

Hospitalists in the Emergency Department:

Active Bed Management and Care for
Boarded Admitted Patients

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Objectives

- Background
- Prior Solutions
- Denver Health Intervention
- Outcomes of Intervention
- Limitations of Intervention
- Future of Intervention

Background

- 90% of Emergency Departments (ED) are crowded beyond their capacity
- ED crowding leads to ambulance diversion
- Ambulance diversion can delay care and lead to increased mortality rates
 - UK study found that for every 10 km increase in straight line distance = 1% increase in absolute mortality

Background cont.

- One of the main causes of ED crowding is boarding admitted patients
- Boarded admitted patients have
 - ↓ satisfaction
 - ↓ quality of care.

Background cont.

- Retrospective cohort study in an inner city ED: non treatment of pain was associated with ED occupancy rate
- Retrospective cohort study in an urban academic ED: delay of antibiotics for pneumonia predicted by ED crowding
- Cross sectional analytical study: critically ill patients with > 6 hour delay in transfer from ED to ICU increased ICU and hospital mortality

Prior Solutions

- ED triage
 - Triage liaison physicians: ED length of stay (LOS) decreased but diversion didn't change
- Bed side registration
 - Initially was successful but at one year the effect was only seen in the morning
- Physical expansion of the ED
 - An ED went from 28 to 53 beds: ED diversion and LOS actually increased

Prior Solutions cont.

- Admission units
 - 14 bed acute care unit as extension of ED: diversion decreased by 40%
- Increasing hospital capacity
 - Naturally occurring increased in ICU beds: decrease in ambulance diversion and ED LOS
- Regional programs
 - Sacramento ambulance reduction program: 74% reduction of diversion
 - Boarding of admitted patients limited effect of program

Prior Solutions Cont.

- Hospitalists have been involved in active bed management
- The intervention
 - Assessed bed availability in real time
 - Pre diversion rounds in ICU
 - Triage decisions
 - Bed director

Prior Solutions cont.

- Results of active bed management
 - ↑ hospital throughput
 - ↓ divert times
 - clinical out comes remained the same

Denver Health Intervention: Background

- Rapid Improvement Experiment identified lack of house capacity due to:
 - Occupied beds
 - Inefficiencies of work flow
 - Lack of incentive to admit and discharge patients
 - Low bed assignment priority

Increased ED wait times for a floor bed

Denver Health Intervention

- On August 3, 2009 the medicine department at Denver Health instituted:
 - Geographic rounds
 - Hospitalist Led Medicine ED Team

Denver Health Intervention: Medicine ED Team

- Hospitalist Led Medicine ED Team consists of
 - 7AM to 5 PM: Physician, midlevel and intern
 - 5 PM to 11 PM: Physician and 2 midlevels*
 - 11 PM to 7 AM: Physician and midlevel*

* Hospitalist ED team duties are absorbed into existing swing and night duties

Denver Health Intervention: Medicine ED Team

- Duties include
 - Active bed management
 - On going care for admitted medicine patients boarding the ED

Denver Health Intervention: Active Bed Management

- Bed Board
 - constant knowledge of hospital census status
- Nursing Supervisor
 - Frequent communication with MD level details
- Floor Team Leads
 - Liaison between ED, Nursing supervisor and the medical floor



NaviCare® - Care Traffic Control Module™ - ICONS

Patient Transfer	Warmed Bed Request	Bed Assigned/Not Assigned	Assigned Bed Status	Not Assigned Approved to Charge Nurse	Not Assigned Patient Pending	Alert Alert	Issues	Teamwork	BMT Patient	Acute Medication	PPE
Transport Request	Assign Transport Request	Active Transport Request	Activate Chair (Discharge to Transport)	Transport Discharge Daily		Unkempt Patient	Security Risk	Alone Patient	Communication Interruption	Stratagem	
Endowment Not Change	Sick Change Request	Sick Change Status	Room Transfer Request	Room Transfer Status		F	M	F	M	Butterfly	Parent Role
Patient Discharge	Patient Discharge					F	M	Old Health Status	Old Patient Medication	Old Patient Trauma	
		Final Funding Requested	Final Funding Complete	Patient Needs Assessment	Medication Request Complete	Managed Care Patient	Patient Assessment	Going to Sleep	RN	Normal Patient Transfer	
		Patient Needs Assessment	Transportation Request Complete	Patient Needs Assessment	Patient Medication Complete	Patient Status	Negative Airway	Observation	Observation Patient Request	Nurse	RN
										Nurse Out of Service	

Denver Health Intervention: Active Bed Management

- Bed Board
 - constant knowledge of hospital census status
- Nursing Supervisor
 - Frequent communication with MD level details
- Floor Team Leads
 - Liaison among ED, Nursing supervisor and the medical floor

Assess Bed Board
-number of open beds
-number of bed requests



Bed request placed
-ED, Clinic, ICU



Discussion with the Nursing Supervisor



Discussion with Floor Teams



Beds Available



Assigned a floor team

Assess Bed Board



Bed request placed



Discussion with the Nursing Supervisor



Discussion with Floor Teams

Beds not available



Assigned to the Medicine ED Team



Beds open up



Discussion with the Nursing Supervisor



Assigned a floor team

Denver Health Intervention: Care for Boarded Patients

- Existing Patients- patients admitted to Medicine ED Team as of 7 AM
 - On going care provided
- New Patients – new admissions to Medicine ED Team
 - Care initiated
 - On going care provided

Care is provided until discharge from the ED or transfer to a medical floor

Existing Patients (Admitted to Medicine ED Team as of 7AM)



On going care provided
-Round
-Order tests
-Call consults

New bed request placed



No beds available



New Patients Admitted to Medicine ED team



Care is initiated
-H&P
-orders
-call consults



On going care continued
-follow up on studies
-follow up on consults



Discharge from the ED



Transfer to medical floor

Denver Health Intervention: Outcomes*

- Number of patients admitted to a medical floor only to be discharged within 8 hours
 - Marker of bed utilization
- Number of patients admitted to and discharged from the ED
 - Marker of bed utilization

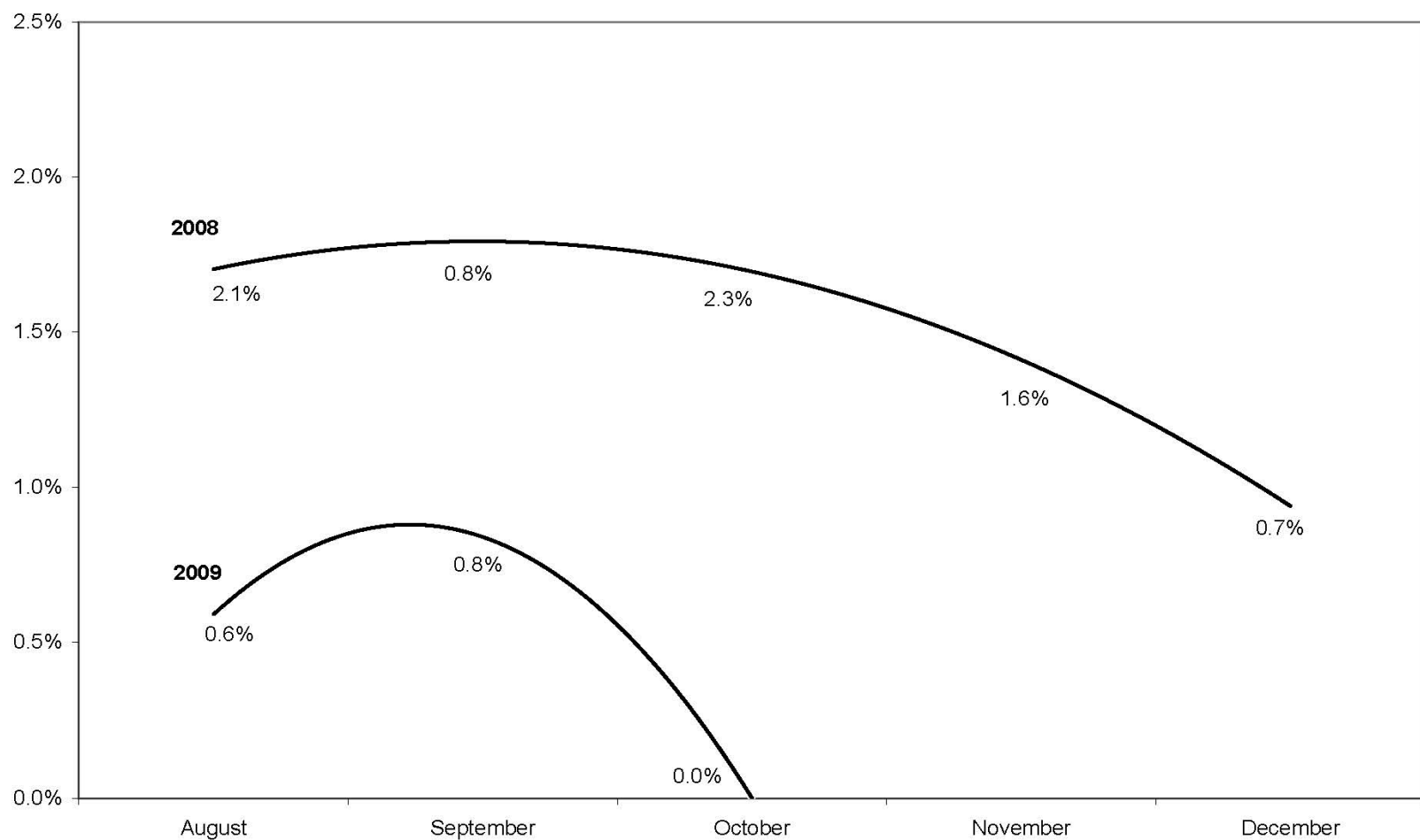
*Compared from Aug to Dec 2008 to Aug to Oct 2009

Denver Health Intervention: Outcomes*

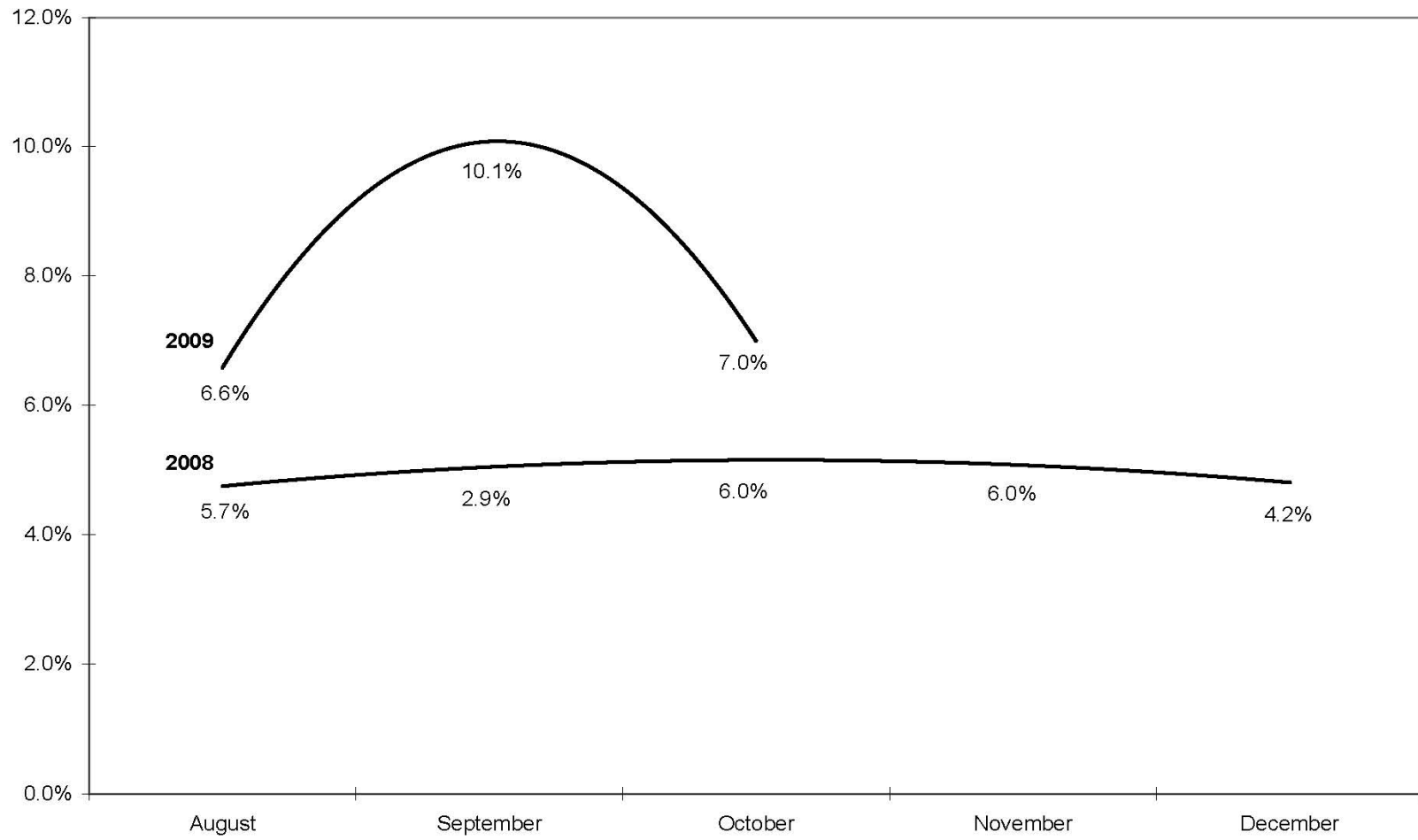
- Length of stay (LOS) for patients managed by this team
 - Measure effect of introducing a handoff
- ED diversion

*Compared from Aug to Dec 2008 to Aug to Oct 2009

Discharged within 8 Hours (%)



Discharged from ED (%)



Denver Health Intervention: Outcomes cont.

- LOS for patients managed by this system as of 7 AM did not increase
 - Despite the introduction of a handoff
- Divert was not reduced overall
 - Aug and Sept 2009: divert due to lack of capacity decreased
 - October 2009: H1N1

Denver Health Intervention: Clinical Limitations

- Attending level physician being used
- Monthly resident turnover
- Manpower varies through the day
 - 7AM to 5 PM dedicated team
 - 5 PM to 7AM work absorbed by swing and night shift
- Work flow is hard to predict

Existing Patients (Admitted to Medicine ED Team as of 7AM)



On going care provided
-Round
-Order tests
-Call consults

New bed request placed



No beds available



New Patients Admitted to Medicine ED team



Care is initiated
-H&P
-orders
-call consults



On going care continued
-follow up on studies
-follow up on consults



Discharge from the ED

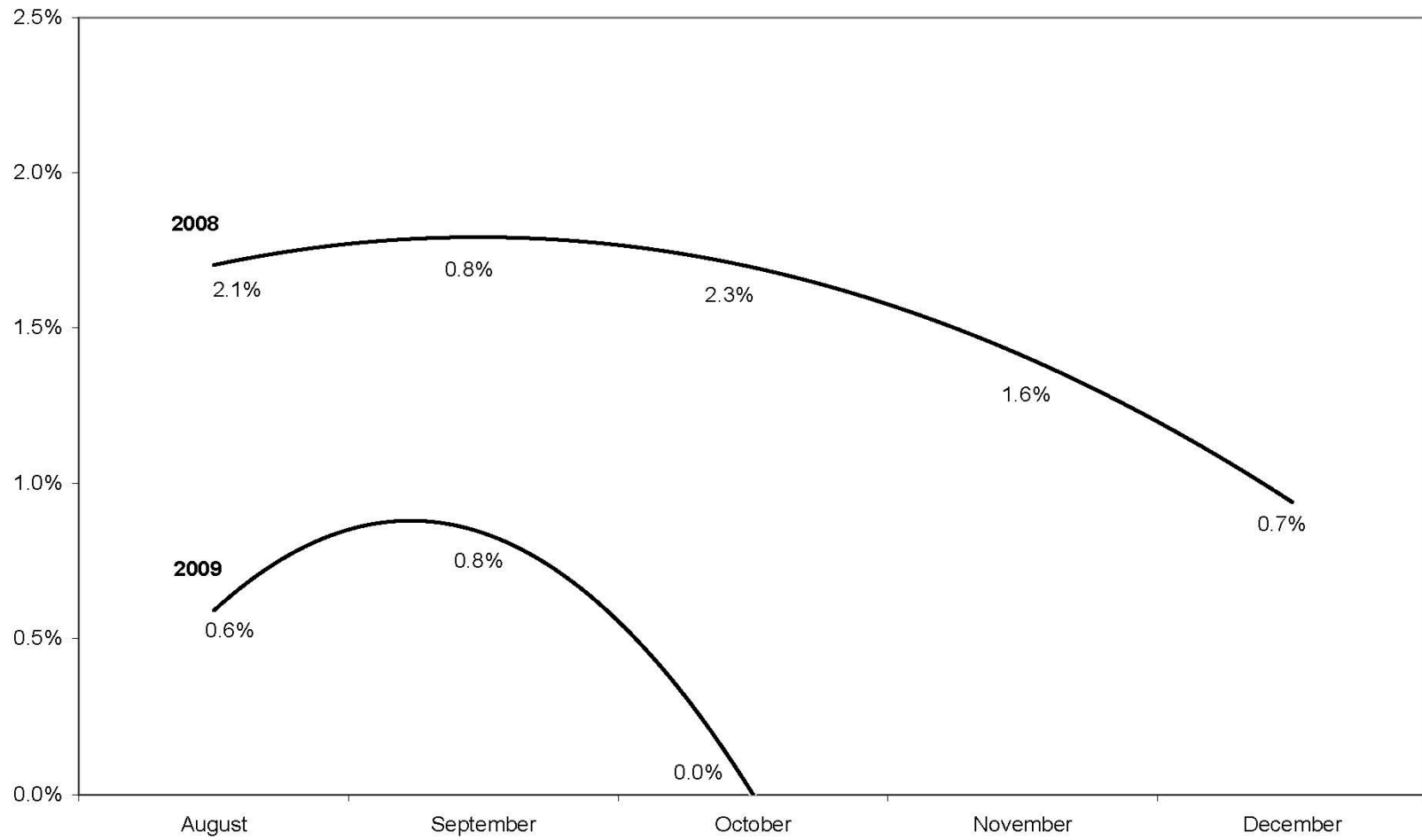


Transfer to medical floor

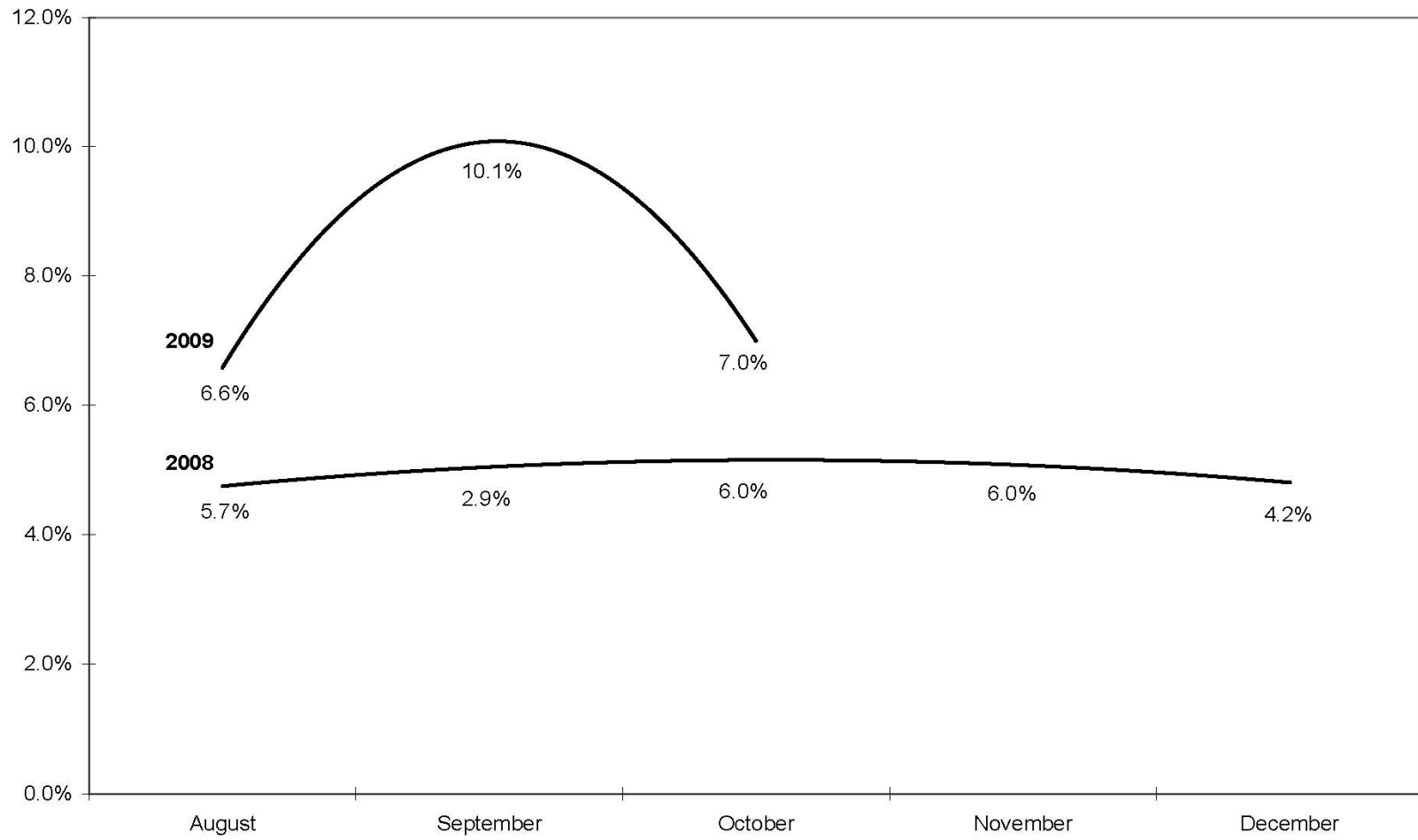
Denver Health Intervention: Research Limitations

- Extremely preliminary data
- Not a randomized trial
- October = H1N1
 - Divert data effected

Discharged within 8 Hours (%)



Discharged from ED (%)



Denver Health Intervention: Future Clinical Goals

- Web based admission criteria curriculum
- Chest pain observation unit
- Short stay unit
- Transition of some duties to midlevel

Denver Health Intervention: Future Research Avenues

- Time to admission order
- Outcomes of patients discharged from the ED
- Outcomes of patients provided ongoing care
- Divert status
- LOS of patients provided on going care

Summary

- Hospital throughput is a serious issue
- Numerous interventions have been tried to address this
- Denver Health Intervention shows that hospitalists actively managing beds and providing care for boarded patients can improve bed efficiency

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