

## **Web&ACTION Program: Improving Patient Flow – Getting Started**

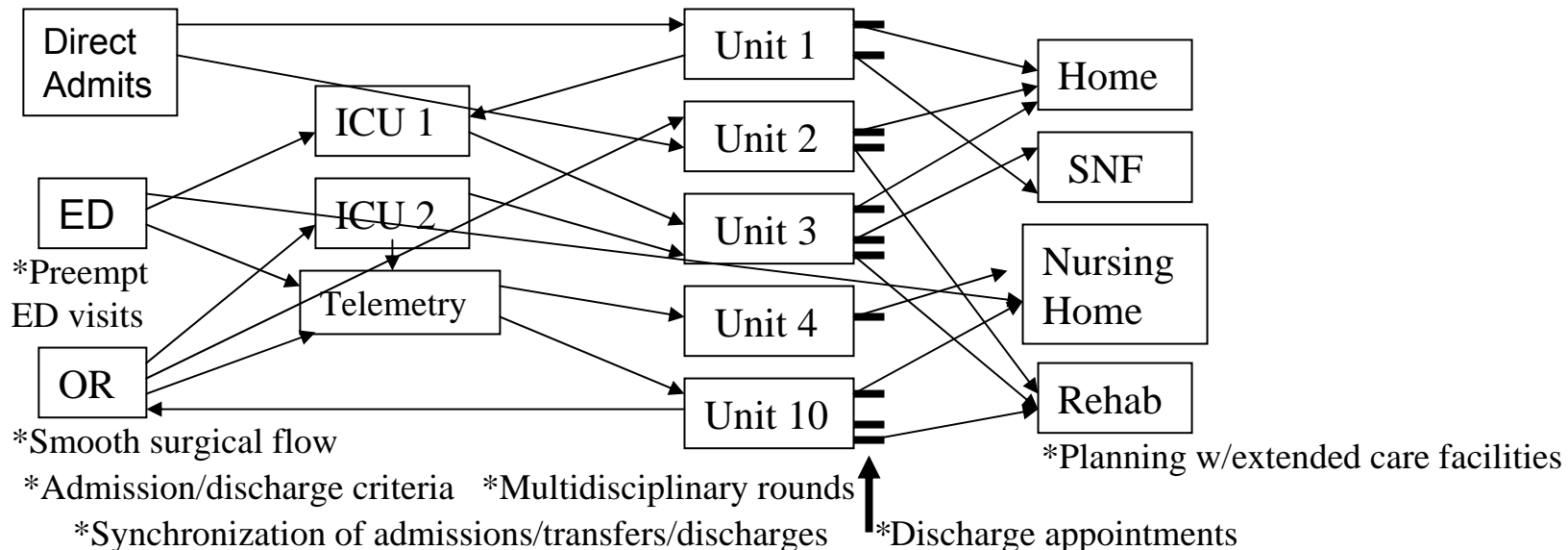
### **Session 3: Overview of the Key Components of an Administrative System**

(Current hypothesis 9/05)

## Administrative System

- \*Bed management (Bed coordinator, Bed huddles, Real time electronic bed status/bed board, etc)
- \*Demand/capacity measurement and planning
- \*Early warning and response (contingency plans) system for large fluctuations in demand or capacity

## Care System

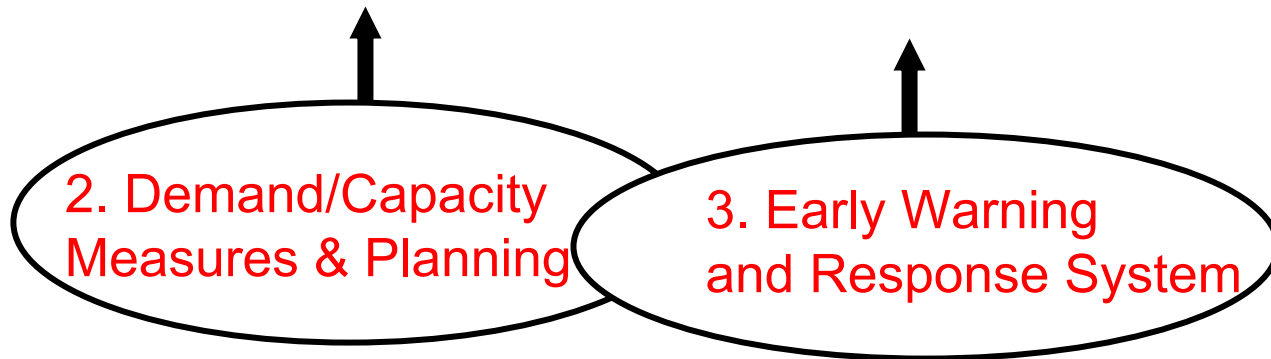
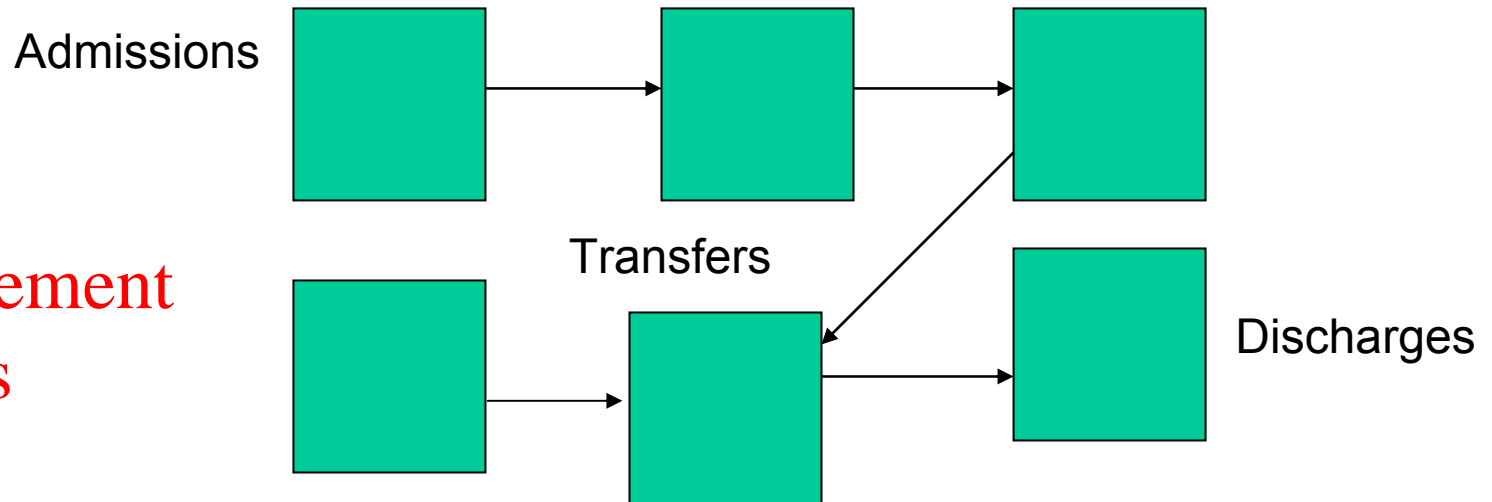


## Support System

- \*Discharge Planning
- \*Transport in and out hospital
- \*Case Management
- \*Housekeeping

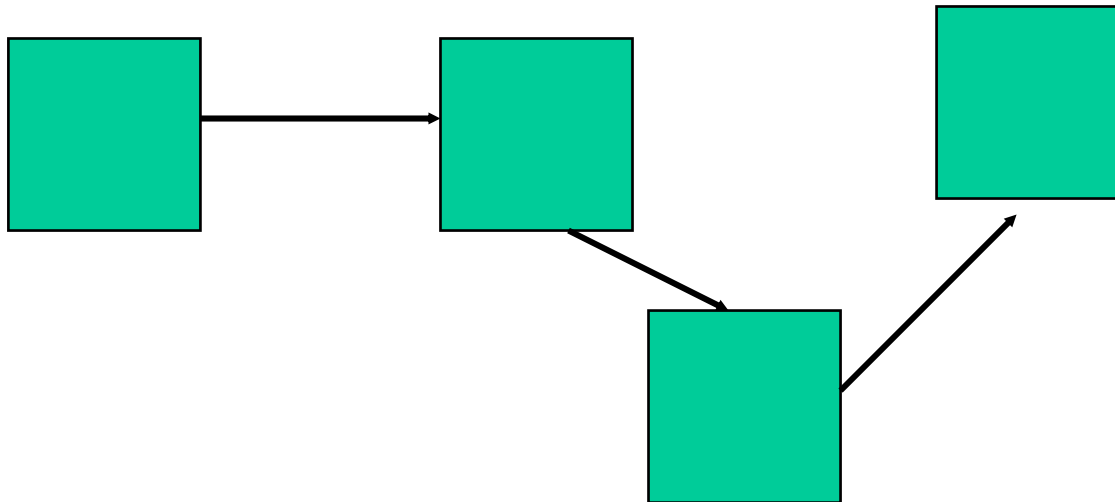
1. Discuss some key components of an Administrative System for patient flow
2. Share some ideas on getting started to improve the Administrative System for patient flow in your hospital

## 1. Bed Management Process



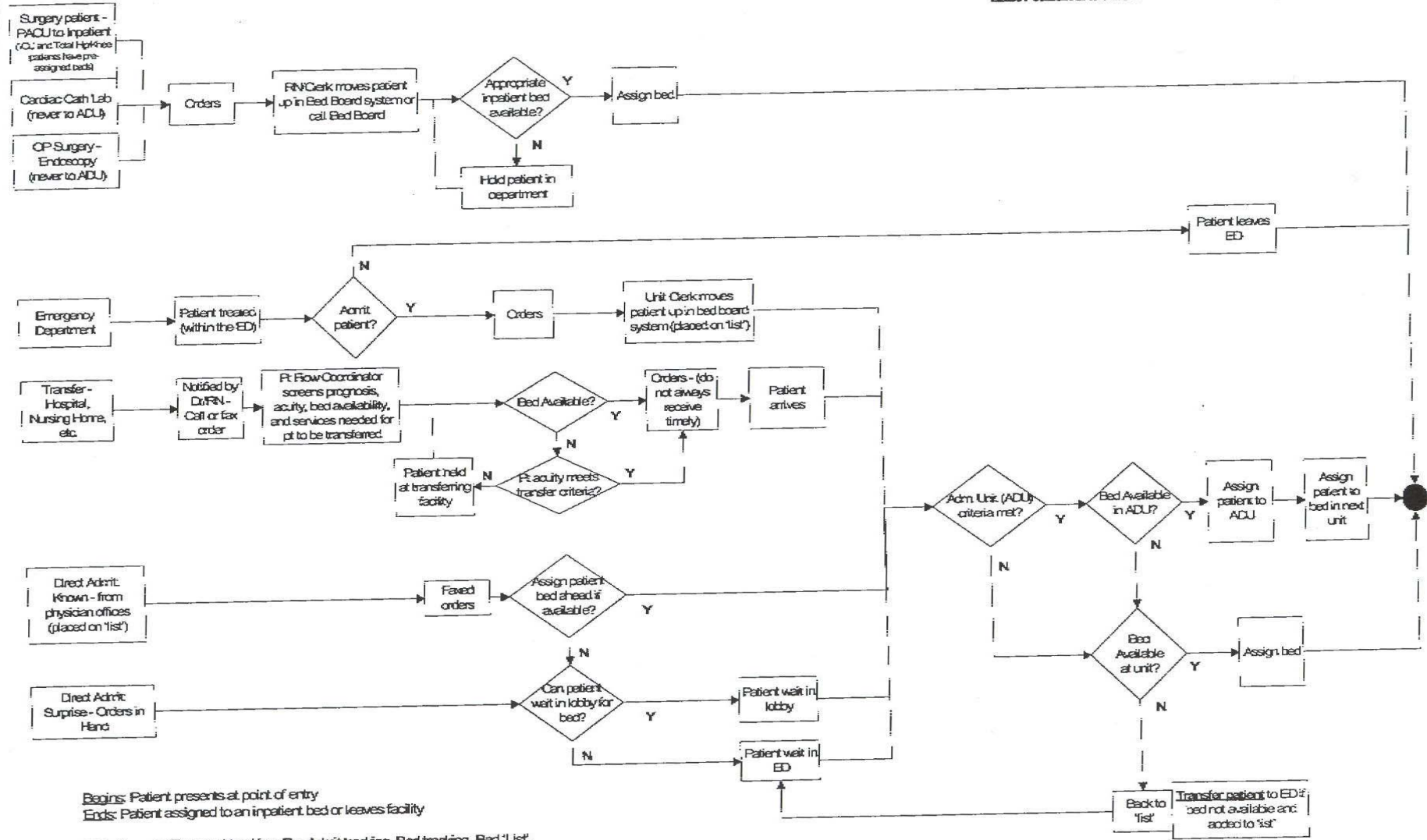
# 1. Bed Management Process

Steps that repeatedly come together to transition patients through the hospital



# Bed Management Process - East Alabama MC

East Alabama Medical Center - Bed Management Process



**Begin:** Patient presents at point of entry  
**End:** Patient assigned to an inpatient bed or leaves facility

**Data Sources:** Transport tracking, Pre-Admit tracking, Bed tracking, Bed 'List', Orders

- Bed Coordinator
- Visual displays of bed status (bed boards or electronic)
- Bed Huddles
- Mobile patient placement nurse
- Text messaging to cell phones



**St. Vincent's Hospital** Birmingham, AL



## Visual Patient, Bed & Equipment Tracking

## awarix

The screenshot displays the Awarix software interface, which provides a real-time overview of patient status across a hospital floor plan. The interface includes a menu bar (File, View, Config, Help, Debug), a toolbar with navigation icons, and a 'Quick search' field. A left-hand navigation pane lists hospital units from Floor 3 to WCC. The main area shows a floor plan with rooms 551 through 576, each with specific alerts or status icons. For example, room 575 has a 'Fall Risk' alert, room 573 has an 'I.V. Drip' alert, and room 567 is highlighted in red. Other alerts include 'In Transit', 'GI Lab', 'Isolation', 'Clean', 'Dirty', 'Cleaning', 'Pending Discharge', 'Scheduled Discharge', 'Observation Patient', 'Inpatient', 'Vitals Not Taken', 'Rx Order', 'Abnormal Results', 'Stat Order', 'Case Mgt. Alert', 'Order', 'Results', and 'N.P.O.'. At the bottom, there are performance metrics for 'Unit' (100%) and 'Hospital' (80%), a 'Med/Surg' indicator, and a 'Welcome to St. Vincent's' message. An 'Edit' button is located in the bottom right corner.

Unit 100% Med/Surg

Hospital 80%

Welcome to St. Vincent's

Edit

## Building the Case

### Admissions

- Average LOS Reduction
- Hidden Bed Visibility

### Observation Patient Management

- Written Discharge Management
- Scheduled Discharge Management
- AM Discharge Management
- Critical Care Transfer Management

### Patient Safety

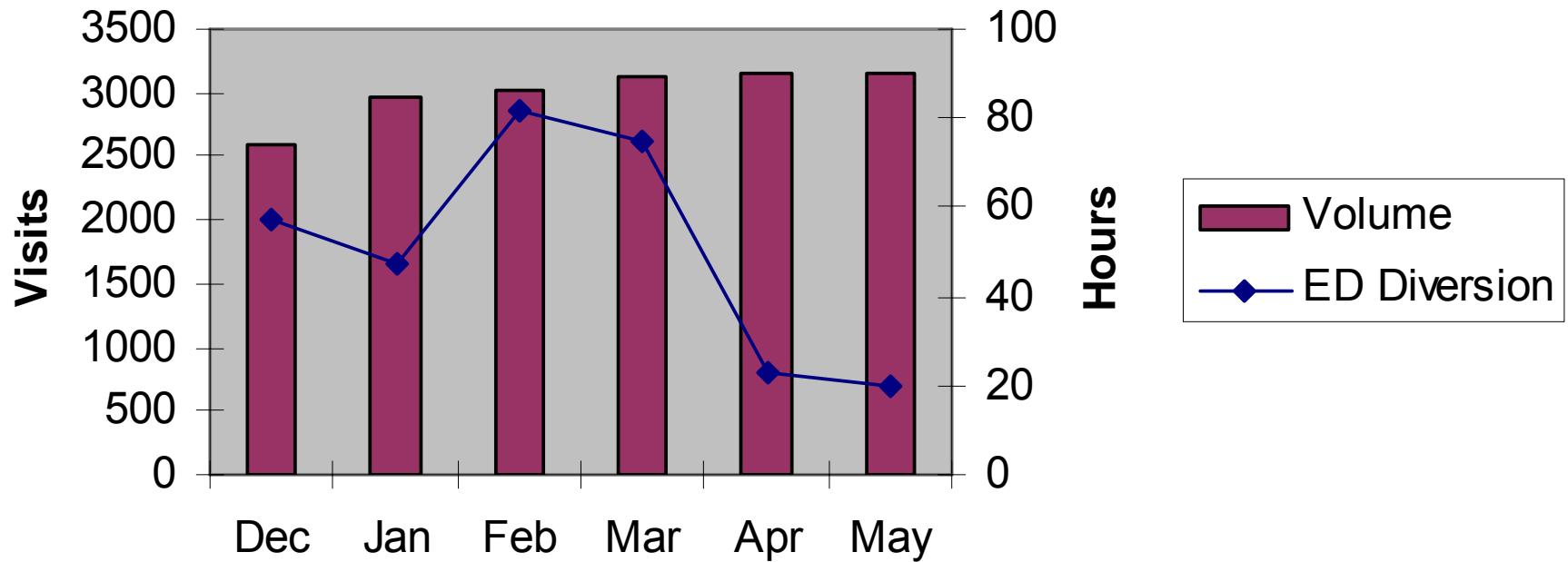
### Patient Process Visibility

- EVS Workflow Management
- Bed Control Staffing
- Savings Nurse Recruitment
- Patient Hand-off Management

### Clinical Pathways

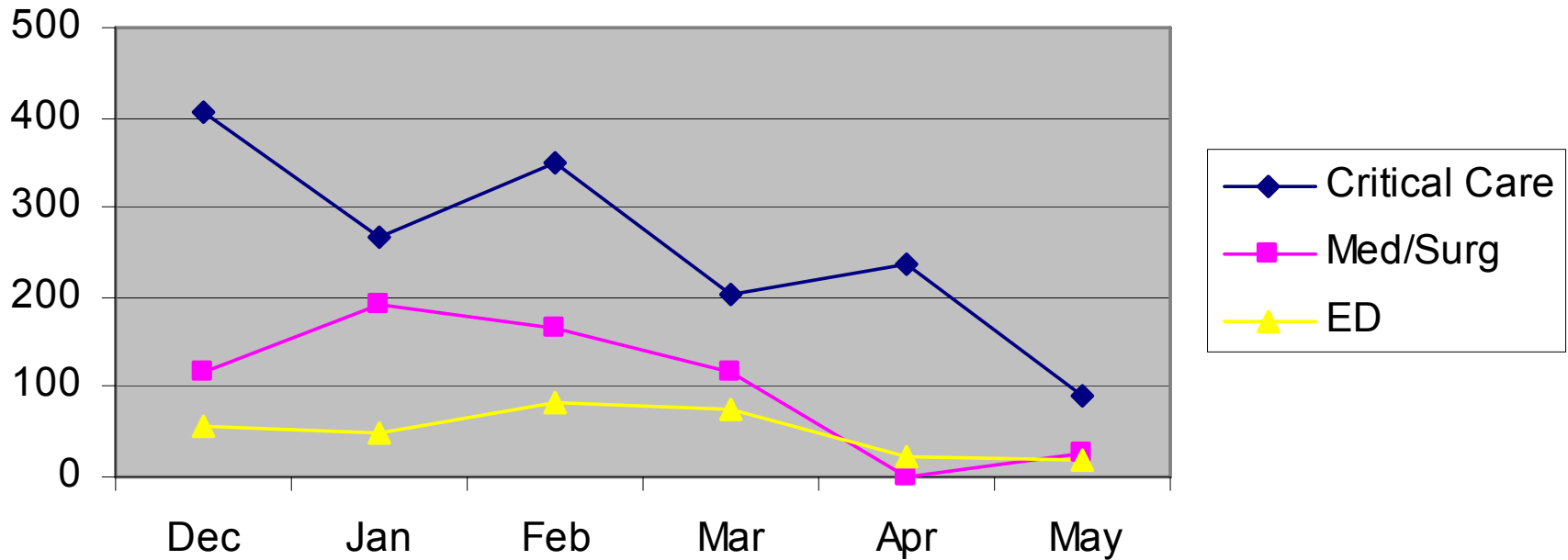
## Supporting Graphs

### ED Volume vs ED Diversion

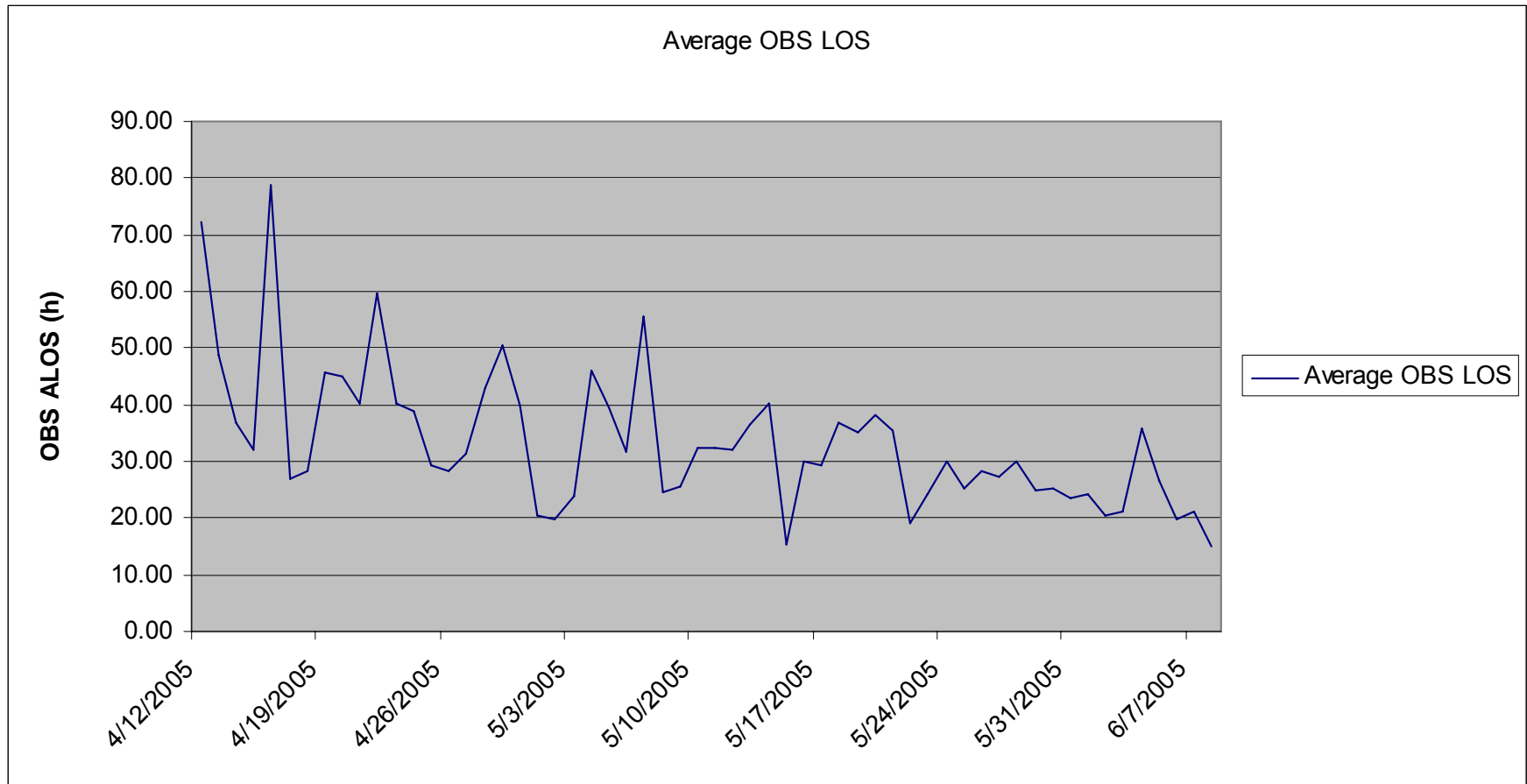


## Supporting Graphs

### Diversion Hours



## Supporting Graphs

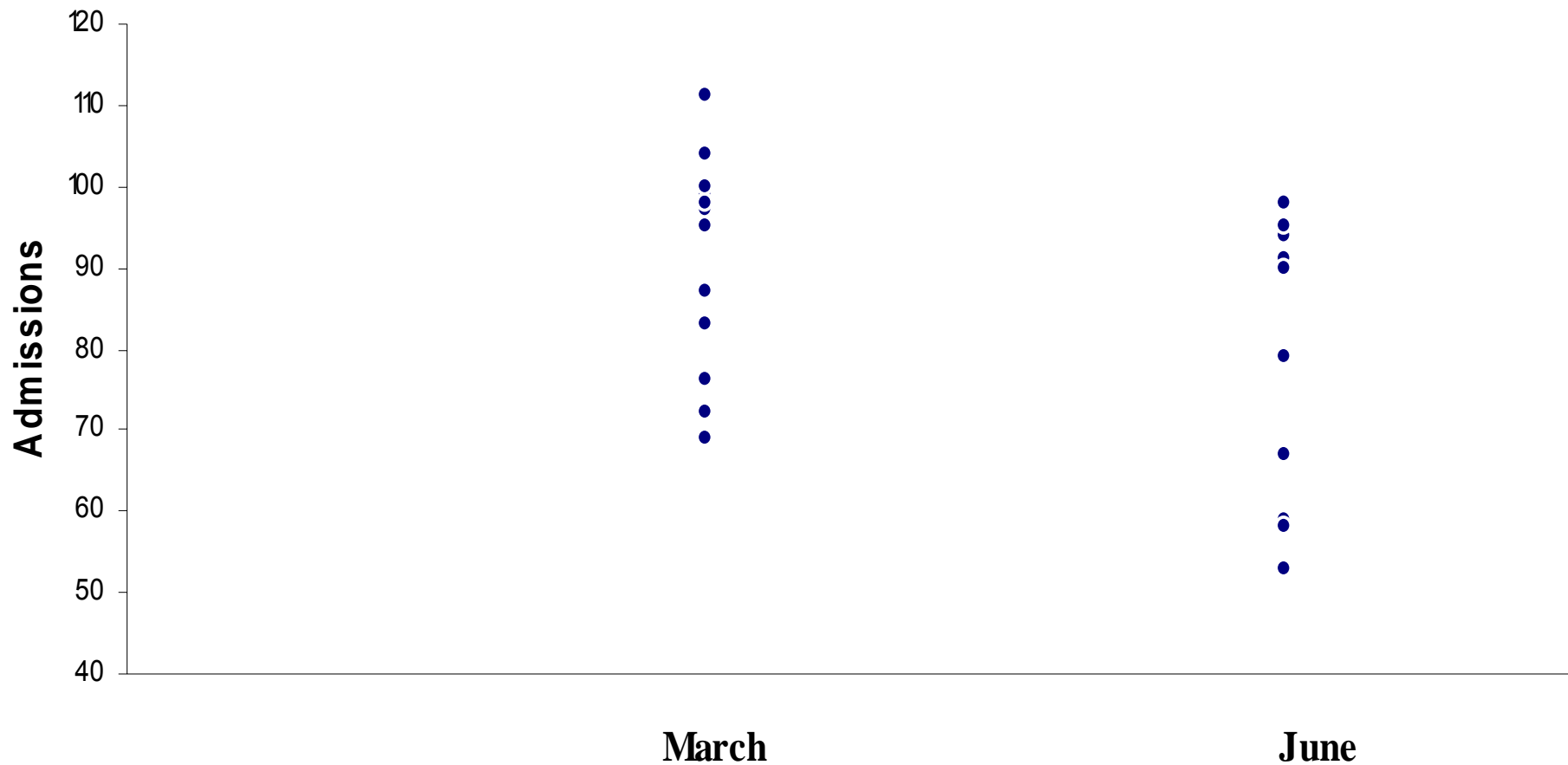


- Start where you are. Document (flowchart) and improve your current process
- Consider:
  - Central area
  - Bed board
  - Coordinator
  - Bed huddle
- Work with IT (Use existing computer architecture)
- An RFP for an automated system

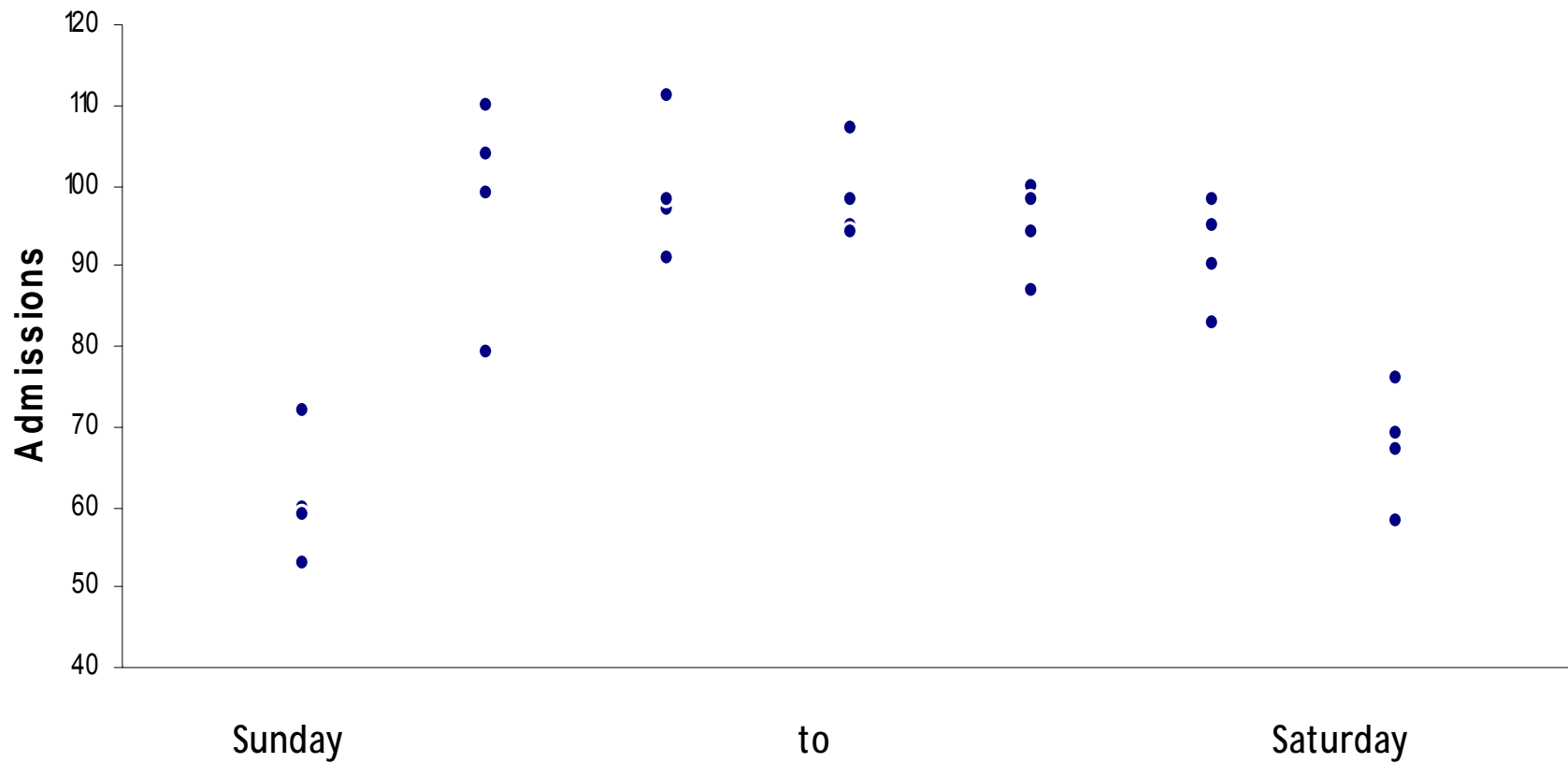
2. Demand Capacity Measures and Planning
3. Early Warning Systems

- Planning ahead to match better capacity and demand
- Planning based on understanding variation due to:
  - Seasonality
  - Month
  - Day of the week
  - Time of the day

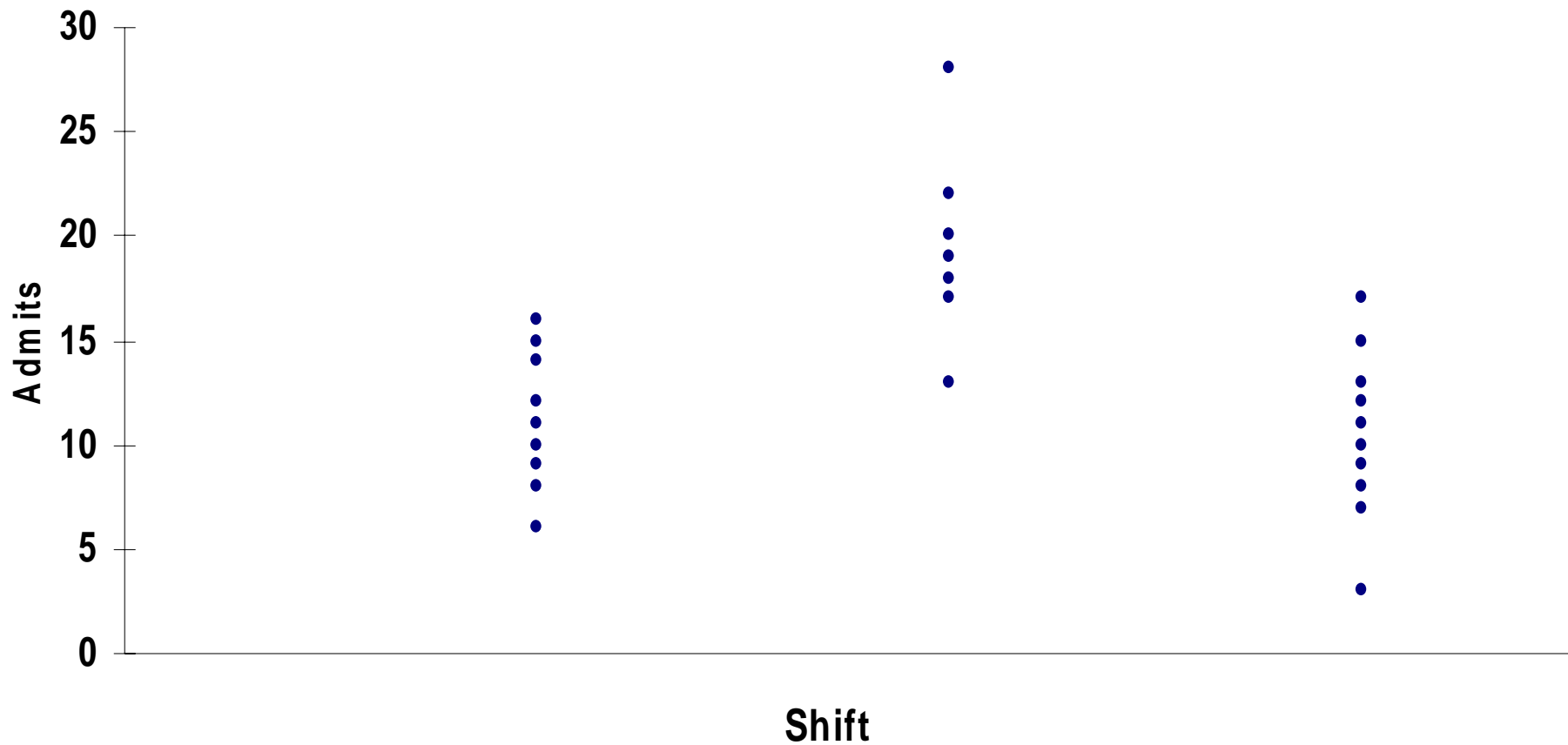
## Wellspan-York Hospital Admissions by Month



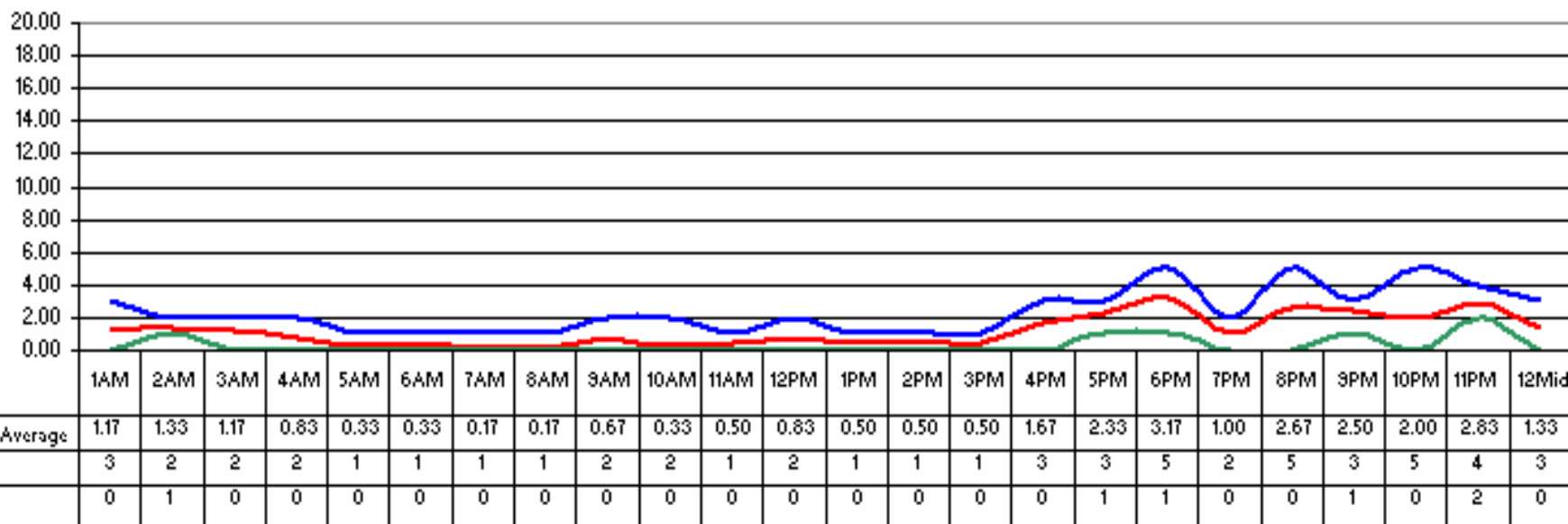
## Wellspan-York Hospital Admissions by Day of Week



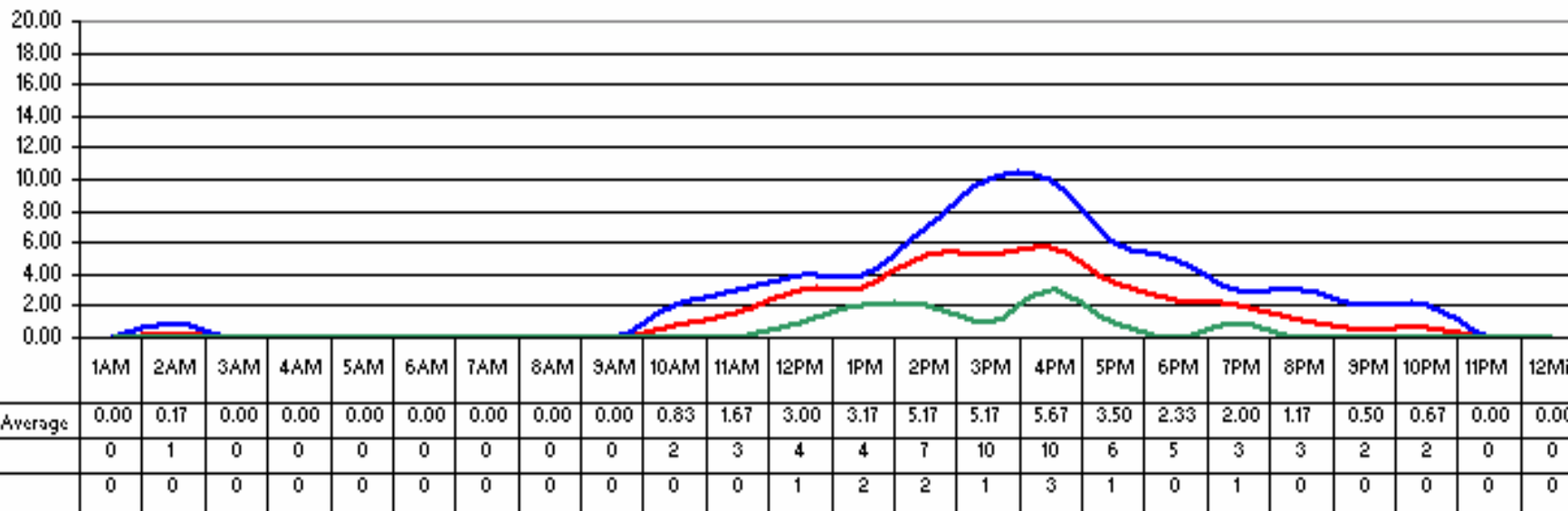
## Wellspan-York Hospital Total Admissions from the ED by Shift



**ADMITS -- Unit: 4B @ Pres Main on (All)s**



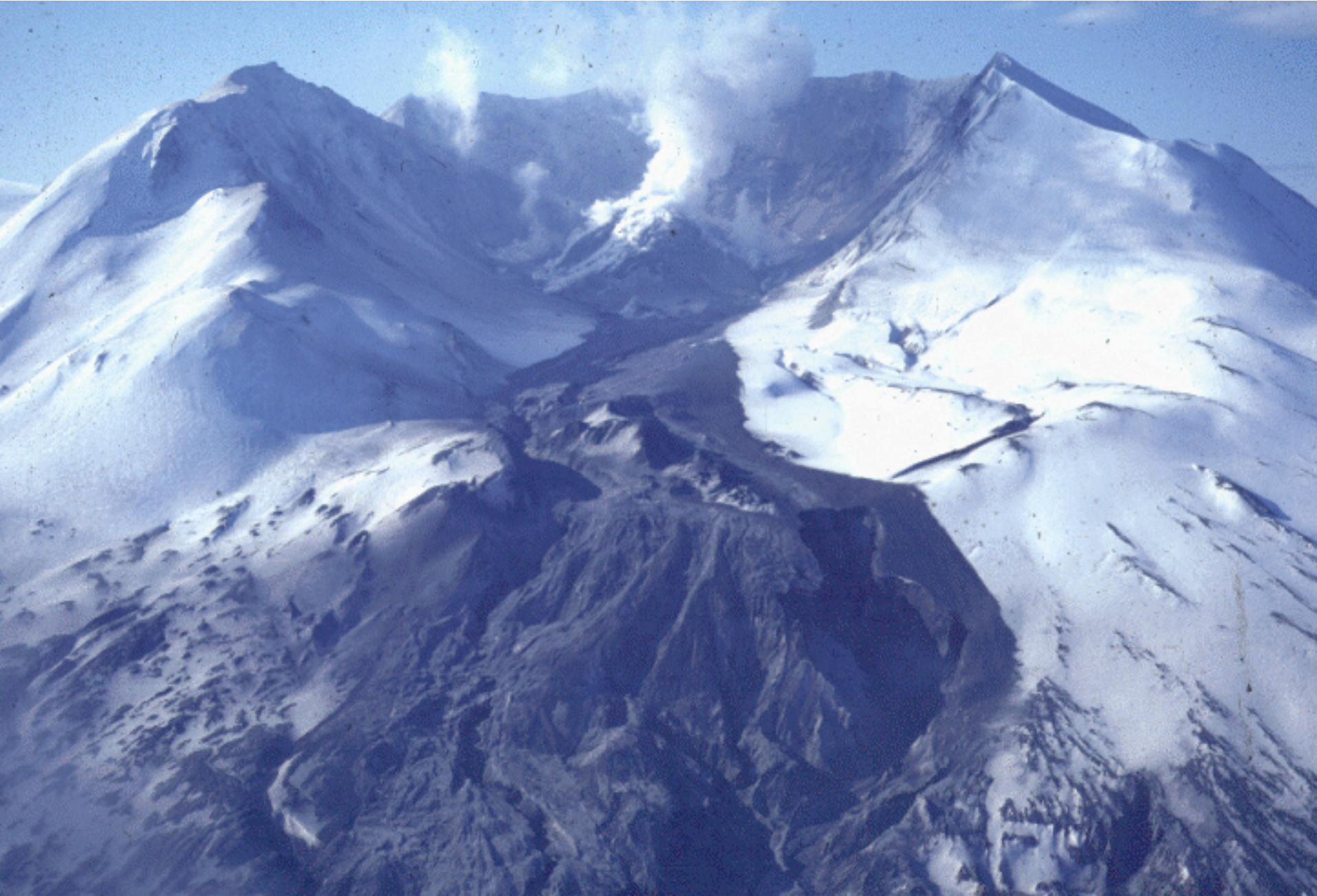
**DISCHARGES -- Unit: 4B @ Pres Main on (All)s**



**TRANSFERS IN -- Unit: 4B @ Pres Main on (All)s**

- Talk with IT about what data is available that might help in planning
- Gather the data and review it. Determine how accurate it is in predicting future demand
- Discuss with the bed coordinator what actions could be taken if occupancy could be predicted from historical data
- Test some of the suggestions over a short period of time

# 3. Early Warning and Response System





- Roof-top cameras that monitor traffic
- Volume forecasting
- Waste has been cut in half
- Reduced waiting time
- Recognition software

Aim: Manage large fluctuations in demand or capacity

Components:

- Signals
- Actions (Contingency plans) based on Signals

Consider an Early Warning and Response System for predicted demand:

- a week ahead
- a day ahead
- the day of

## Affinity Health System – Menasha, Wisconsin

Predicting Demand  
-Week ahead  
-Day ahead

## Poor Predicting of Patient Flow

- Fluctuating census
- Cath Lab patients potential bed needs were not predicted
- Surgery schedule not reviewed to see stress points
- Predictability of ED/Direct admissions not considered
- ED frequently backed up and holding patients overnight

## Staffing Issues:

- Holding surgeries due to lack of staff
- Paying premium dollars to fill open shifts
- Mandatory overtime
- Staff burnout
- Managers spending all their time looking for staff

- We were reactive
- Intermittently called bed huddles only during crises
- Bed huddle meeting focused more on staffing than patient flow

## Extended Friday Bed Huddle

Review scheduled activity for the next week:

- Planned surgeries
- Cath Lab schedule
- Staffing variances
- Predicated Emergency Room admissions

# Weekly Planned Admissions

WEEK OF APRIL 3 – 9								
UNIT	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.	Comments
<b>PCU 1</b>								
-Surgeries	2	1	2	1	2			
- ED admissions	2	2	2	2	2	2	2	
-Discharges	2	1						
-Cath Lab	1		1	Ok		OK	Ok	
-Staff Variance	RN – 1 eve	Ok	RN +1 days		Even RN-1			
<b>ICU</b>								
-Surgeries	3	1	2					
-Cath Lab		1		1				
-Discharge/Trans								
-Staff Variance	Ok	Ok	RN eve/ night 2	Ok	Ok	RN-1	Ok	
<b>PCU 2</b>								
-Surgeries	9	3	10	4	8			
- ED admissions	2	2	2	2	2	2	2	
-Discharges		10	6	6	6	5	6	
-Staff Variance	Ok	Ok	Eve-1 RN	RN +1 Days	Eve-1 Helper	Ok	Days-1 RN	

Every Weekday conduct 12:30 bed meeting and look at the next 24 hours

- Review surgeries and add-ons
- current census
- Update staff variances
- Review accuracy of the planned discharges
- Ensure there are rooms and staff for the predicted ED admissions
- Develop plans as needed to keep flow going for next 24 hours

# Daily Planning Sheet

Unit/Phone	Census		PATIENT PLACEMENT					DATE: _____	
	7 am	3 PM	Surgicals	Caths	Discharge/ Transfer	Staff Variances Other Activity		Other Activity	
ICU (12) 31000	9		2			D PM NOC	RN – 1 RN – 1 RN – 1		
PCU 1 (26) 31543	26				9	D PM NOC	OK OK Helper - 1		
PCU 2 (39) 32188 Peds-32182	30		10		14	D PM NOC	RN + 1 OK Helper – 1	6 Pediatric	
OB/NSY (14) 31280	6					D PM NOC	Ok Ok Ok		
Rehab (10) 30400	8		1		1	D PM NOC	Ok Ok Ok		

- Planned Discharges
  - Daily utilization
  - Weekly predictability
- Unscheduled Admission Trends from the ED and Direct
- Case Management to Bed Huddles

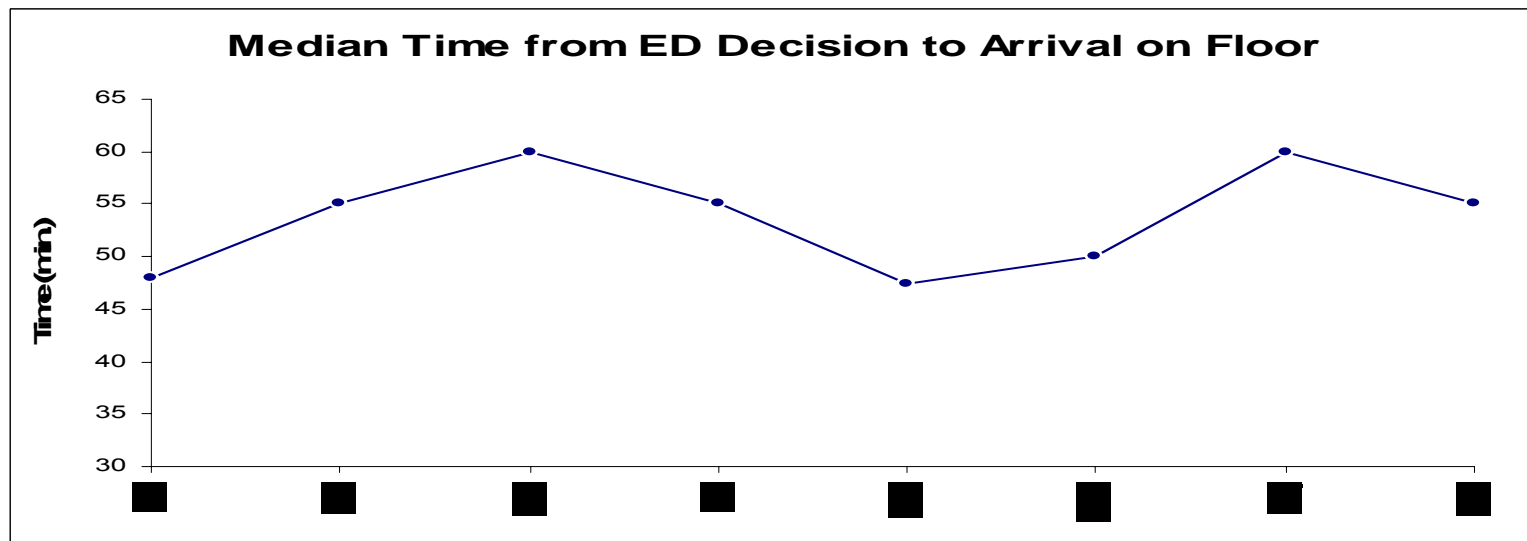
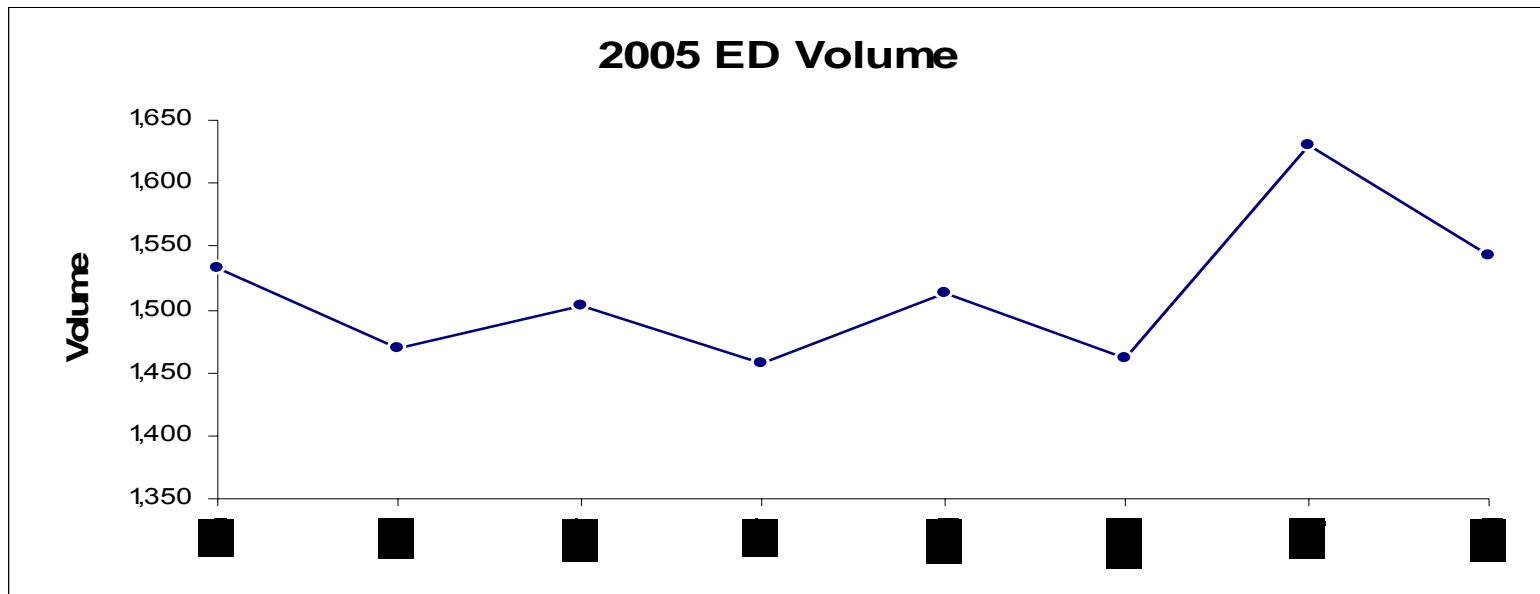
# Planned Discharges

Date	Total PT's DC	Total Scheduled PT's DC	On-Time Discharges	% Timely Discharges	% known DC's
Week of 1/17/05	?	18	7	38%	?
May 2005	491	316	308	97%	64%

# Affinity Health System Improvements Since Last Fiscal Year

	FY04 Hrs Wk/Stat	FY05 YTD Hrs Wk/Stat	Approx FTE Savings	Approx Dollar Savings
PCU1	12.45	10.05	10.59	522,222
ICU	21.28	16.57	7.23	474,081
NICU	15.04	14.24	1.70	105,077
Birthplace	13.93	12.85	2.18	126,088
PCU2	11.04	10.66	1.91	87,618
4 South	10.21	10.00	1.17	53,990
Respiratory Therapy	25.52	22.71	1.44	81,203
Cardiac Cath	488.61	425.79	1.13	78,868
Total			27.35	\$1,403,186

	<b>2004</b>	<b>2005</b>
■ # of admissions	7161	5994
■ # of Observations	2300	2265
■ # of Functional Beds	140	100
■ Case Mix Index	1.2789	1.3042
■ Length of stay	4.56	3.79
■ Bed Turns	81.8	100.8



- Proactive staffing with decreased cost
- Able to plan opening of a closed medical unit as the need is predicted
- No ED diversions since this was developed and did not increase LOS
- Decreased ED bottlenecks
- Appropriately direct patient flow

- Involve multiple disciplines in the process
  - Include case management early
- Gather Data
  - Discharges
  - Trend the emergency department and direct patient admissions and include them into staffing and planning

Make sure you don't quit or  
go back to old habits.

# “Day of” Early Warning: Wellspan-York Hospital

Green Zone	Yellow Zone	Red Zone
<p>Definition: Availability (Combination of the following): ICU, Telemetry: Med/Surg Patients in ED Waiting Room - &lt;10 Patients in ED Hallway - 0</p>	<p>Definition: Availability (Combination of the following): ICU: 4 beds Telemetry: Patients waiting &gt; 4 hours Med/Surg: Patients waiting &gt; 4 hours Patients in ED Waiting Room: 10-15 or any patient with an ESI of 2 Patients in ED Hallway - 1-5</p>	<p>Definition: Availability: (Combination of the following): ICU: 0 beds with Gridlock Telemetry: EAU/ED patients on hold &gt; 6 hours Med/Surg: EAU/ED patients on hold &gt; 6 hours Patients in ED Waiting Room: &gt;15 or more than 1 patient with an ESI of 2 Patient in ED Hallway - &gt;5 Two or more patients who meet trauma team criteria in main ED or in shock</p>
<p>Notify: Hall monitors reflect “green zone”</p>	<p>Notify: Clinical director on call Administrator on Call OOP Department Chairmen/ Service line Leader Directors of Imaging, Housekeeping, Lab and Transport YHLT via email Update hall monitors to reflect “yellow zone” status</p>	<p>Notify: Clinical director on call President of the Medical Staff All staff - FYI screen Put notice of “Red Zone” status on power chart. Update hall monitor to reflect “red zone” status</p>

# “Day of” Early Warning

Green Zone	Yellow Zone	Red Zone
<p>Actions:</p> <p>Conduct Bed Huddle Meeting at least every morning</p> <p>Care Management to work with Nurse Managers and Physicians to expedite discharges</p> <p>Prioritize Imaging and Lab tests for patients being admitted and discharged</p> <p>Administrative Coordinator (AC) has ultimately authority related to bed placement including all transfers/Direct Admissions must be approved by the Administrative Coordinator</p> <p>"One hour rule" for physicians seeing patients in the ED is enforced</p> <p>Floor nurses must take call/fax report as soon as the bed is ready. Patient is sent immediately</p> <p>AC and Housekeeping Supervisor prioritize rooms to be cleaned</p>	<p>Actions:</p> <p>Provide bed status update at least every two hours in the ED and huddle and needed</p> <p>Staffing expectations are increased to reflect 100% occupancy.</p> <p>Send additional RN/LPN staff to ED to care for admissions/holds</p> <p>Initiate Team Triage in ED</p> <p>Deploy additional transport staff to ED</p> <p>Deploy additional housekeeping to ED and/or inpatients units based on priority discharge beds</p> <p>Open overflow areas</p> <p>Relocate non-urgent ED patients back to the waiting room while awaiting results of diagnostic tests (to free up bed) –</p> <p>Consider admit to LTAC</p> <p>Contact VNA to bring in additional resources to support early patient discharge/admission avoidance</p> <p>Care Managers initiate rapid discharge review process</p> <p>YH provide transportation for discharged patients who need it.</p>	<p>Actions:</p> <p>Continue actions initiated during the Yellow Zone</p> <p>Consider the need to go on Divert</p> <p>Open additional overflow units/beds Urgent Care Center extends hours of operation.</p> <p>Set up and staff discharge holding area(s).</p> <p>Transfer ED patients who require admission to Gettysburg Hospital or Hanover Hospital if they are not on divert</p> <p>Physicians to conduct evening rounds as appropriate</p> <p>Notify NH/Rehab of need to discharge patients in the evening</p> <p>Evaluate the possibility of cancellation of scheduled elective Procedures and transfers.</p> <p>Assess elective volume of cases for next three days.</p>

- Start with developing a “day of” early warning and response system and then include a “day ahead” and “week ahead”
- For the day of, discuss with some units what signals them that problems with flow will occur that day
  - Discuss the actions that could be taken on the same day that flow problems are signaled
  - Develop preliminary “Signals and Actions Document” (See Wellspan example) and ask units to test them
- For a week ahead and a day ahead predictions, see if the data on the Week Ahead and Day Ahead Templates are available
  - Determine the accuracy of the predictions using the data
  - Discuss with staff what actions could be taken if large fluctuations are predicted

## 1. Bed Management Process

Aim: Efficiently transition patients through the system

Some components of the process could be:

- Bed Coordinator
- Bed Huddles
- Bed status (electronic bed tracking systems, bed boards)

## 2. Demand/Capacity Measures and Planning

Aim: Planning ahead to better match capacity and demand

Use historical data to understand and plan for variation in demand month to month, day to day, etc.

## 3. Early Warning and Response System

Aim: Respond to large fluctuations in demand or capacity

Consider predicting and acting on demand:

- a week ahead
- a day ahead
- the day of

## Web&ACTIONS

- Preventing Adverse Drug Events through Medication Reconciliation (Begins November 8, 2005)
- Building a Safety Culture through Leadership WalkRounds (Begins March 23, 2006)
- Preventing Avoidable Deaths with Rapid Response Teams (Begins November 2005)
- Reducing Complications from Ventilators and Central Lines in the ICU (Begins October 26, 2005)
- Using the Global Trigger Tool for Improving Patient Safety (Begins February 14, 2006)

## 17<sup>th</sup> National Forum on Quality Improvement in Healthcare

December 11-13, 2005, Orlando, FL

For more information on the program listed above, keep an eye on the Programs page on [www.ihl.org](http://www.ihl.org).



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