Are We Ready and How Do We Know? The Urgent Need for Performance Measures in Hospital Emergency Management

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Performance Measures in Hospital Emergency Management: Key Questions

- Are we Prepared / Are we Ready?
- How do we do:
  - Mitigating Emergencies?
  - Planning for Emergencies?
  - Responding to Emergencies?
    - Internal & External to Our Institutions
  - Recovering from Emergencies?
  - Increasing Awareness?
- As Compared to Others?

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Six Factors Influencing Hospital Emergency Management

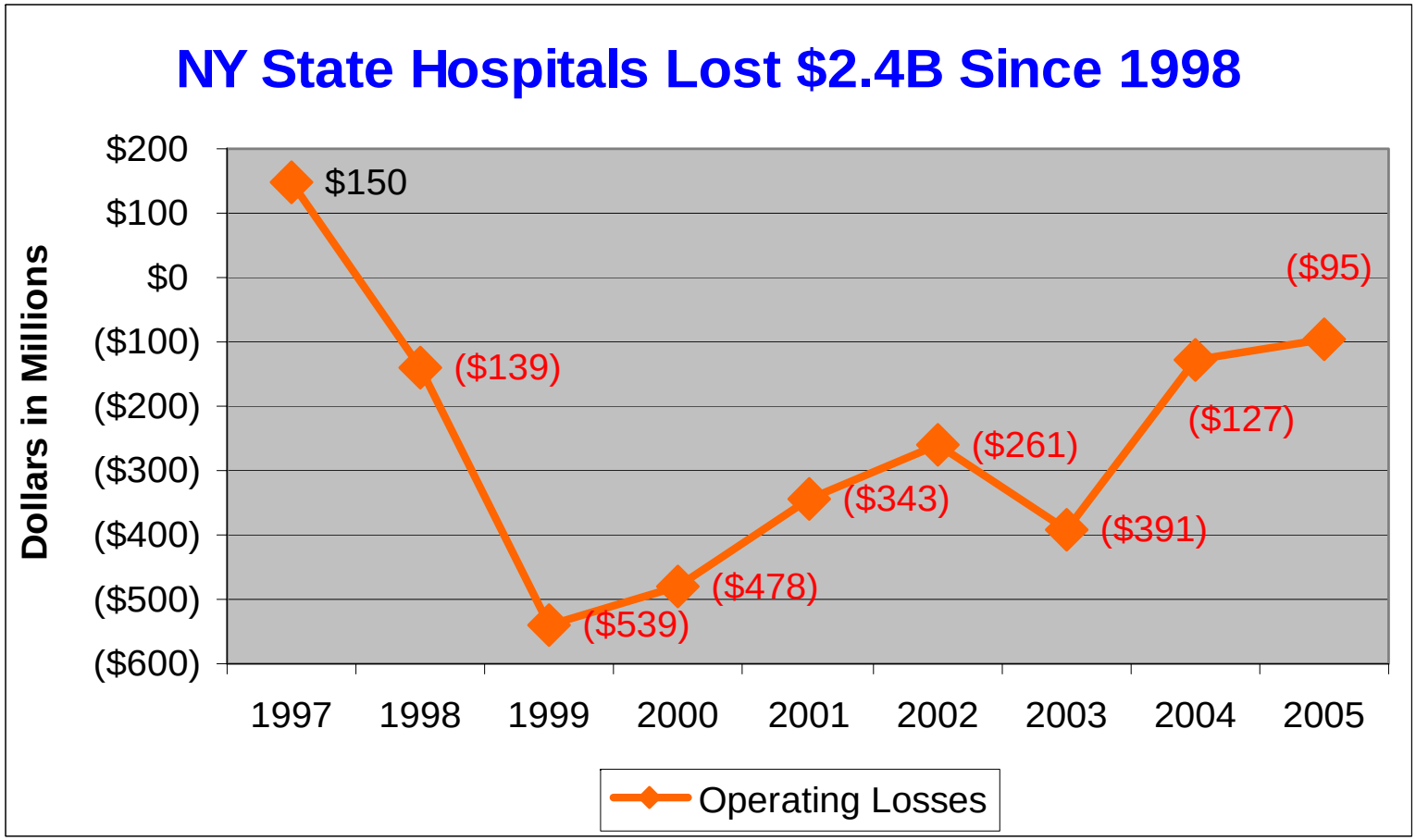
1. Capacity Constraints
2. Financial
   - Expenses Outstripping Revenues
   - Shrinking Government Reimbursement
3. Workforce: Staffing Shortages / Increasing Labor Expenses
   - Nursing
   - Pharmacy
4. Unrealistic & Heightened Expectations
   - Patients / Consumers
   - Media
5. Rising Regulatory & Accreditation Issues
6. Lack of Standardized Performance Metrics
   - If We Don't Do it, Who Will?

Factor 1: Capacity Constraints

- **Hospitals Reporting Daily ED Crowding:**
  - **40%**
- **Boarding:**
  - **Patients Waiting ≥ 48 Hours for Inpatient Beds**
- **Ambulance Diversions:**
  - **500,000 in 2003**
- **Inefficiency:**
  - **Limited Use of Tools to Address Patient Flow to Reduce Crowding**
- **Fragmentation:**
  - **Limited Coordination of Regional Patient Flow**

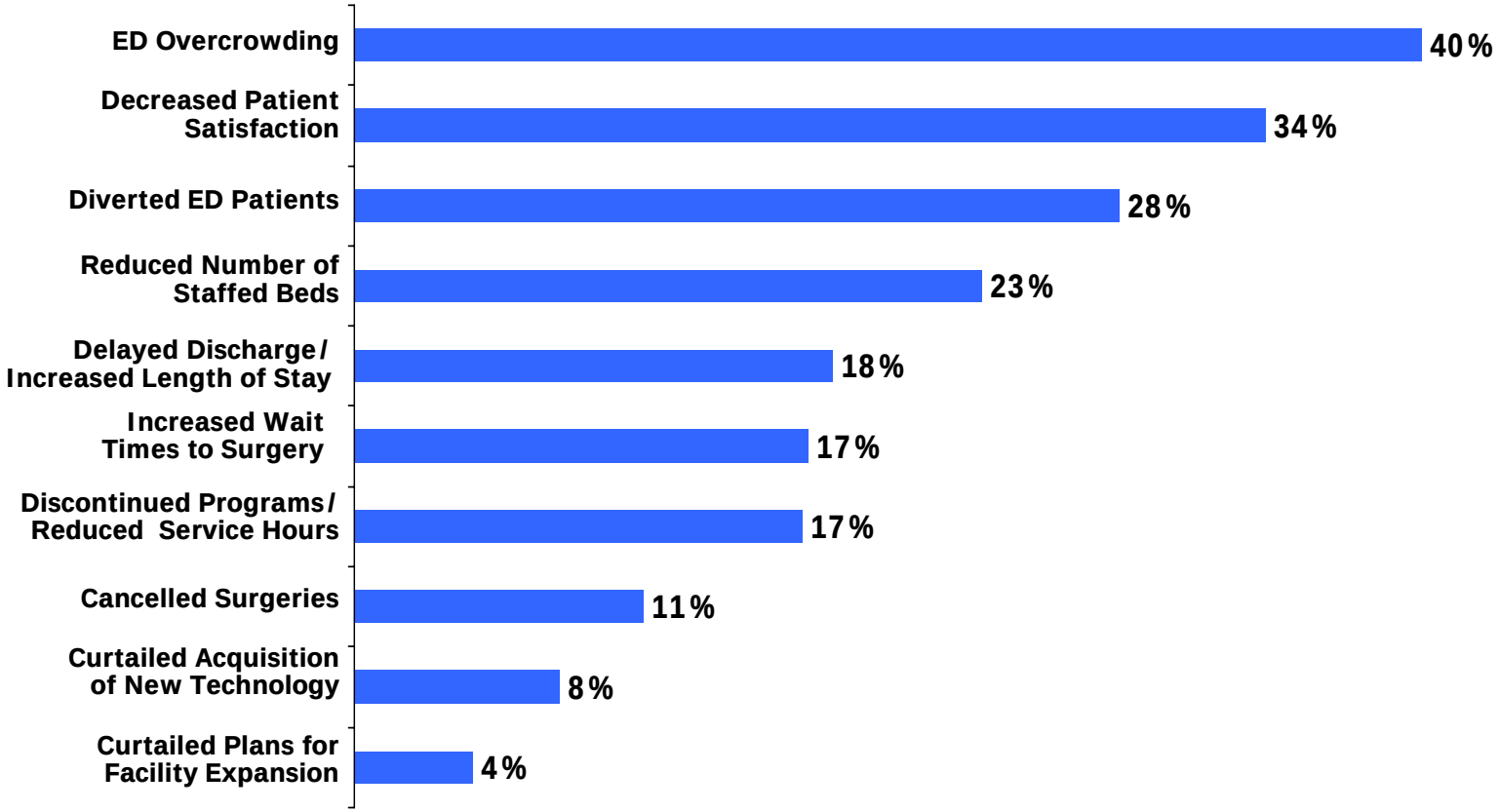
Source: "Hospital Based Emergency Care at the Breaking Point," Institute of Medicine, 2006

Factor 2: Financial Challenges



Factor 3: Workforce Challenges

Hospitals Reporting Service Impacts of Workforce Shortage



Source: 2004 AHA Survey of Hospital Leaders

Factor 4: Unrealistic & Heightened Expectations

- Bastion of Community Safety
- Handle Everything
  - Medical
  - Trauma
  - Infectious Disease
  - Behavioral
  - And More…
- Handle it Right…Every Time…Or Else…
- Public Has Poor Understanding of Hospitals' Roles & Capabilities
- Counterpoint:
  - The Hospital as Victim or Target

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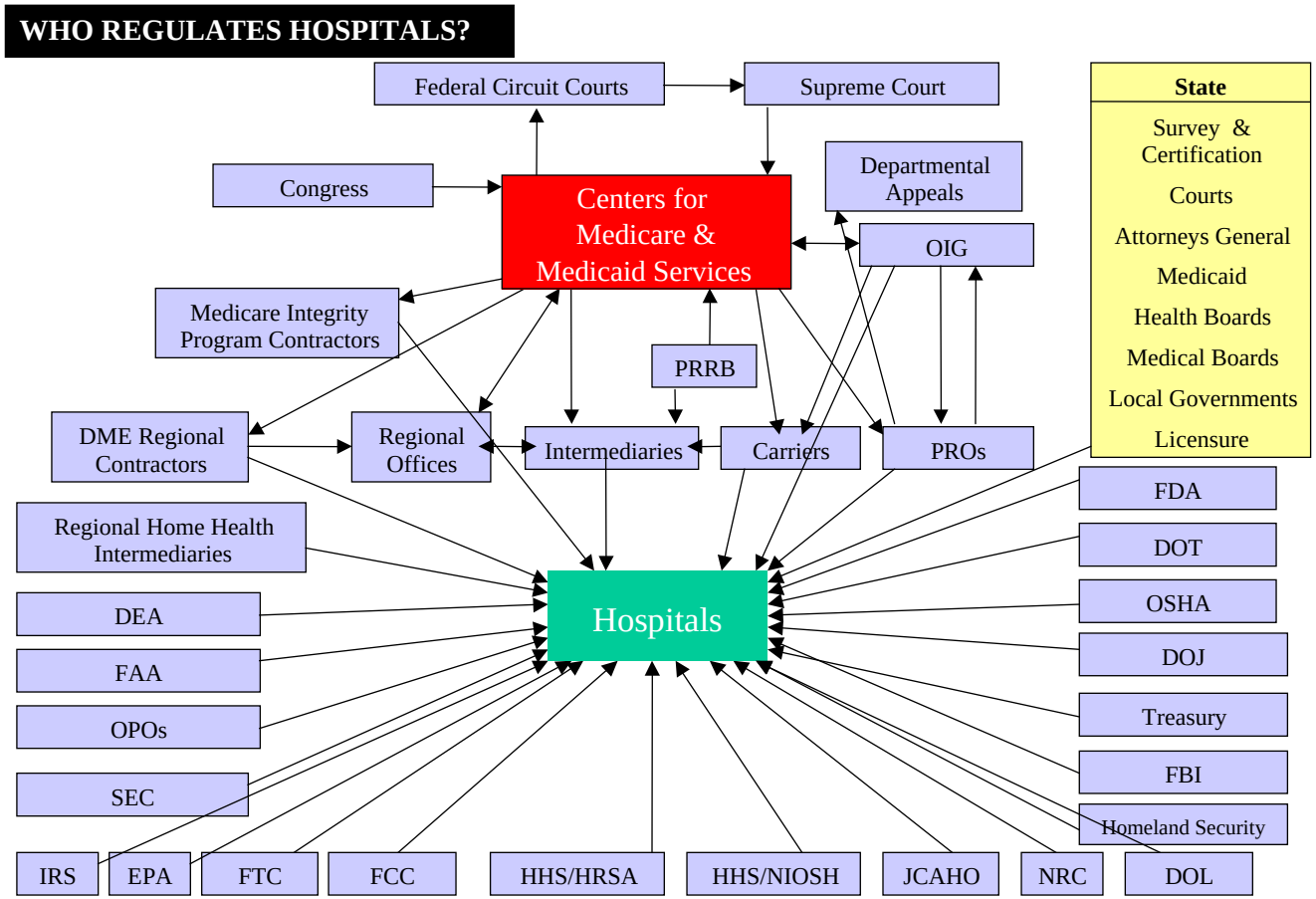
Factor 5:
Rising Regulatory & Accreditation Issues



Source: AHA 2004

Factor 6: Lack of Standardized Healthcare Emergency Management Performance Metrics

- **Lack of universally accepted**
  - **Preparedness definitions**
  - **Performance measures**
- **Difficult to measure capacity to manage events that occur infrequently, if at all**
- **Relative newness of the field**
  - **Lack of evidence base / "references"**
  - **Lack of validity of existing metrics**

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The Current State: From the Literature 1

"…the lack of well-accepted, standardized measures and metrics makes it difficult to satisfy the demands for accountability, or …gauge the level of preparedness."

"Even among jurisdictions widely regarded as exemplary, the use of systematic quality improvement strategies…appears to be rare."

- "Public Health Preparedness: Evolution or Revolution?" Lurie, et al., *Health Affairs*, 25:4, (2006).

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The Current State: From the Literature 2

"A major problem affecting the outcome of disaster health care is the lack of internationally accepted standards of performance for disaster health management and response…There are no well-defined and generally accepted "best practices."

- "Accentuate the Positive" Birnbaum, ML, *Prehospital and Disaster Medicine*, July-August, 2006.

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The Current State: From the Literature 3

"…few means are available for healthcare institutions to evaluate the quality of their emergency preparedness initiatives."

Cagliuso, Sr., N.V. & Lazar, E.J., *System Quality Review, Special Issue,* October 26, 2006.

"…issues of preparedness, response, recovery and resilience are being scrutinized…highlighting a critical need for increased transparency, accountability, and learning in disaster and emergency management evaluation."

Call for Abstracts, *New Directions for Evaluation,* February, 2007.

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Hospital Emergency Management Performance Measures: Some Examples

- **HRSA: National Bioterrorism Hospital Preparedness Program:**
  - **28 "Critical Benchmarks & Sentinel Indicators"**
- **CDC: Preparedness Cooperative Agreement & Supplemental Pandemic Influenza Guidance:**
  - **23 "Performance Measures"**
- **Joint Commission Emergency Management Standards**
  - **6 "Critical Functions"**

Evolution of Healthcare Quality: The Institute of Medicine's Landmark Reports

- **1999 - "To Err is Human: Building a Safer Health System"**
- **2001 - "Crossing the Quality Chasm: A New Health System for the 21st Century"**
  - **Exposed Inadequacies of U.S. Healthcare System**
- **2003 – "The Quality of Health Care Delivered to Adults in the U.S." McGlynn, et al, *N Engl Med***
  - ***50% of adults not receiving care that corresponds with basic guidelines***

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Traditional Categorization of Healthcare Performance Metrics: "VSOP"

- **Volume:**
  - **Frequency improves quality**
- **Structure:**
  - **Binary metrics**
- **Outcome:**
  - **Morbidity / Mortality**
- **Process:**
  - **Evidence shows that doing these activities will improve outcomes**

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Traditional "Volume" Metrics: You Decide!

Frequency Improves Quality

Hospital A

- 2000 Cases
- 10 Physicians
- 200 Cases Each

Hospital B

- 750 Cases
- 2 Physicians
- 375 Cases Each

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Traditional Healthcare Measures "Structure" Metrics

Binary (Yes/ No)

- Stroke Center
- ICU
- 911 Receiving
- Rapid Response Teams
- Cath Lab, Cardiac Surgery

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Traditional Healthcare Measures
"Outcomes" Metrics

Morbidity / Mortality

- Patient Satisfaction
- Quality of Life
- Return to Functional Status
- Return to Work

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Traditional Healthcare Measures
"Process" Metrics

Joint Commission CMS Core Measures

Acute Myocardial Infarction (AMI)

- AMI-1 Aspirin at Arrival
- AMI-2 Aspirin Prescribed at Discharge

Heart Failure (HF)

- HF-1 Discharge Instructions
- HF-2 LVF Assessment

Pneumonia (PN)

- PN-1 Oxygenation assessment
- PN-2 Pneumococcal screening and/or vaccination

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Healthcare Performance Measures Comparison

Traditional Healthcare

- Evidence-based
- Defined metrics
- Established definitions
- Large case #s
- Replicability of cases
- Established clinical principles
- Established benchmark mechanisms

Emergency Preparedness

- Little evidence
- Undefined metrics
- Unestablished Definitions
- Infrequent events
- Unique situations
- Rapid evolution of the discipline
- No benchmarking

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Application of Traditional Quality Principles to Hospital Emergency Preparedness

- Determine practice standards
- Identify appropriate metrics
- Define metrics
- Determine data collection protocols
- Establish comparison groups
  - Longitudinal
  - Trans institutional
- Identify opportunities for improvement

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Hospital Emergency Management Measures: "Volume"

- **Volume may be applicable**
  - ICU Patients
  - ED Visits for major trauma
  - Ambulance
- **Lack of "volume" may not be correctable**
- **May need to compensate elsewhere**
  - Rotate personnel
  - Increase drill / exercise frequency
  - Identify institutional choke points

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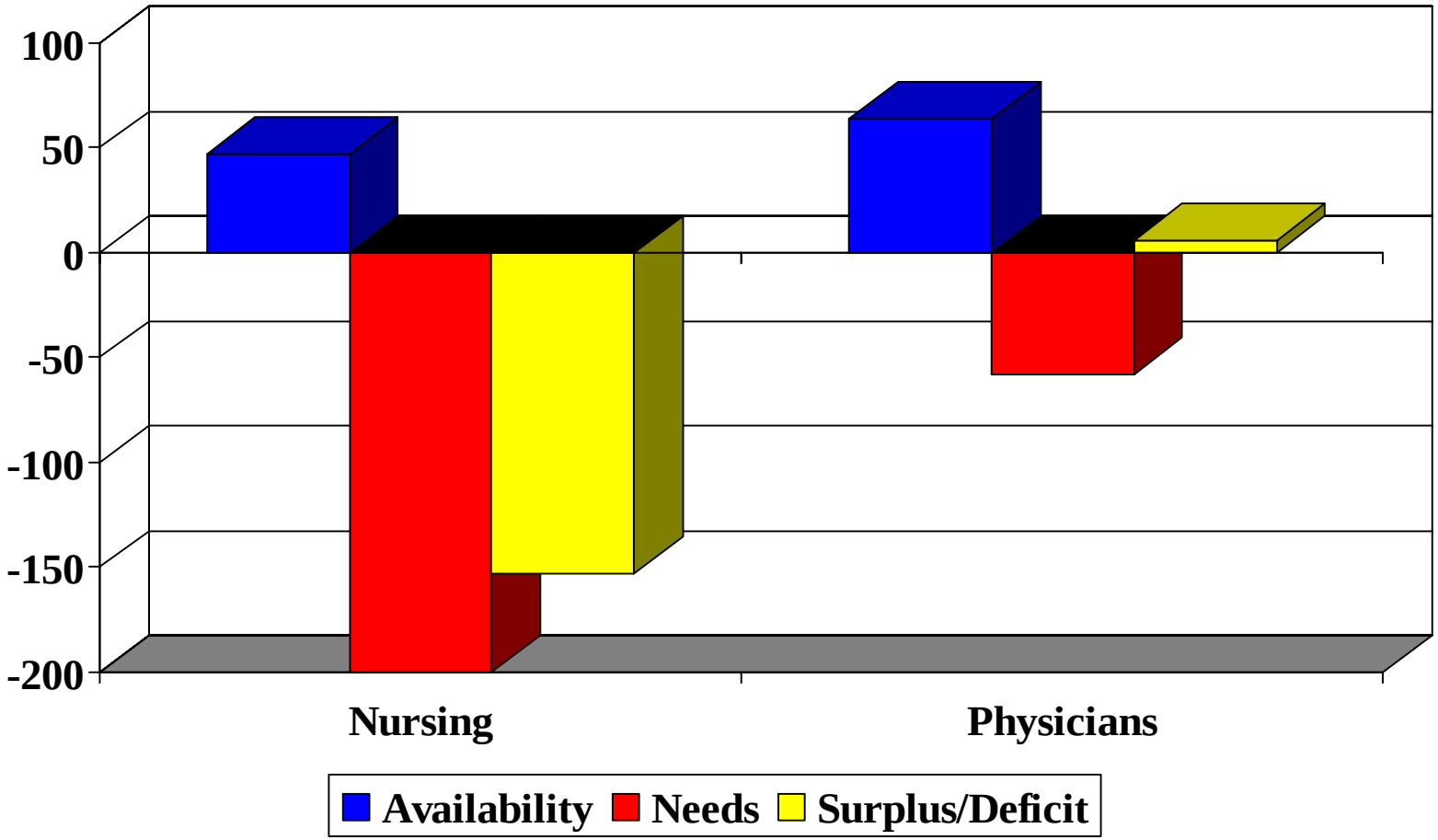
Hospital Emergency Management Measures: Identify Institutional Choke Points



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Hospital EP Measures "Structure" Metrics

- Binary (Yes/No)
  - Designated EP Coordinator
  - Equipment & Supply Cache
  - NIMS Certifications
- "Easiest" aspect to correct in hospital EP quality efforts
- May be most difficult aspect to correct in general healthcare quality efforts

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Hospital Emergency Management Measures: "Outcomes" & "Processes" Paradigm I

- Examine "normal / routine / frequent" occurrences that most closely replicate disasters
  - Cumulative statistics (mean, median, mode) don't show distribution
  - To compensate, focus on outliers as they most closely replicate disaster situations
  - Separate during "outlier" periods rather than aggregating with general performance or discarding

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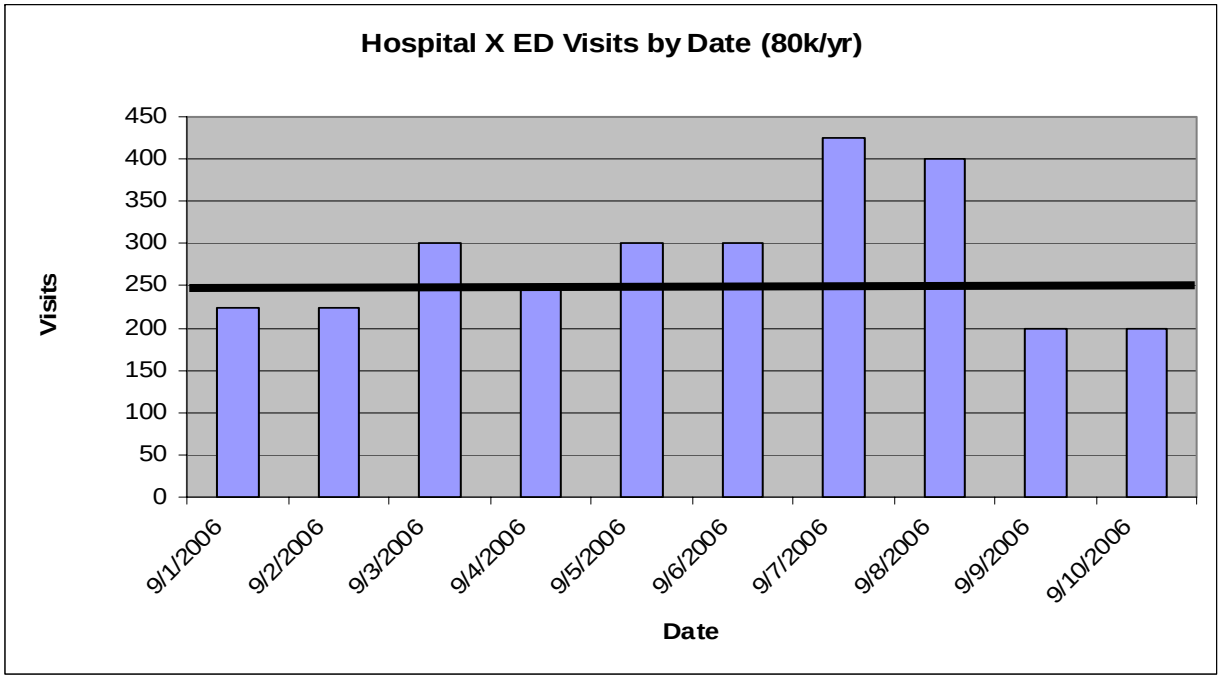
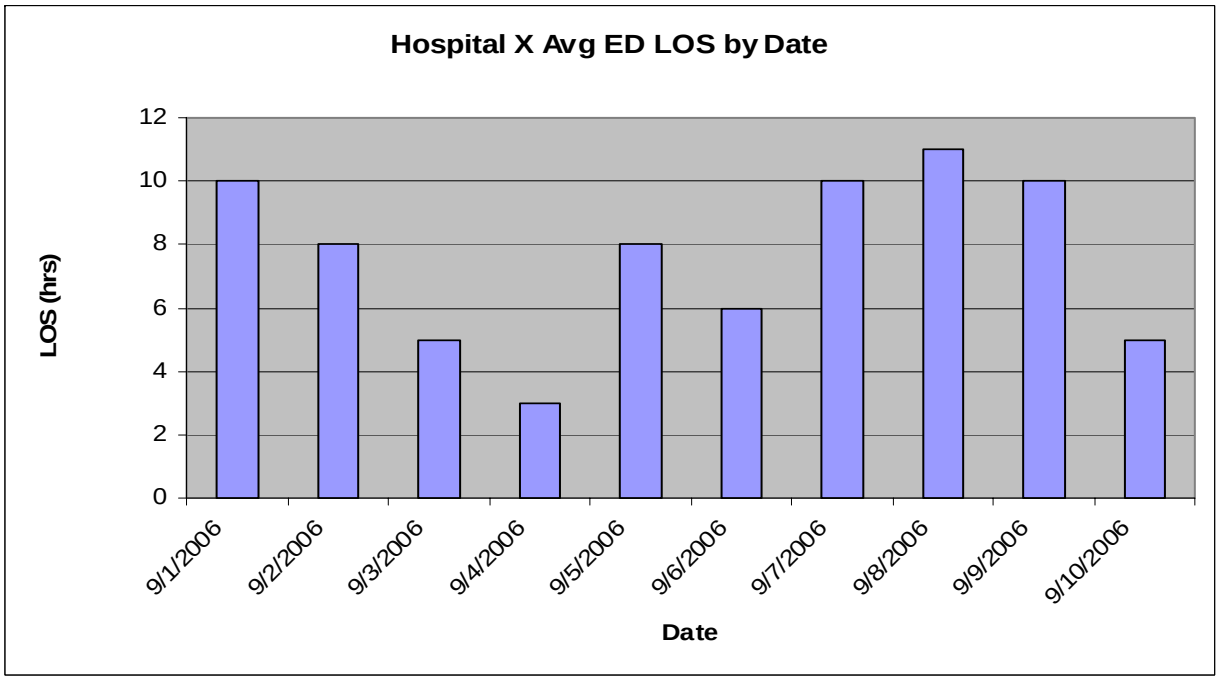
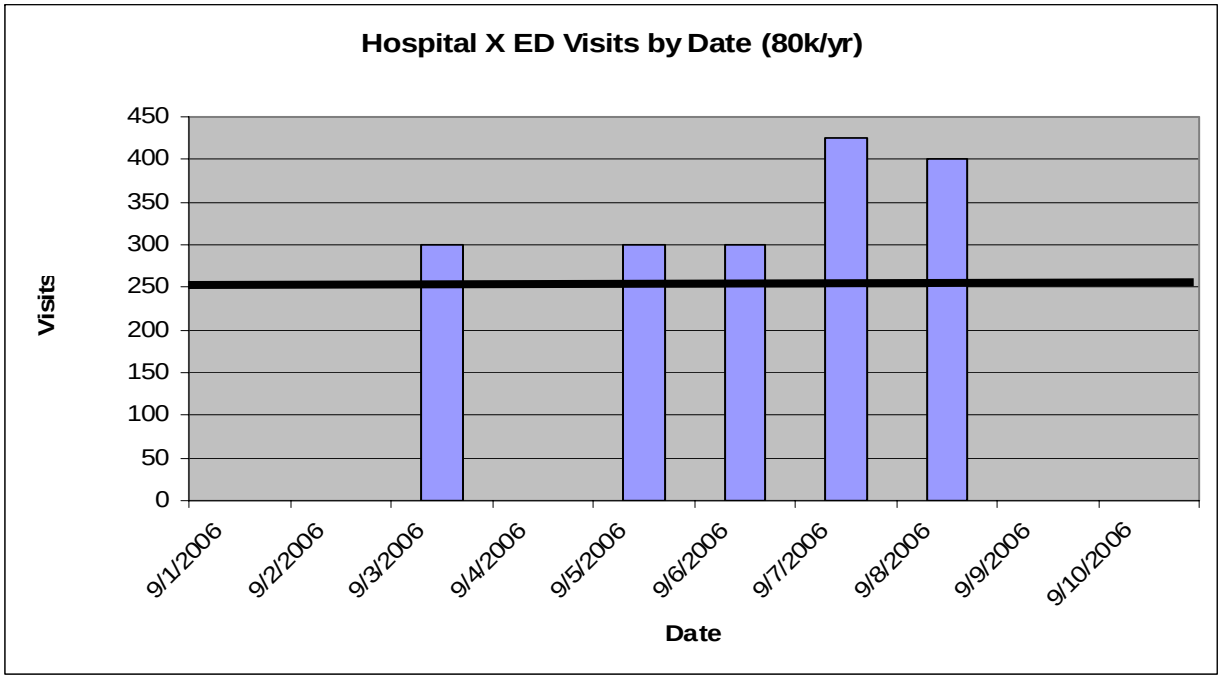
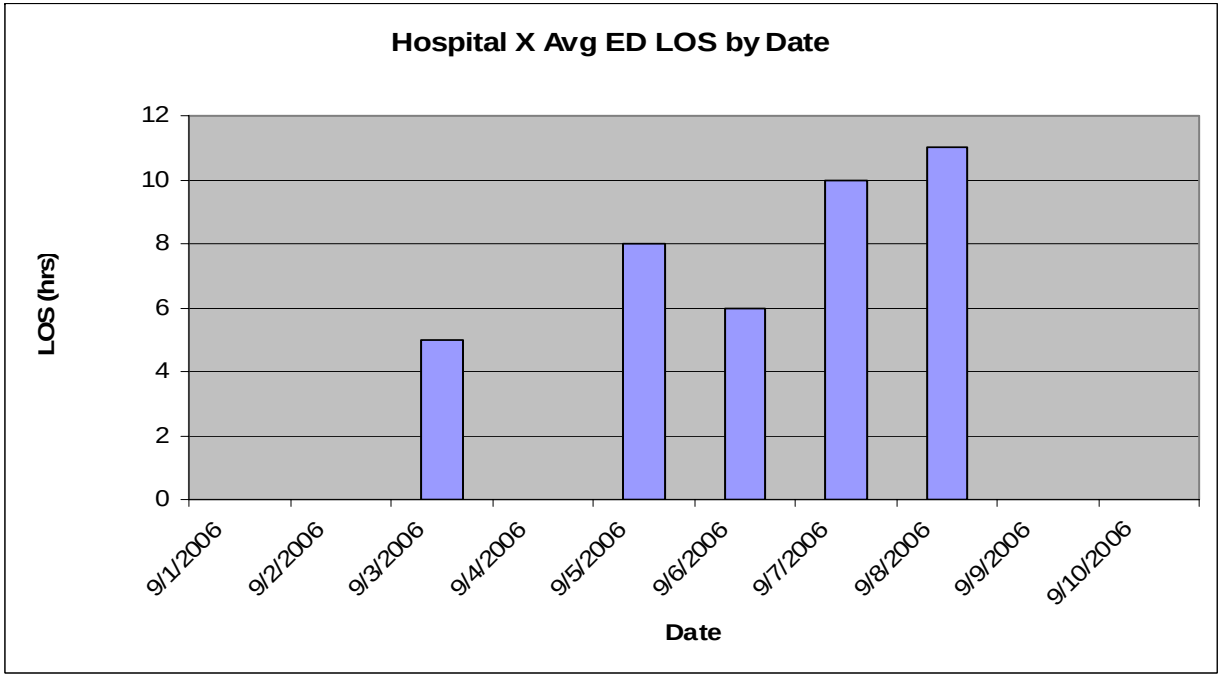
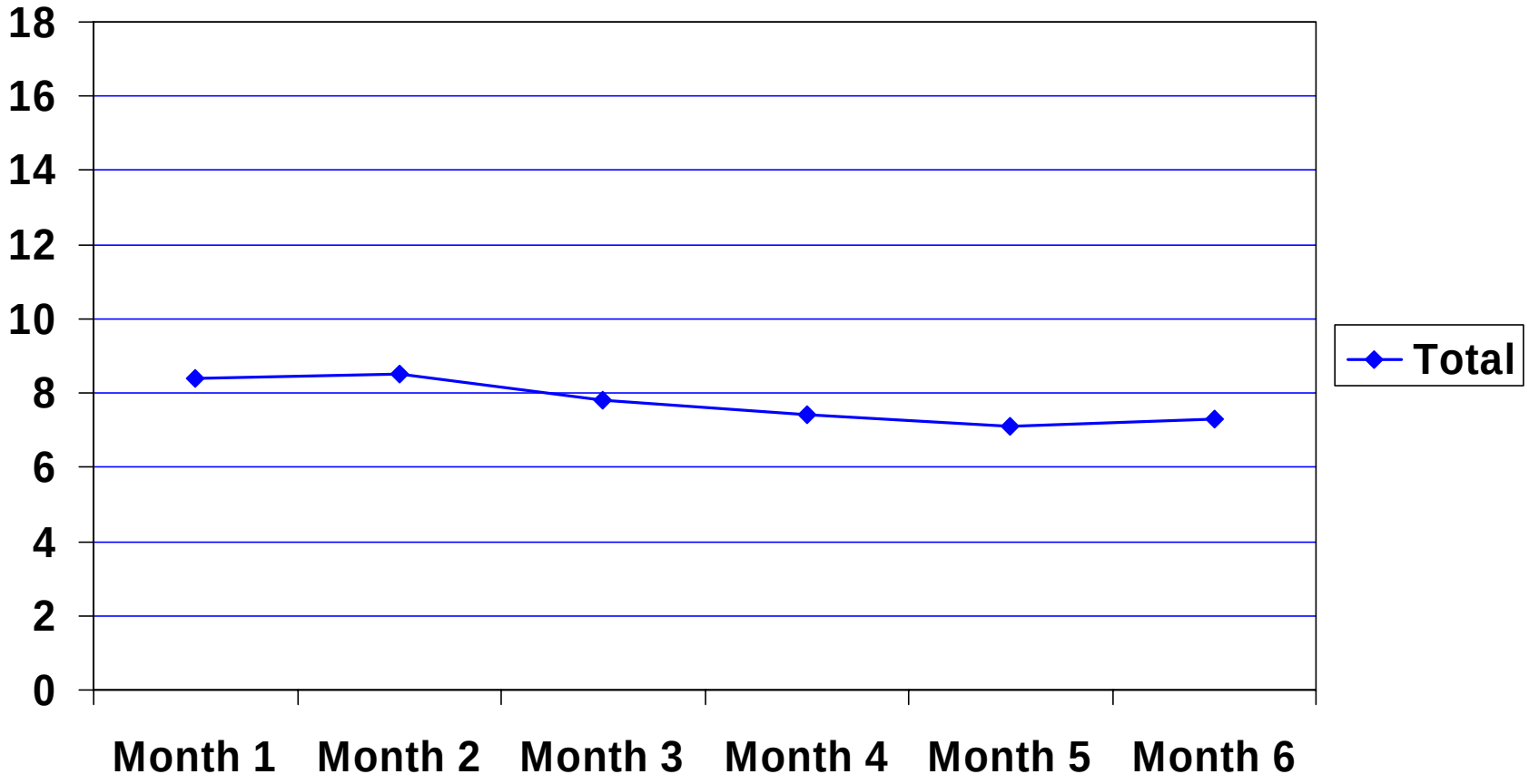








Hospital Emergency Management Measures Outcomes" & "Processes" Paradigm I Example ED LOS



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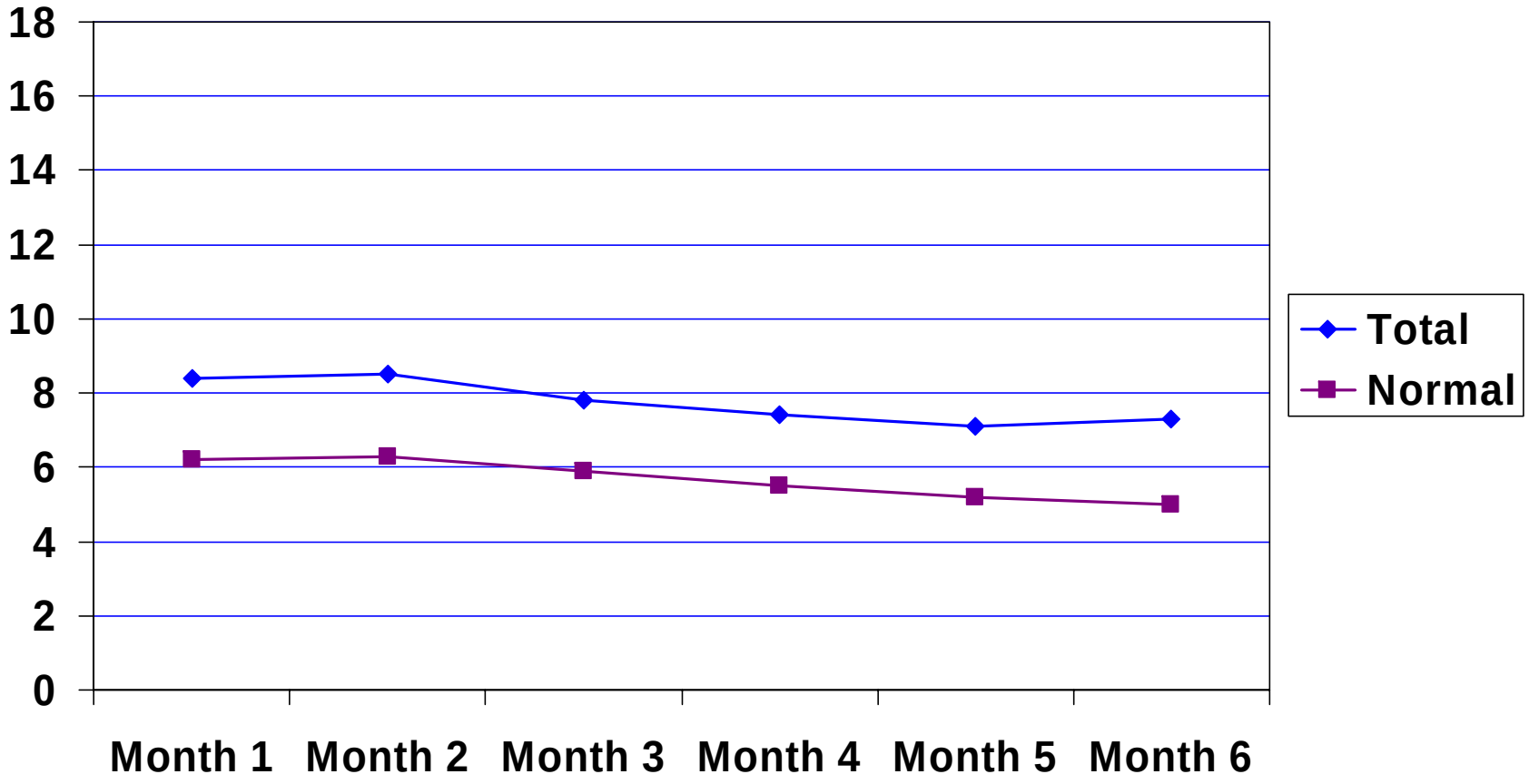

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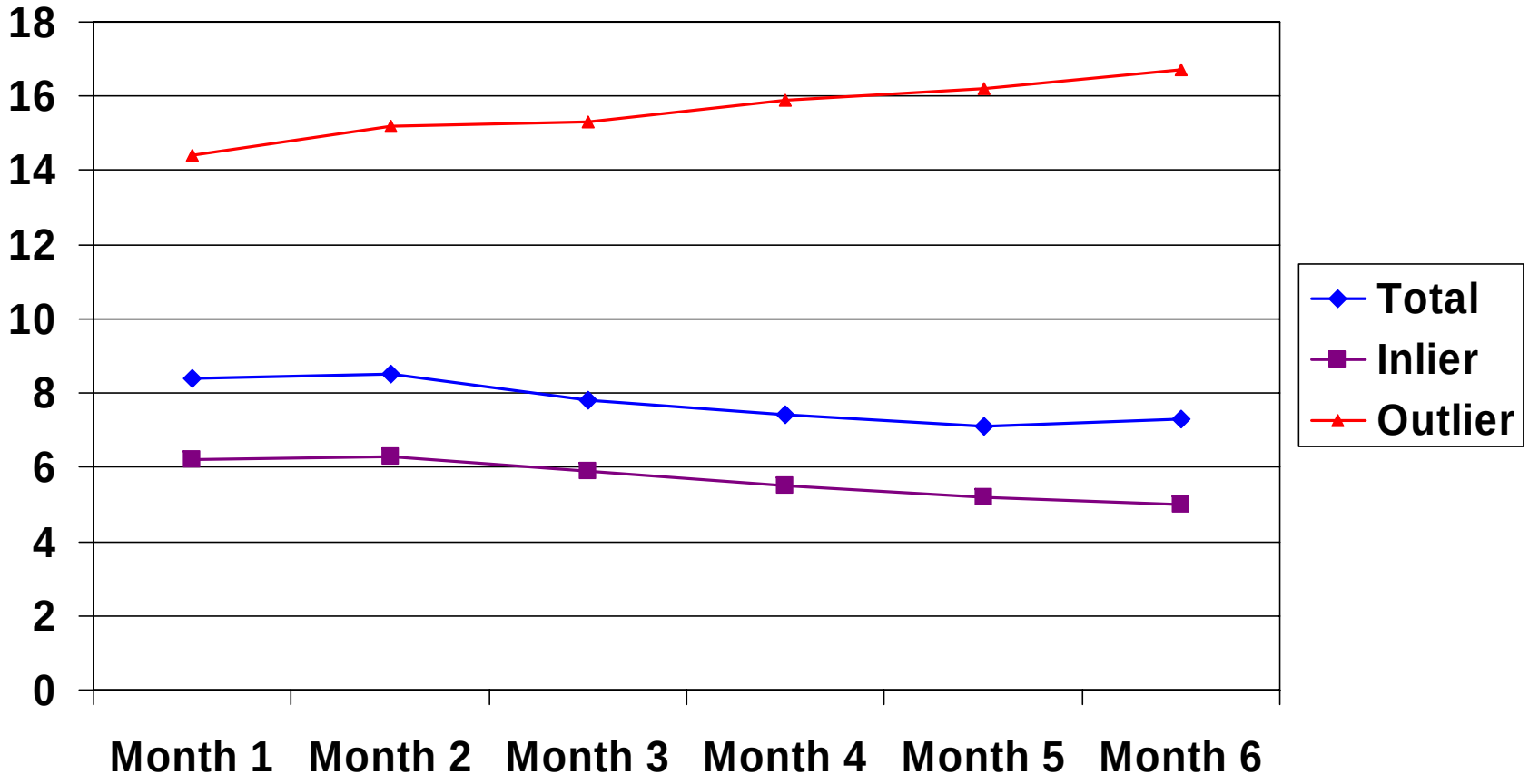

Hospital Emergency Management Measures "Outcomes" & "Processes" Paradigm II

- Analyze data during disaster situations applying traditional quality performance measures
  - ED LOS during blackout
- Performance targets may be different during disasters (e.g., outliers)
- Establish targets for both "normal" & "disaster"
  - Definitions of metrics may be different during disasters
- Establish disaster scenario definitions

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Summary

- Current practice of increasing hospital emergency management "structure" metrics alone will not yield improvements
  - Apply traditional healthcare quality paradigms where possible (VSOP)
  - Identify proxies such as outlier periods
- Establish & define emergency preparedness definitions & metrics
- Share best practices & benchmarks
- Develop & Implement Evidence-Based National Hospital Emergency Management Performance Measures

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