding is the most serious problem we face as EDs
 - Patients tie up critical bed resources
 - More importantly, critical nursing resources



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Boarding Occupancy

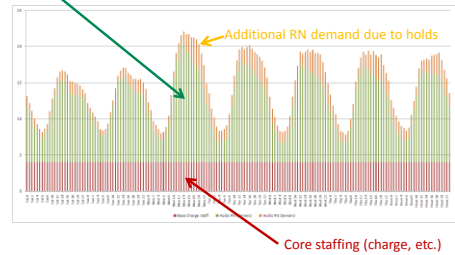


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Staffing Analysis – RN Demand Layers and Current Staffing

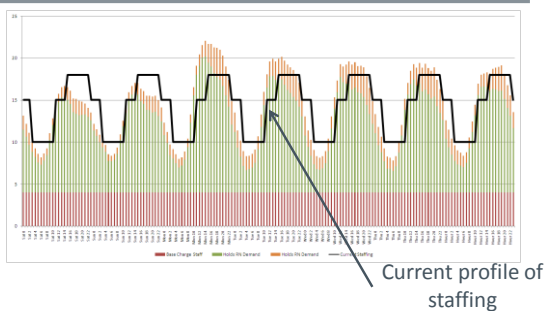
Direct patient care, through the point of disposition



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Staffing Analysis – RN Demand Layers and Current Staffing



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The Boarding Problem

- Hospital Overcrowding and Boarding is the most serious problem we face as EDs
- Patients tie up critical bed resources
- More importantly, critical *nursing* resources
- Quality, Satisfaction, and flow suffer as a result



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Academic Emergency Medicine
Official Journal of the Society for Academic Emergency Medicine

The Effect of Hospital Occupancy on Emergency Department Length of Stay and Patient Disposition

Alan J. Forster MD, MSc^{1,2}, Ian Stell MD, MSc^{1,2,3,4}, George Wells PhD^{2,4}, Alexander J. Lee BSc⁴, Carl Van Walraven MD, MSc^{1,4,5}

Article first published online: 26 JUN 2008
DOI: 10.1197/aeem.10.2.127
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Issue
Academic Emergency Medicine
Volume 10, Issue 2, pages 127-133, February 2003

The ED length of stay appeared to increase extensively when hospital occupancy exceeded a threshold of 90%. Consultation and admission rates were not influenced by hospital occupancy.

Conclusions: Increased hospital occupancy is strongly associated with ED length of stay for admitted patients. Increasing hospital bed availability might reduce ED overcrowding.

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Acad Emerg Med. 2009 Jan;16(1):1-10. doi: 10.1111/j.1553-2712.2008.00296.x. Epub 2008 Nov 8.

The effect of emergency department crowding on clinically oriented outcomes.

Barnstein DL,¹ Sosnoski D, Quasius R, Easton S, Handel D, Heavens U, McCarthy M, John McConnell S, Pines JM, Rathlevy S, Schallermeier R, Zwemer F, Schul M, Sasin RB. Society for Academic Emergency Medicine, Emergency Department Crowding Task Force

Author information

Abstract
BACKGROUND: An Institute of Medicine (IOM) report defines six domains of quality of care: safety, patient-centeredness, timeliness, efficiency, effectiveness, and equity. The effect of emergency department (ED) crowding on these domains of quality has not been comprehensively evaluated.
OBJECTIVES: The objective was to review the medical literature addressing the effects of ED crowding on clinically oriented outcomes (COOs).
METHODS: We reviewed the English-language literature for the years 1989-2007 for case series, cohort studies, and clinical trials addressing crowding's effects on COOs. Keywords searched included "ED crowding," "ED overcrowding," "mortality," "time to treatment," "patient satisfaction," "quality of care," and others.
RESULTS: A total of 369 articles were identified, of which 41 were kept for inclusion. Study quality was modest; most articles reflected observational work performed at a single institution. There were no randomized controlled trials. ED crowding is associated with an increased risk of in-hospital mortality, longer times to treatment for patients with pneumonia or acute pain, and a higher probability of leaving the ED against medical advice or without being seen. Crowding is not associated with delays in reperfusion for patients with ST-elevation myocardial infarction. Insufficient data were available to draw conclusions on crowding's effects on patient satisfaction and other quality endpoints.
CONCLUSIONS: A growing body of data suggests that ED crowding is associated both with objective clinical endpoints, such as mortality, as well as clinically important processes of care, such as time to treatment for patients with time-sensitive conditions such as pneumonia. At least two domains of quality of care, safety and timeliness, are compromised by ED crowding.

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MJA 100 YEARS The Medical Journal of Australia 1914-2014

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Contents list for this issue

The association between hospital overcrowding and mortality among patients admitted via Western Australian emergency departments

Peter C Spruit, Julie-Ann Da Silva, Ian G Jacobs, George A Jelinek and Amanda R L Frazer
Wed 1 April 2008, 194 (3): 209-212

20-30% increased risk of mortality associated with longer ED LOS and prolonged physician times

Conclusions: Hospital and ED overcrowding is associated with increased mortality. The Overcrowding Hazard Scale may be used to assess the hazard associated with hospital and ED overcrowding. Reducing overcrowding may improve outcomes for patients requiring emergency hospital admission.

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ED and Hospital Crowding Compromises Quality

- Several studies have presented clear evidence that crowding contributes to poor quality care
- When capacity is exceeded errors are more likely to occur

Increase in patient mortality at 10 days associated with emergency department overcrowding

Drew B Richardson MJA 2008; 194 (3): 219-21
Introduction — Methods — Results — Discussion — Conclusions — Acknowledgements — Competing interests — References — Author details
Abstract Objective:

Impact of Delayed Transfer of Critically Ill Patients from the Emergency Department to the Intensive Care Unit

Chenle, Joseph B, KD, MD, FRCPC, Trowell, Stephen MD, MPH, University, Toronto, Ontario, Canada, Singh, MD, MD, FRCPC, Chicago, Illinois, MD, FRCPC

Abstract and Introduction
Abstract
Objective: Numerous factors can cause delays in transfer to an intensive care unit for critically ill emergency department patients. The impact of delays in transfer is unknown. We aimed to determine the association between emergency department boarding (delaying admitted patients in the emergency department pending intensive care unit transfer) and outcomes for critically ill patients.

Design: This was a cross-sectional analytical study using the Project IMPACT database (a nationwide U.S. database of intensive care unit patients). Patients admitted from the emergency department to the intensive care unit (2002-2003) were included and divided into two groups: emergency department boarding < 6 hrs (delayed) or emergency department boarding ≥ 6 hrs (nonboarding). Demographics, intensive care unit procedures, length of stay, and mortality were analyzed. Groups were compared using chi-square, Mann-Whitney, and unpaired Student's t-tests.

Setting: Emergency department and intensive care unit.

Patients: Patients admitted from the emergency department to the intensive care unit (2002-2003).

Interventions: None.

Measurements and Main Results: Main outcomes were intensive care unit and hospital survival and intensive care unit and hospital length of stay. During the study period, 50,322 patients were admitted. Both groups (delayed: n = 1,038; nonboarding: n = 49,284) were similar in age, gender, and demographic data, along with Acute Physiology and Chronic Health Evaluation II score in the subgroup for which it was recorded. Among hospital survivors, the average hospital length of stay was 12 (delayed) vs. 11 (nonboarding) days. In ED, intensive care unit mortality was 10.7% (delayed) vs. 9.7% (nonboarding). In-hospital mortality was 17.4% (delayed) vs. 15.9% (nonboarding). In the intensive care unit, mortality was 14.8% (delayed) vs. 13.8% (nonboarding). Among hospital survivors, the average hospital length of stay was 12 (delayed) vs. 11 (nonboarding) days. Among hospital survivors, the average hospital length of stay was 12 (delayed) vs. 11 (nonboarding) days. Among hospital survivors, the average hospital length of stay was 12 (delayed) vs. 11 (nonboarding) days.

Conclusions: Critically ill emergency department patients with a 6-hr delay in intensive care unit transfer had increased hospital length of stay and higher intensive care unit and hospital mortality. This suggests the need to identify factors associated with delayed transfer as well as specific interventions of delayed admission.

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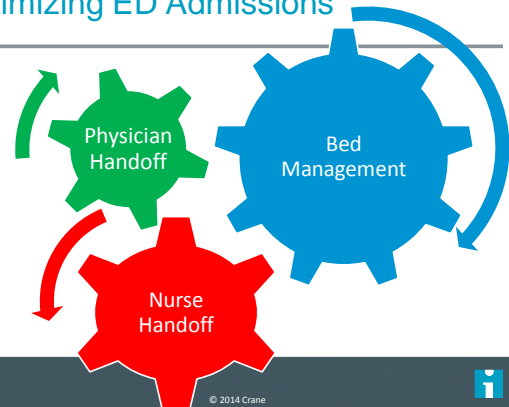
The ED is the Window into the Hospital



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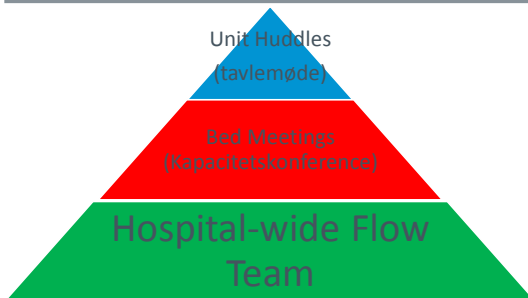
Optimizing ED Admissions



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Real Time Demand/Capacity Management

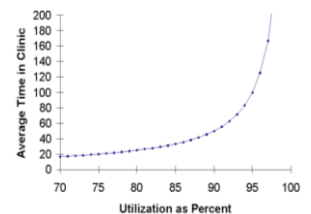


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Inpatient Bed Management

- High inpatient utilization results in queuing and longer LOS, translating into misplaced patients and ED boarders
- This requires 2 countermeasures:
 - Aggressive bed management
 - Improving processes to reduce LOS



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Admissions and Discharges

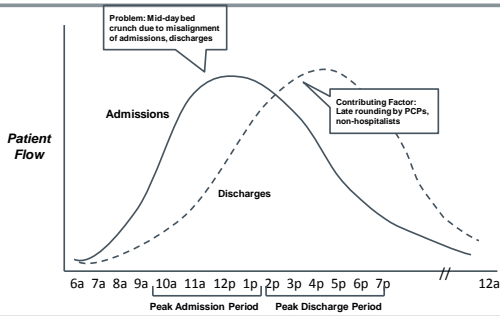
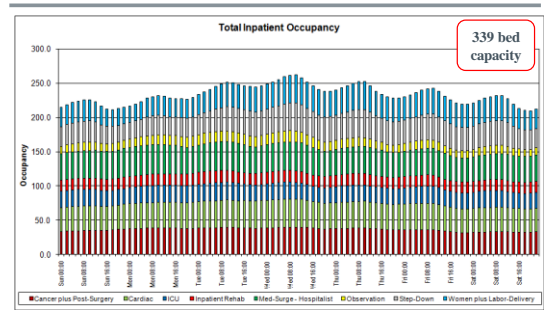


Figure: compliments of Kirk Jensen

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Understanding Demand...

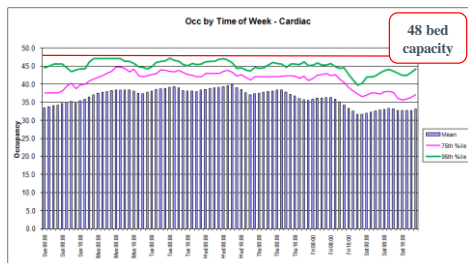


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Occupancy by Day of Week and Hour of Day

Cardiac Unit:

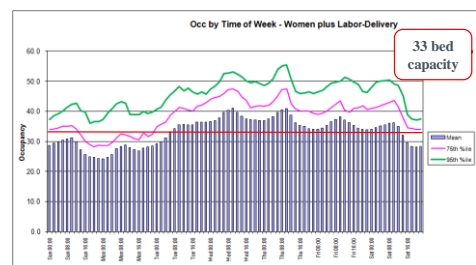


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Occupancy by Day of Week and Hour of Day

Women plus Labor-Delivery:



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Real-time Demand Capacity Management

- Provides a framework **connecting senior administration all the way to front line nurses**
 - Anticipate discharges to **understand available capacity**
 - Predict demand** of admissions from all sources
 - Provides **countermeasures** for demand/capacity mismatches
 - Provides for **specific tasks with time targets**
 - Escalation Plan**
- Allows for **evaluation of plan and targeting of strategic initiatives**



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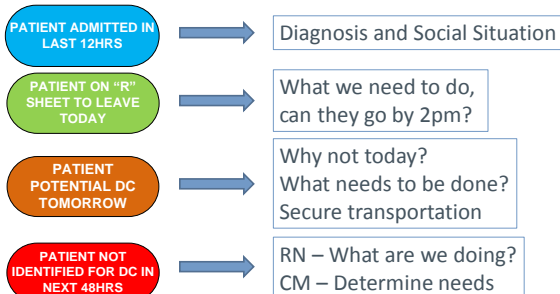
Unit Huddles

- Unit level meeting with Charge Nurse, Case Management, and Front Line Nurses
- Classify each patient based on discharge targets and gaps – goal is to establish demand needed by 2pm
- Create today's to do list – task oriented for front line nurses to meet the anticipated 2pm demand
- Determine who can be discharged today and what needs to be done for tomorrow's discharges

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Huddle Guidelines



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Huddle Output – “R Sheet”

Pt Name	Rm #	DC Need	"R" Name	Action to be taken	Time	2pm d/c Y/N
S. Jones	in 302	needs	O2 eval for home O2	Staff RN will Call RT to expedite	by 10AM	N
C. Brooks	in 312	needs	w/ c van for home transport	SW will Enter transport request into ECIN	by 9AM	Y
M. Long	in 316	needs	Results of AM H&H test	Staff RN will Call attending with results & get dc order	by 10AM	Y
T. Top	in 328	needs	PFTs	CM will Ensure pt on schedule today	by 9AM	N
	in	needs		will	by	
	in	needs		will	by	
	in	needs		will	by	

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Bed Meeting - Key Participants

Departments

- ED
- Transport
- PACU
- Cardiology
- Cath Lab
- EVS
- Radiology

People

- Nursing Supervisor
- Case Management
- Nursing Leadership
- Hospitalists

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Bed Meeting - Objectives

- Understand needs of individual nursing units
- Create a global picture of the hospital at that time
- Create system-level countermeasures for demand/capacity constraints
- Draft communication of today's demand/capacity picture

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Predicting Demand

- Outputs from all Units
- Color-coded to alert of Unit or Hospital status

No. of Units in Status Red: 5									
Area	Beds Occupied	Beds Available	Percent Occupancy	Area Status	Physical Bed Capacity	Physical Bed Utilization	Anticipated Discharges	Anticipated Transfers	
4 North	31	1	97%	Red	32	97%	0	0	
4 South	31	1	97%	Red	32	97%	3	0	
5 North	31	1	97%	Red	32	97%	3	0	
5 South	26	6	81%	Yellow	32	81%	5	0	
Total Medical	119	9	92%	Red	128	92%	11	0	
4 West	25	5	80%	Yellow	30	83%	2	0	
5 West	23	7	77%	Green	30	77%	2	0	
Total Surgical	48	12	80%	Yellow	60	80%	4	0	
Cardiac Telemetry (CT)	27	5	84%	Yellow	32	84%	2	0	
Stepdown Care (SC)	24	6	80%	Yellow	30	80%	0	0	
Intensive Care (ICU)	26	2	92%	Red	28	93%	7	0	
3 North	29	3	90%	Red	32	90%	0	0	
Total Cardiac	106	16	82%	Yellow	122	87%	9	0	
Med/Surg (MS)	26	4	85%	Yellow	30	87%	0	0	
U&C/Intensive Care	11	0	55%	Green	30	55%	0	0	
Pre/Post (PB)	24	6	80%	Yellow	30	80%	0	0	
Total Women's	61	19	76%	Green	60	76%	0	0	
Cardiac Cath/Hybrid (CCH)	7	1	86%	Yellow	8	88%	4	0	
Total	248	57	88%	Yellow	288	86%	27	0	

Predicting Demand

- Outputs from all Units
- Color-coded to alert of Unit or Hospital status
- ED Rolling average of 4 previous same days (Mondays)
- Direct admits
- Surgical schedule
- Generates a global picture

Total Anticipated D/C:	27
Total Anticipated Admits:	58
Sifters (1-11):	
Average ED Admits:	45
Direct Admissions (Include IR):	0
OR Cases to Place:	9
Caths:	2
Intusions:	2
Chemost:	1
HCU Census:	10
L & D Admits:	0
ED Patients to Place:	0
Nuclear Stress Tests:	0
Nursing Home Discharges:	0

Physical Beds Available:	57
Staffed Beds Available:	57
Anticipated Physical Bed Surplus/Deficit:	26
Anticipated Staffed Bed Surplus/Deficit:	26

**Capacity Management
Alert Box**

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Bed Meeting - Objectives

- Understand needs of individual nursing units
- Create a global picture of the hospital at that time
- Create system-level countermeasures for demand/capacity constraints
- Draft communication of today's demand/capacity picture
- Decide on and implement alert status

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Capacity Management Plan 2012
Strategy Implementation Tool – Stafford Hospital v.3

Level	Criteria with Action Items	Responsible Team	Duration
Green	Criteria: Capacity* at 85% or less and one or more of the following: <input type="checkbox"/> Monday census? <input type="checkbox"/> AM Census < 5 than previous day <input type="checkbox"/> Inpatient holds > 0 <input type="checkbox"/> Anticipated discharges exceed admissions. <input type="checkbox"/> All beds assigned within 10 minutes. <input type="checkbox"/> LOS as noted on PFSTAT dashboard is > than previous week.	NS monitors criteria.	24/7
Yellow	Criteria: Capacity* at 90% or greater and one or more of the following: <input type="checkbox"/> Monday census? <input type="checkbox"/> AM Census > 5 from previous day. <input type="checkbox"/> Anticipated admissions exceed discharges. <input type="checkbox"/> Either 2W or 3W in YELLOW. <input type="checkbox"/> Daily discharges not meeting goal of 40% by 1400 <input type="checkbox"/> Delays in all bed assignments > 10 minutes. <input type="checkbox"/> LOS as noted on PFSTAT dashboard is > than previous week by 10% (goal) <input type="checkbox"/> Inpatient holds > 1 in one or more entry points**	NS monitors criteria.	24/7
	Action: 1. EVS adjust all testing or testing* countermeasures for discharges. 2. Staff of Stafford meeting called for 0900, additional Staff of Stafford meetings held as demand warrants. 3. Case Management targets discharges partnering with FHS (based on demand warrants). 4. Hospitalist prioritize discharges as first team. 5. All pending and confirmed discharges maintained in Pre-Admit Tracking. 6. Discharges are removed from Soarian within 5 minutes of departure. 7. Ancillary departments prioritize discharged (potential and confirmed) for testing and results. 8. OP infusions rescheduled for later time of day. 9. Staff identified for opening and maintaining patients on AIV for at least 48 hours 10. All Ancillary departments prioritize discharged (potential and confirmed) patients for testing and reporting results.	1. EVS Leadership 2. NS/PCS 3. Case Manager 4. Hospitalist Leadership 5. HUCS 6. HUCS 7. Ancillary leaders 8. NS/HO 9. NS/PCS 10. Ancillary leaders	All action items maintained until Green Level maintained 48 hours or greater.

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Capacity Management Plan 2012
Strategy Implementation Tool – Stafford Hospital v.3

Level	Criteria with Action Items	Responsible Team	Duration
Red	Criteria: Capacity* at 95% or Greater. <input type="checkbox"/> Monday AM Census 5 patients greater than previous day. <input type="checkbox"/> 2W, 3W, and ICU with no admit capacity. <input type="checkbox"/> ICU at greater than 4 critically ill (intubated and/or vasoactive drip) patients <input type="checkbox"/> Inpatient holds > 1 in one or more entry points** <input type="checkbox"/> Admissions exceed pace of discharges. <input type="checkbox"/> Daily Discharges not meeting goal of 40% by 1400. <input type="checkbox"/> Delay in all bed assignments > 10 minutes. <input type="checkbox"/> LOS as noted on PFSTAT dashboard is > than previous week by 20% (goal)	NS monitors criteria.	24/7
	Action: 1. All meetings requiring Nursing Associate, PCS, and NMI attendance are cancelled. 2. All PCs and NMI on unit to operational flow. 3. ICU beds are used for medical overflow. 4. State of Stafford Meetings at 0900, 1400, and PHN. EVS, Case Management, Hospitalists in attendance. 5. Discharges are removed from Soarian immediately at time of departure. 6. Ancillary departments STAT discharged (potential and confirmed) for testing and results. 7. FHG and Non-FHG physicians notified of need to (push, back) and prioritize discharges. 8. OP infusion patients rescheduled if (push, back), or use an ancillary area if critical need or route to MIMV. 9. Operational opening AIV for up to 10 patients, for at least 48 hours 10. Initiate SHED admits to MIMV	1. Directors 2. NS/PCS 3. NS 4. NS 5. HUCS 6. HUCS/Ancillary 7. PCS/NS 8. NS 9. NS/PCS 10. NS notifies Senior Leadership	All action items maintained until Yellow Level maintained 48 hours or greater.
Black	Criteria: All conditions in Red are present; Volume demand exceeds capacity with all options exhausted. Action: 1. Incident Command activated. 2. Senior Leaders meet with Department Chiefs to consider rescheduling of elective procedures.	NS monitors criteria.	24/7
		1. NS notifies Senior Leadership of need. 2. Physician lead in IC.	IC in operation until Yellow Level attained.

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Bed Meeting – Key Outputs

Output Level	Example Actions
Unit Level	Call in physician to discharge, provide phone discharge, or cancel non-critical tests
	Nurse to triage patients on telemetry to free up monitors
System Level	Decide which patients will overflow on which units
	Implement “code” activities such as open PACU for boarders
	Prioritize physician rounding based on unit needs

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Escalation

- Senior Leadership (COO, CNO, CMO) should be engaged if implementation is failing at a system level
- Examples
 - Doctors are not responding to pages or are refusing to come in (I am in clinic)
 - Discharged patients are not leaving in a timely manner
 - There are delays in bed turnover that are not being solved at the Unit Manager level
 - Resistance to patient movement during crisis times because, "we are too busy"

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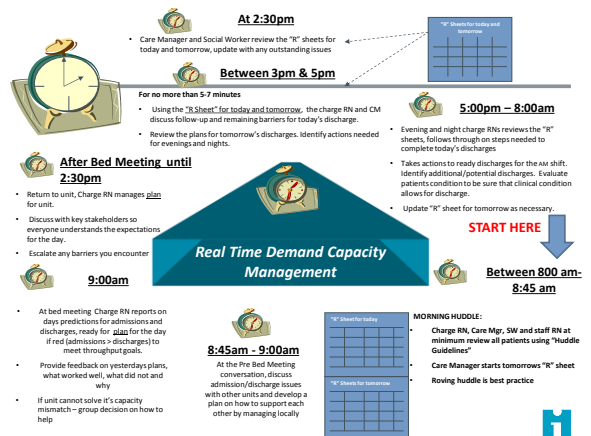
Hospital-wide Patient Flow

Monthly Patient Flow Excellence Accountability Team (PFEAT) Dashboard											
PERFORMANCE INDICATOR		Tue	Wed	Thurs	May	June	July	Aug	Sep	Oct	
1) Average Daily Census - All (excl. Pock, Nur, NICU)											
2) Equivalent ADC (includes observation patients) - All (excl. Pock, Nur, NICU)											
3) Inpatient Admissions - All (excl. Pock, Nur, NICU)											
4) Emergency Department - Admitted Patients											
5) Emergency Department - Treated and Released Patients											
6) Total ED Visits											
7) ED Admission Rate											
8) Average Time - arrival to start triage (all patients) (Kelly M.)											
9) Average Time - arrival to ED bed assignment (all patients) (Kelly M.)											
10) Average Time - door to doctor (all patients) (Kelly M.)											
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100) Average Time - door to doctor (all patients) (Kelly M.)											

Dansk Øjeblik



HOLGER MØLLER HANSEN, 1951
Invented the fiberoscope (endoscope)



If you Don't Have an Inpatient Problem, Look at Your Process

Current "Decision to Admit to Bed Assignment"	140	minutes
Benchmark "Decision to Admit to Bed Assignment"	30	minutes
Current "Bed Assignment to Leave Department"	143	minutes
Benchmark "Bed Assignment to Leave Department"	30	minutes

- Long decision to bed assignment times
- Long bed assignment to departure times
- Similar whether "crowding" or high census is present or not

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Real Scenario

- Began working with an ED in October, 2010 associated with architecture work
- Began improvement efforts just as Winter Census was peaking (Jan/Feb 2011)
- Boarding was a major problem
- In June/July, frequently heard, "We don't have boarding," in fact, every day, inpatient beds were closed due to "low census."
- What was the reality?

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What's the Answer?

	Sun	Mon	Tues	Wed	Thur	Fri	Sat	Weekly	% Change from Peak
Apr-Jun 2010	181.88	260.31	326.45	305.32	295.69	304.42	171.20	1,845.27	-27%
Jul-Sep 2010	164.33	257.73	308.88	300.05	271.09	242.01	165.83	1,709.92	-32%
Oct-Dec 2010	196.19	303.79	357.20	320.34	312.61	301.33	218.38	2,009.83	-21%
Jan-Mar 2011	194.25	319.57	414.63	482.65	469.23	418.98	233.60	2,532.90	0%

In other words 78% of boarding was process-related, or system-induced

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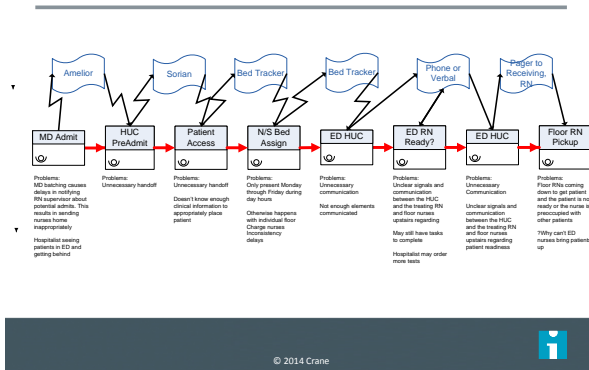
How do we fix this?

- Floor unable to take patient
- MD delay
- Bed not ready
- RN busy with another patient
- Inappropriate assignment
- Change in patient status
- Ancillary care provider delay
- Patient requesting delay
- Patient not assigned to a nurse
- No one to transport patient

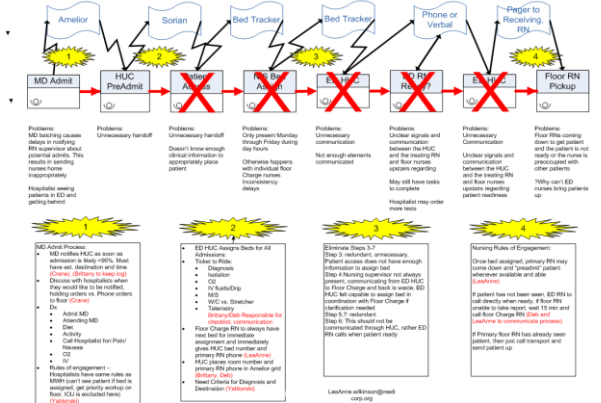
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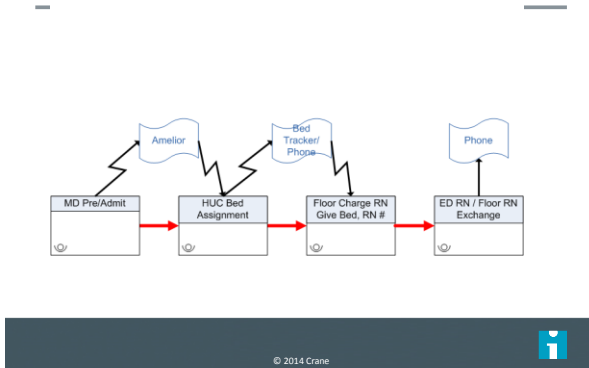
Stafford Admitting Process Current State



Stafford Admitting Process Changes Planned

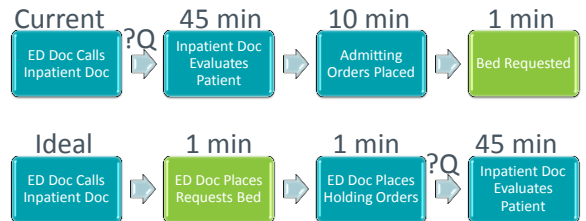


Stafford Admitting Process Desired Future State



The Physician Handoff

- The clock starts when the ED physician knows what to do with the patient



Early Decision To Admit

- System to admit patients as soon as need for admission known
- Must have reasonable understanding of:
 - Diagnosis
 - Destination
- Coordination with admitting physicians:
 - What types of patients are ok for quick admit and which are not
 - What labs are required for specific destinations (ICU, tele, floor)
 - System to review cases where there is disagreement

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The Physician Handoff - Requires

- ED Physician Engagement
 - A little more work
 - Bridging orders endorsed by ACEP and AAEM in position statements
- Collaboration between ED Docs and Inpatient Docs
 - Must see the patient in a timely manner
 - Must understand patient status may change
- Outcomes measures

✓ The American Academy of Emergency Medicine states that "The Academy believes that it is acceptable for emergency physicians to write Holding Orders, which define any necessary treatment and assessment parameters required in the interval until completion of admission orders."

✓ In their April 2010 policy revision, the American College of Emergency Physicians (ACEP) stated; "...in the interest of patient care and safety, an emergency physician may be compelled to write transition orders. These transition orders may include essential treatment and assessment parameters required before preparation of suitable admission orders." (ACEP Policy "Writing Admission and Transition Orders" April 2010)

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Does your patient have a ticket to ride?

ADMISSION / TRANSFER REQUEST		PATIENT ID
1 FROM: <input type="checkbox"/> Emergency Department # <input type="checkbox"/> Direct <input type="checkbox"/> Transfer from		
2 Admitting MD: <input type="checkbox"/> Admitting DR:		
3 Admission Type: <input type="checkbox"/> MDU Candidate <input type="checkbox"/> Teleradiology: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Full Admit <input type="checkbox"/> Observation Bed Type: <input type="checkbox"/> MDU Candidate <input type="checkbox"/> Justification: <input type="checkbox"/> Full Admit <input type="checkbox"/> Observation	6 Time Requested: Time Assigned: <input type="checkbox"/> RN Bed # <input type="checkbox"/> YES <input type="checkbox"/> NO On Dialysis: <input type="checkbox"/> YES <input type="checkbox"/> NO Bed Status: <input type="checkbox"/> Empty Clean Ready <input type="checkbox"/> Empty Dirty (see Page 2) <input type="checkbox"/> Occupied (see Empty @)	
4 Mental Status: <input type="checkbox"/> Normal <input type="checkbox"/> Place near nursing station <input type="checkbox"/> Difficult cohort	7 Other Placement Issues:	

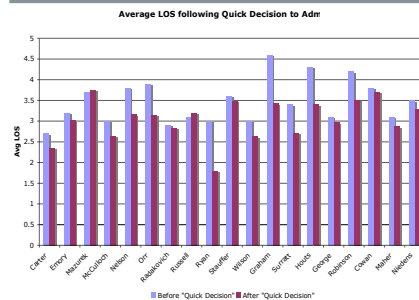
REMEMBER: DO NOT REQUEST A BED FOR PATIENTS WITH CHEST PAIN DIAGNOSES UNTIL RECEIPT OF THE FIRST SET OF ENZYMEs

Figure: compliments of Kirk Jensen

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Early Admit



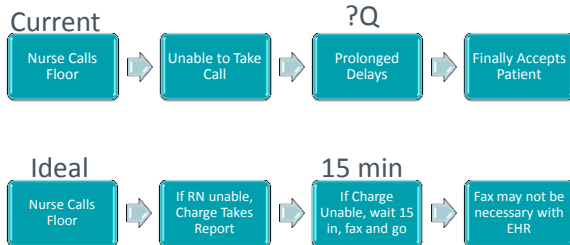
Reduced ED
LOS by 20
minutes on all
admissions!

Gary Carter, MD, PEMBA 2008

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Nursing Handoff – Best Practice

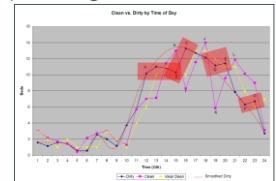


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The Nursing Handoff

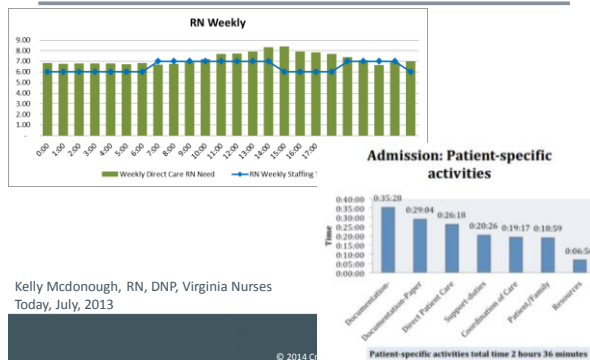
- Incentives are misaligned on both inpatient and ED sides
- Reward for doing efficient work is more work
- Worse for inpatient nurses (discharge workload and admit workload)
- Shift change and breaks
- Calling report
- “No Fly Zones”



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Nurse Workload



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Nurse Report Best Practice

- ED Nurse attempts to call report
- If Floor Nurse is unable to receive report, Charge Nurse should take report
- If Charge Nurse is unable to take report, then the ED Nurse waits 15 minutes for floor nurse to call.
- If there is no call, the ED nurse faxes report and the patient is transported to the floor



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Approaches

- Programs
 - Full Capacity Protocol (Hallway Boarding)
 - OR Smoothing
 - Observation Units
 - Bed Ahead Process
 - Project RED (Re-engineering Discharge)
- Improve flow in areas specifically affecting the ED
 - ➔ ICU
 - ➔ Telemetry

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Hallway Boarding

- Peter Viccellio's "Full Capacity Protocol"
- How do we fix it?
 - Diversion is not the answer...
 - Patient safety
 - Revenue
 - Turning pts away after MSE – no...
- Evenly distribute patients upstairs and sharing the boarding burden
 - Improves inpatient and ED throughput, safety
 - Costs nothing, revenue improves
 - Improves satisfaction, improves bed turnover

Parents Prefer Inpatient Hallways to the Emergency Department For Children Who Are "Boarded" While Waiting for a Bed

Endorsed for release at 10:41 AM
 January 26, 2009
 Jukka L. Leppä, MD, PhD (508) 738-6010 x3009
 www.ambulance.com

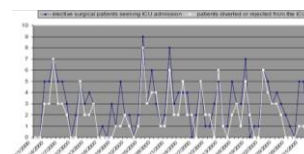
Washington, DC—Parents whose children are admitted to the hospital from the emergency department prefer to have their children wait on inpatient hallways than

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The variation associated with surgical admissions (Litvak)

Root Cause Analysis of Emergency Department Crowding and Ambulance Diversion in Massachusetts, Boston University, 2002: ED diversions study under Department of Public Health grant
http://www.state.ma.us/dph/dhca/pdfs/Final_Report_Exec_Summary.pdf



When the scheduled demand is significant, there was much stronger correlation between scheduled admissions and diversions than between ED demand and diversions

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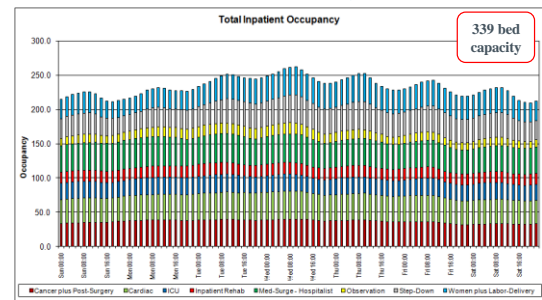
The Impact

- ED Admissions and Elective OR patients have an equal impact on hospital crowding
- OR System-induced variation – non-random, unpredictable, must be identified and eliminated
- ED natural variability is related to clinical factors, professional factors, and flow variation

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Occupancy by Day of Week and Hour of Day



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OR Smoothing

- Adjusting the OR schedule and block scheduling practices based on inpatient demand to smooth admissions over the course of the week
- Very difficult to execute
- Very helpful if successful
- Requires innovative thinking (increased weekend resources) and willing participants (enlightened) physicians

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Pull Systems (Bed Ahead)

- Beds identified as available only when clean, unoccupied, and staffed
- Each Unit identifies the next available bed (Med-Surg, ICU, Telemetry, etc)
- Bed Czar or Nursing Supervisor informs Unit to get next admission
- Charge nurse informs nurse to get next admission
- Bed available upon request without delay

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Admitting and ED Holding Units

- Allow for decompression of crowded EDs
 - Stable ED patients are immediately moved with transition orders to await admission or to wait for bed placement
 - Allows for ongoing decision-making and more efficiency for admitting physicians
 - Decreases resistance from floor nurses for taking patients because the work has already been done
- Can be just another bottleneck if not careful
- Why not just make these additional inpatient beds and avoid the extra transfer?

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Streamlining Processes - ICU

- Based on established criteria, patients are identified in the ED and immediately taken to the ICU to be cared for by the Intensivist, goal 30 minutes
- Examples:
 - Sepsis
 - Acute Respiratory Failure
 - Status-post Cardiac Arrest
 - Hemodynamic Instability
 - Intracranial Hemorrhage
- ICU should be able to provide similar level of care



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Observation Units and CDUs

- Markedly shorten the inpatient length of stay
 - Standardized pathways
 - Reduced consultation
 - Evidence-based practice
- Are good from the patient's perspective
 - There are better, more efficient ways to do things
 - Which essentially means same outcome, less waste from the patients perspective
- Involve standardizing clinical and non-clinical practices

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Volume 25, Issue 7, Pages 529-533
(November 2003)

A national survey of observation units in the United States

Sharon E. Mace, MD (FAAPF),^{1,2} Louis Graft, MD,³ Michael Mitchell, MD,⁴ Michael Rous, MD⁵

Received 16 June 2002; accepted 22 October 2002

Abstract
The objective of this study was to survey the use of observation units (OUs) in the United States. A written survey was mailed to every third hospital (sequentially by zip code) in the United States. There was a 32.9% response to the survey (522 of 1588 hospitals). A total of 18.8% of hospitals had an OU with another 11.6% planning to open an OU. Those hospitals that had OUs had a higher overall ED census, higher rate of diversion of ambulances, and were more likely to be in metropolitan areas ($P < .05$), but there was no relationship to payer mix or to ED hospital admission rate. The OUs were characterized by a mean 4.8 years in existence, 57.3% ED administratively responsible, 55.4% ED clinically responsible, a mean of 1330 patients per year, an average length of stay of 15.3 hours, a 4:2 nurse-to-patient ratio, and 22.3% hospital admission rate.

Keywords: Observation medicine, observation units, national survey

The American Journal of Emergency Medicine

JAMA[®]
The Journal of the American Medical Association

DOI: 10.1016/S0736-4679(03)00107-2

Original Contribution

Costs of an Emergency Department–Based Accelerated Diagnostic Protocol vs Hospitalization in Patients With Chest Pain

A Randomized Controlled Trial

Rebecca R. Roberts, MD; Robert J. Zalenski, MA, MD; Edward K. Mensah, PhD; Robert J. Rybin, PhD; Geneva Ciavaralla, RN, MPH, MBA; Leon Guzman, MD; Krishna Das, MD; Linda R. Kamei, BS, MBA; Brian Ockene; Michael F. McCormick, MD; Andrea Hart, MD; Helen E. Straus, MD, MS; Daniel C. Murphy, MD; Ravi Rao, MD
JAMA. 2007;297(20):1870-1876.

Results.
—The hospital admission rate for ADP vs control patients was 45.2% vs 100% ($P < .001$). The mean total cost per patient for ADP vs control patients was \$1528 vs \$2095 ($P < .001$). The mean LOS measured in hours for ADP vs control patients was 33.1 hours vs 44.8 hours ($P < .01$).

Conclusions.
—In this trial, ADP saved \$567 in total hospital costs per patient treated. Use of ED-based ADPs can reduce hospitalization rates, LOS, and total cost for low-risk patients with chest pain needing evaluation for possible AMI or A-CV.

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11 AM Discharges

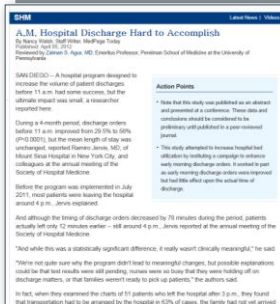


Figure: compliments of Kirk Jensen

- Hard to do
- Questionable impact
- Current thinking – discharge them when they are ready

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Improving Patient Flow Through a Better Discharge Process

- Giving patients an **expected length of stay** before admission
- **Set target discharge dates** on admission
- **Promote communication** to keep an overview of the patient's progress towards a satisfactory discharge.
- Senior **nursing staff were empowered to discharge patients** based on pre-established pathways
- Patients who were **waiting for transport** were transferred to the discharge lounge before 10:00 AM
- Encouraging **Saturday and Sunday discharges**



Reduced the average LOS for 80 percent of patients from 13 days to 4 days!

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Project Red (Re-engineered Discharge)

- Explicit delineation of roles and responsibilities
- Patient education must occur throughout the hospitalization
- Information must flow easily between the PCP and the hospital team
- Information should be captured throughout the hospital stay
- Every discharge must have a written, comprehensive discharge plan addressing: medications, therapies, lifestyle modifications, follow-up care, patient education, and instructions about what to do if the condition worsens.
- This discharge plan should be completed before the patient leaves the hospital.



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Project Red (Discharge Plan)

- Patients at high risk of rehospitalization should be contacted by the hospital team after discharge.
- All information about the admission must be organized and delivered to the PCP within 24 hours.
- Waiting until the discharge order is written before beginning the discharge process is likely to increase the risk of errors.
- Efficient and safe hospital discharge is significantly more difficult to achieve if the case management staff works only the 7 a.m.–3 p.m. shift.
- All patients should have access to their discharge information in their language and at their educational level.



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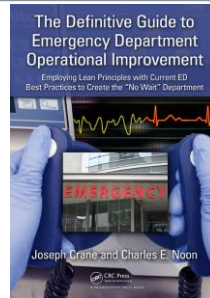
Summary

- Mastering Hospital-wide flow requires an understanding of your bed utilization and process capability
- In order to achieve flow, your organization must optimize bed management, and patient handoffs between nurses and between physicians
- There are other programs to fix certain situations and everyday tools to employ to optimize flow

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References



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Real-Time Demand Capacity Management and Hospital-Wide Patient Flow

The Joint Commission Journal on Quality and Patient Safety

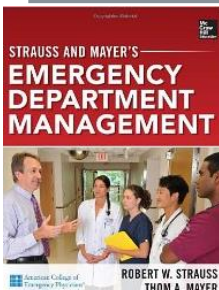
Timeliness and Efficiency Using Real-Time Demand Capacity Management to Improve Hospitalwide Patient Flow

Roger Ross, MD, Kevin Nicks, MD, Deborah Knapik, MS, Eda Jones, MD, MBA, FACCPE

In 2004, The Joint Commission issued its first accreditation standard—effective January 1, 2005—for managing patient flow.¹ The “current” Leadership Standard, LD1603.01, states, “The hospital manages the flow of patients throughout the hospital.”² When first issued, the standard served as a call to action for hospitals to focus more intently on patient flow issues. Yet, many hospitals still lack the processes and resources to address or manage patients to an inpatient bed or a study room. In 2007, the University of Pittsburgh Medical Center (UPMC), a 1,500-bed tertiary care hospital, began using and engineering real-time demand capacity management (RTDC) as a model pilot site. The hospital had identified inpatient patient flow as a strategic goal in 2002, but a series of patient flow projects failed to result in improvement.

Implementing RTDC: Standard processes for the RTDC steps—Predicting Capacity, Reducing Demand, Developing a Plan, and Evaluating a Plan—and standard metrics were used to build and the hospital had metrics found in these barriers. In our observations, these steps aligning the results from the approach have evolved in 10 years.

Results: Improvement was achieved and has been sustained through early 2013 for all measures, including (1) the on-demand availability of discharge performance, (2)



CHAPTER 38 Disposition Decision to Departure: Finishing Strong

Jody Crane
Robert W. Straus
Suzanne Stone-Gallie
Thom A. Mayer

INTRODUCTION
This chapter discusses opportunities to improve emergency department (ED) flow through strategic management. ED flow is based on the “three overlapping rings” model, which consists of three overlapping circles: (1) patient flow, (2) staff flow, and (3) information flow. In this chapter, the authors discuss the importance of patient flow in the context of the “three overlapping rings” model. The authors discuss the importance of patient flow in the context of the “three overlapping rings” model. The authors discuss the importance of patient flow in the context of the “three overlapping rings” model.

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flow when there is no longer a waiting area for testing or treatment. Discharge decisions result in poor clinical outcomes, dissatisfied patients, and financial losses.

A model of patient flow that allows for multiple waiting ED waiting beds to increase mortality and morbidity. In 2007, Challa looked at 10,000 ED visits and found that 10% of patients waited in the ED for more than 4 hours before being discharged.

In 2011, Singer showed the mortality rate increased 80% from 2.0% to 1.6% in patients waiting in the ED for more than 12 hours after compared to those waiting less than 12 hours. In the same study, hospital LOS increased from 4.5 days after hospitalization to 4.8 days in 2011. Confidence in the impact of waiting and ED crowding.

One of the significant impacts of patient flow on public health is the impact of waiting and ED crowding. One of the significant impacts of patient flow on public health is the impact of waiting and ED crowding. One of the significant impacts of patient flow on public health is the impact of waiting and ED crowding.

KEY METRICS AND MILESTONES
ED metrics have been used to measure flow since before emergency medicine became a specialty. The specific application of these metrics to patient flow is more recent. In 2004, the American College of Emergency Medicine published a paper listing a set of metrics in the ED.³ The primary ED metrics reported were (1) patient flow, (2) staff flow, and (3) information flow.

patient flow, (2) staff flow, and (3) information flow. In this chapter, the authors discuss the importance of patient flow in the context of the “three overlapping rings” model. The authors discuss the importance of patient flow in the context of the “three overlapping rings” model. The authors discuss the importance of patient flow in the context of the “three overlapping rings” model.

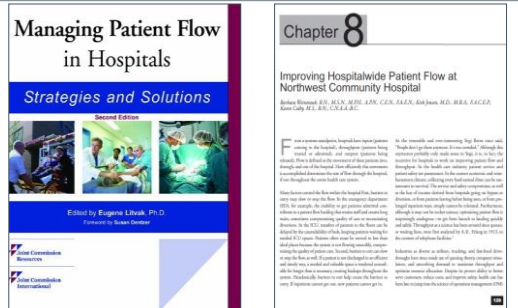
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Managing Patient Flow in Hospitals: Strategies and Solutions, Second Edition



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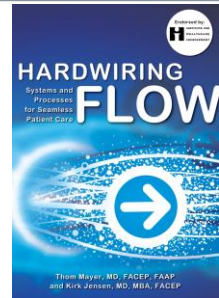


Hardwiring Flow Systems and Processes for Seamless Patient Care



Thom Mayer, MD, FACEP, FAAP
Kirk Jensen, MD, MBA, FACEP

- ▼ Why patient flow helps organizations maximize the "Three Es": Efficiency, Effectiveness, and Execution
- ▼ How to implement a proven methodology for improving patient flow
- ▼ Why it's important to engage physicians in the flow process (and how to do so)
- ▼ How to apply the principles of better patient flow to emergency departments, inpatient experiences, and surgical processes



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Leadership for Smooth Patient Flow: Improved Outcomes, Improved Service, Improved Bottom Line

Kirk B. Jensen, MD, FACEP
Thom A. Mayer, MD, FACEP, FAAP
Shari J. Watch, MD, FACEP
Carol Haraden, PhD, FACEP

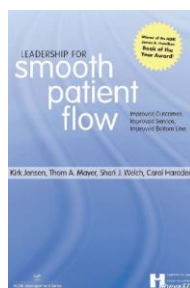
The heart of the book focuses on the practical information and leadership techniques you can use to foster change and remove the barriers to smooth patient flow.

You will learn how to: Break down departmental silos and build a multidisciplinary patient flow team. Use metrics and benchmarking data to evaluate your organization and set goals. Create and implement a reward system to initiate and sustain good patient flow behaviors. Improve patient flow through the emergency department—the main point of entry into your organization. The book also explores what healthcare institutions can learn from other service organizations including Disney, Ritz-Carlton, and Starbucks. It discusses how to adapt their successful demand management and customer service techniques to the healthcare environment.

"This book marks a milestone in the ability to explain and explore flow as a central improvable property of healthcare systems. The authors are masters of both theory and application, and they speak from real experiences bravely met."

Donald M. Berwick, MD
President and CEO
Institute for Healthcare Improvement (from the foreword)

ACHE • Institute for Healthcare Improvement



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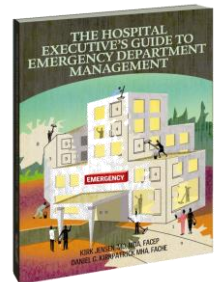


The Hospital Executive's Guide to Emergency Department Management

Kirk B. Jensen, MD, FACEP
Daniel G. Kirkpatrick, MHA, FACHE

- Introduction: Why the ED Matters
1. A Design for Operational Excellence
 2. Leadership
 3. Fielding Your Best Team
 4. Improving Patient Flow in the Emergency Department
 5. Customer Service: Ensuring Patient Satisfaction
 6. ED Change Initiatives: Getting Things Done
 7. ED Change Initiatives—Managing Change
 8. Patient Safety and Risk Reduction
 9. The Role and Necessity of the Dashboard
 10. How the ED Is a Business
 11. Billing, Coding, and Collections
 12. Physician Compensation Models—Productivity-Based Systems

HcPro ISBN: 978-1-60146-742-3



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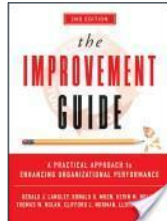


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