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# Administrative Implementation of Emergency Medicine Pharmacy Services

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# Cedars-Sinai Medical Center

- 950 beds
- Tertiary care, non-profit, teaching institution
- Emergency Department
  - Level 1 trauma center
  - Fast Track (urgent care) area
  - 77,000 visits/year
  - 31% of pts are admitted



# Pharmacy Department

- Decentralized services via 6 satellites
- 3 outpatient pharmacies
- 197 FTEs
- ED Staffing
  - Pharmacists-2 FTEs
    - Coverage: 11:00 am – 9:30 pm, 7 days/week
  - Technician 1 FTE




# Creating Expectations

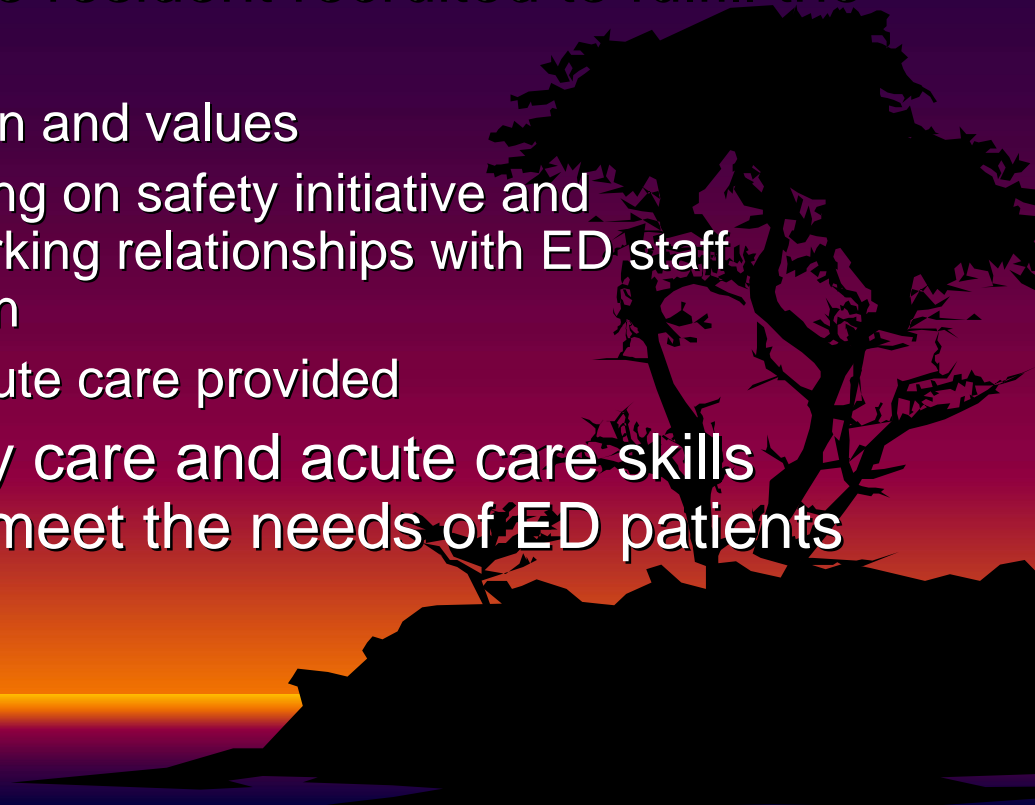
- IHI safety initiative in Emergency Department provided opportunity for pharmacist participation; primary care resident asked to participate
- Resident played instrumental role in collaborating with ED staff to focus on medication safety



# Timing is Everything

- JCAHO requirement to provide one standard of care
  - Decentralized pharmacist model existed throughout inpatient areas
  - ED Co-Chairs went to MEC and requested addition of pharmacist position to provide consistency in patient care
  - Approval obtained for 1.0 FTE in 2002
  - Initial staffing: M-F day shift
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- A silhouette of a large, leafy tree stands on a rocky outcrop against a vibrant sunset sky. The sky transitions from a deep purple at the top to a bright orange and yellow near the horizon, where a thin line of light suggests the setting or rising sun. The foreground is dark, with the silhouette of the tree and rocks.

# Identifying the Right Candidate

- Initial approach: decision to recruit individual with ED residency training
  - Ultimately, primary care resident recruited to fulfill the ED pharmacist role
    - Possessed shared vision and values
    - Experience in ED working on safety initiative and established positive working relationships with ED staff during residency rotation
    - Additional training in acute care provided
  - Combination of primary care and acute care skills deemed necessary to meet the needs of ED patients
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# Evolution of Position

- Dimensions
  - Clinical
  - Distributive
  - Administrative



# Clinical Priorities

- Ensuring consistency with inpatient clinical services
  - Formulary
  - Dosing Protocols
  - Target Drug Programs
- Acute responsibilities
  - Code Brains
  - Code Whites
  - Code Blues, focus on pediatrics
  - Code Trauma



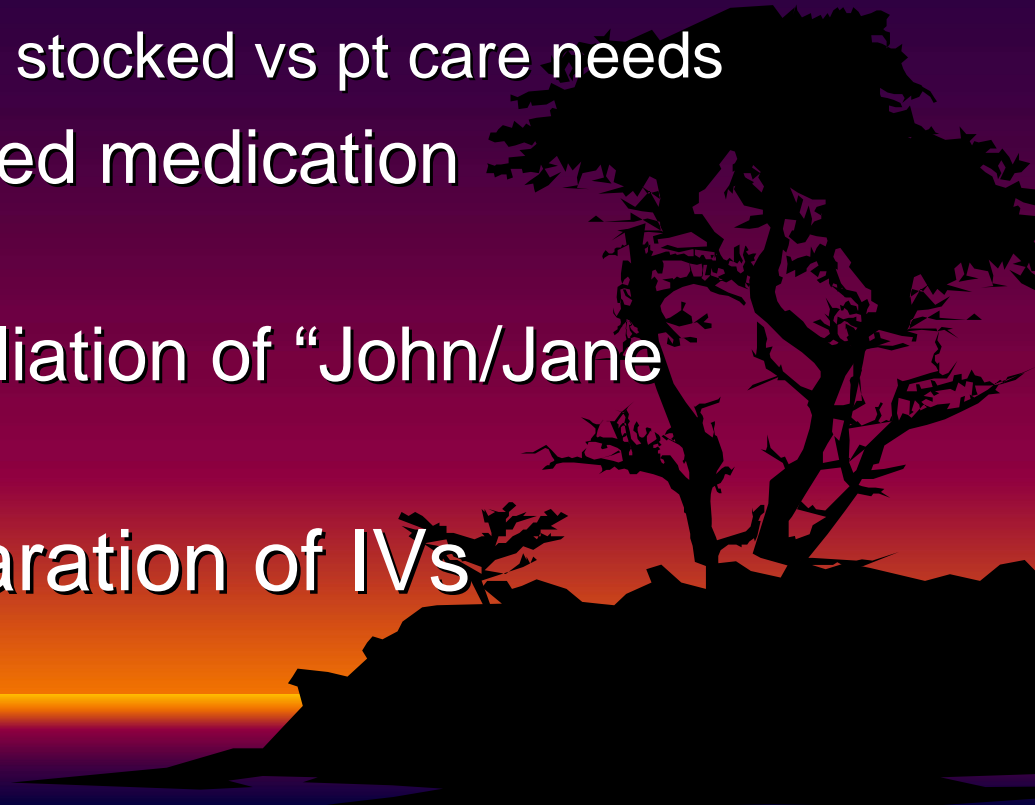


# Clinical Priorities

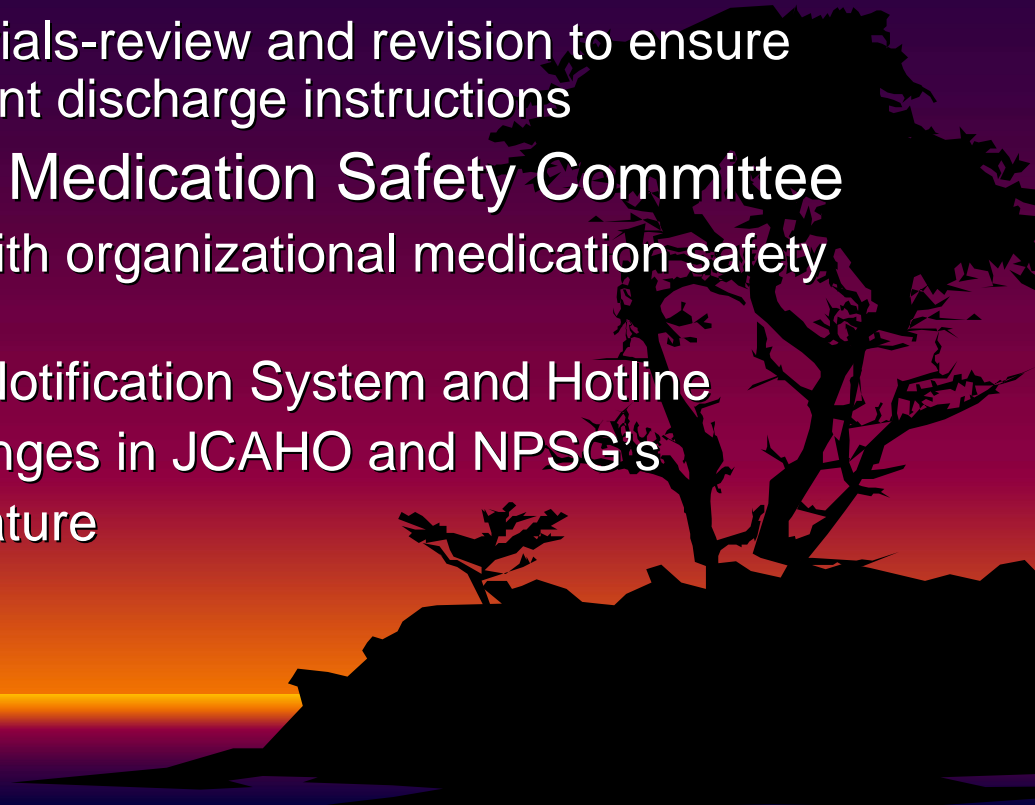
- Ongoing review of orders in ED CPOE system and intervention to prevent ADEs
- Drug information
- Inservices



# Distributive Priorities

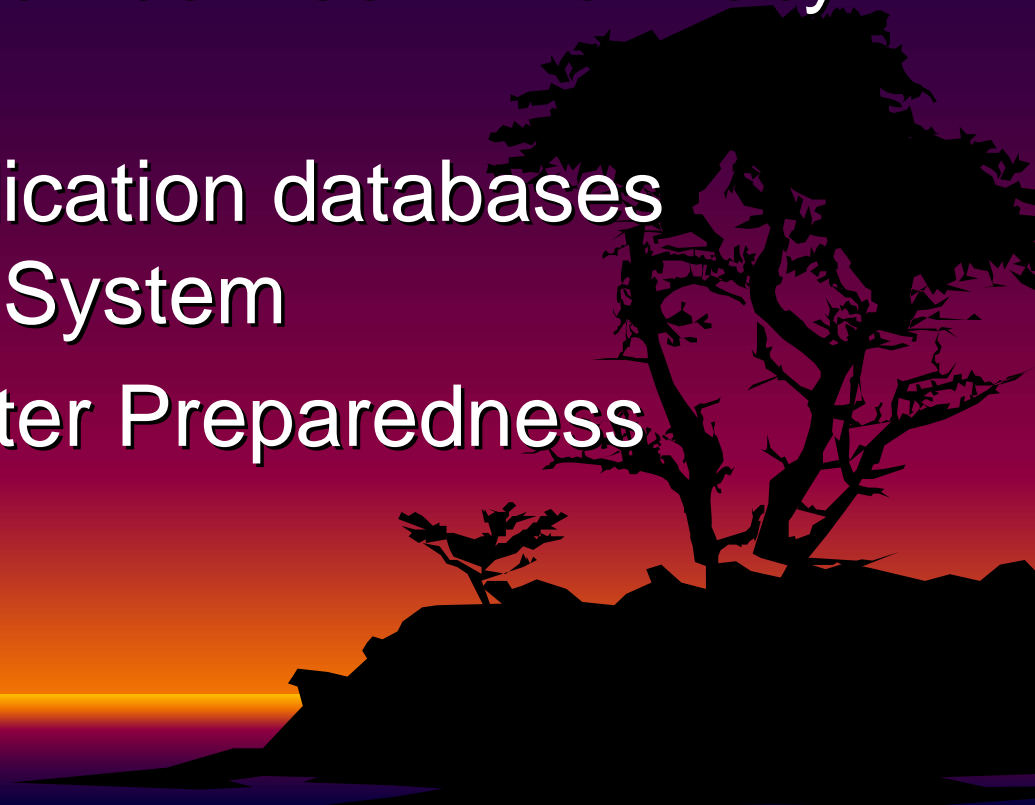
- Decentralized automation management
    - Optimizing use of decentralized automation
      - Evaluating drugs stocked vs pt care needs
    - Ensuring controlled medication accountability
    - Ensuring reconciliation of “John/Jane Does”
  - Dispensing/preparation of IVs
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# Administrative Responsibilities

- Developing resource materials
    - Critical Care Medication Guide
    - Pediatric dosing guidelines
    - Patient education materials-review and revision to ensure consistency with inpatient discharge instructions
  - Leadership role on ED Medication Safety Committee
    - Ensuring consistency with organizational medication safety initiatives
    - Review of ED reports: Notification System and Hotline
    - Keeping abreast of changes in JCAHO and NPSG's
    - Review of external literature
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# Administrative Responsibilities

- Ensuring regulatory compliance
- Serving as a liaison between Pharmacy and ED
- Oversight of medication databases within ED CPOE System
- Key role in Disaster Preparedness



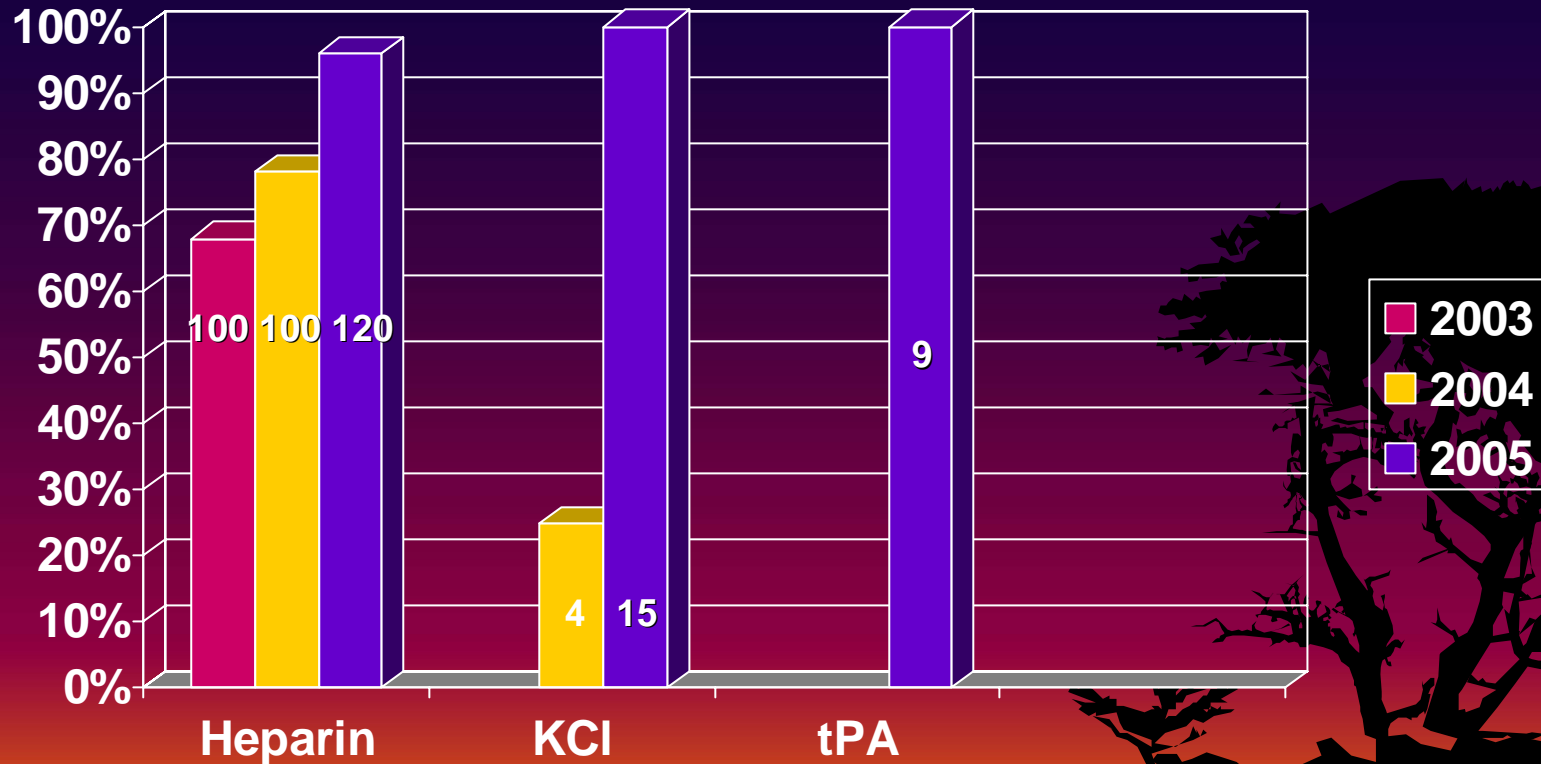
# Darwinian Approach to ED Services

## ↑Collaboration ↑Demand for Services

- Pharmacist collaboration with medical and nursing staffs resulted in increase demand for presence in the ED
- Request for 2<sup>nd</sup> position to provide 7 day coverage, 10 hr/day
  - Implemented in 2004
- Areas of Focus
  - Medication safety
  - Continuity of care for admitted patients
  - Target drug programs
  - Role of pharmacist in trauma care
  - Participation in core measures and quality initiatives



# Double Checking of High Alert Medications Prior to Administration



# Preventing Prescribing Errors

## Problem Identified

## Pharmacist Recommendation

## Outcome Avoided

Cefotaxime 1gm IVPB for empiric treatment of meningitis

Recommended 2gm IVPB

*Avoided subtherapeutic dose*

Heparin 6400 units IVP and 1400 units/hour ordered by ED resident for ACS

Recommended 5000 unit bolus and 1000 units/hr

*Avoided potential bleeding complications*

Hypertonic saline ordered based on PMD report of abnormal labs

Recommended waiting for ED to obtain BMP; results: Na=126; recommended DC of order.

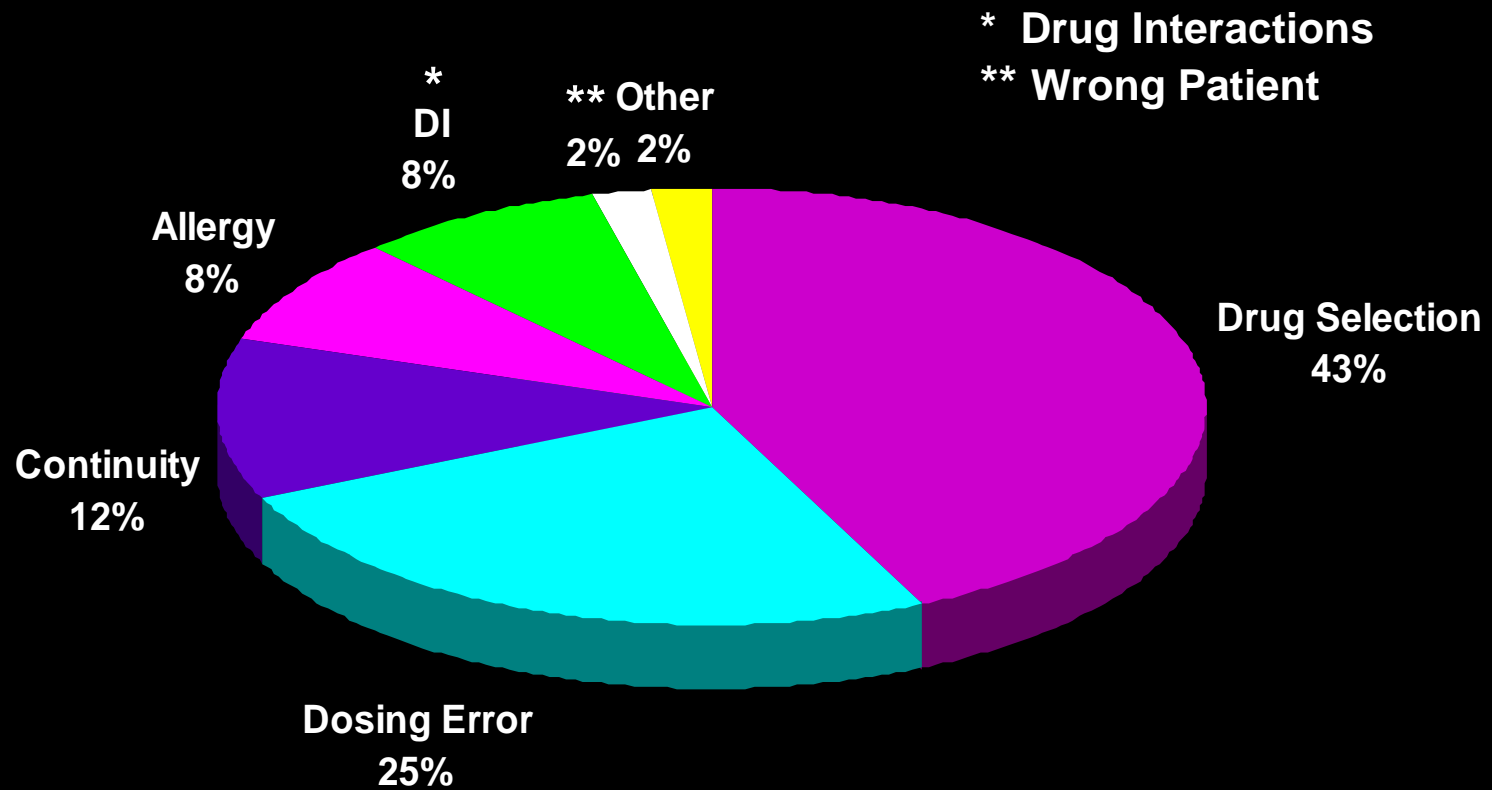
*Avoided potential hypernatremia*

Pt. with subarachnoid hemorrhage. Medication hx unknown; initial orders did not include baseline coags

Recommended lab order PT/PTT

*Avoided potential delay in appropriate management of coags.*

# Potential Adverse Drug Events Prevented via ED Pharmacist Intervention



June-October 2006, N=60



# Rapid Reversal of Coumadin Coagulopathy in Traumatic Intracranial Hemorrhage

Objective: To determine whether early use of Factor IX Complex (FIXC) is a safe, faster alternative to current therapy for the rapid reversal of coumadin anticoagulation in patients with traumatic intracranial hemorrhage (TIH).

- Retrospective chart review; patients with TIH treated with FIXC between 11/02 and 1/06 **N=28**
- Mean INR on admission: 5; after FIXC infusion, INR: 1.9 (p=0.008); remained low for 24 hours
- Of the 11 patients who had repeat INR drawn within 30 minutes after FIXC infusion, mean time to correction was 13.5 minutes.
- No early thrombotic events or allergic reactions.

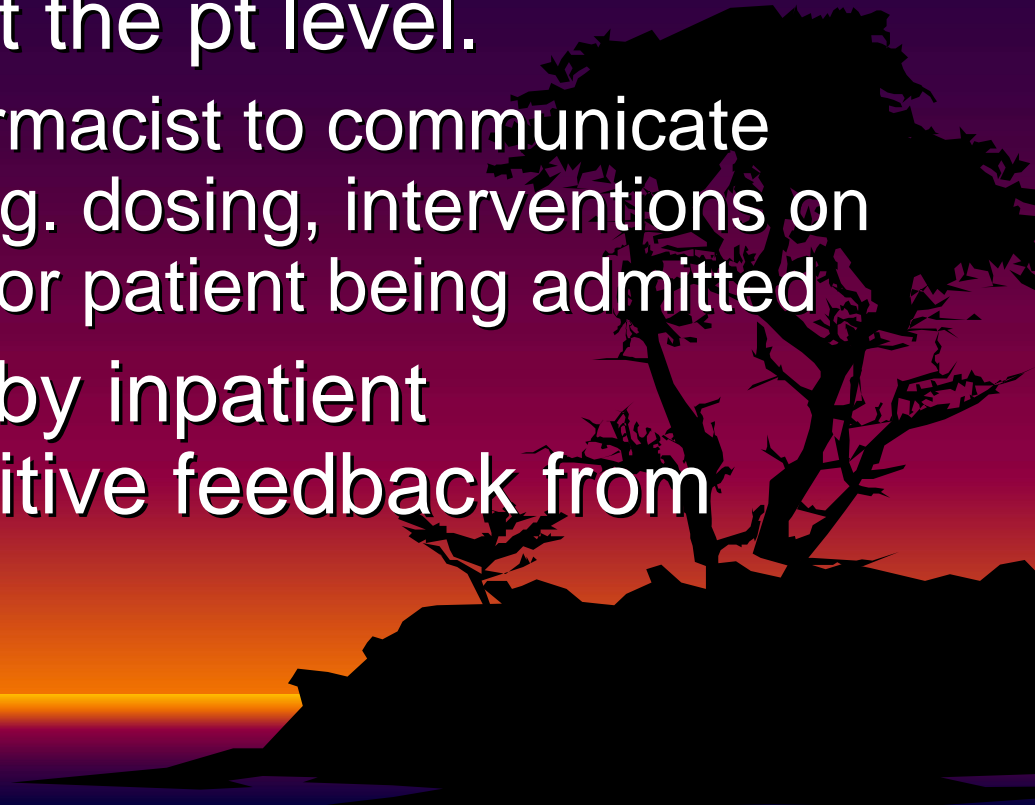
# CQI Smart Pump Utilization

	Continuous Infusion
# Infusions	59
Compliance with use of drug library	83% (49/59)
Reasons for not using library	3/10 cases drug not in library

- Data shared with nursing staff to reinforce use of the pump
- Request to add medications to the drug library



# Improving Handoff Communication ED to Floor

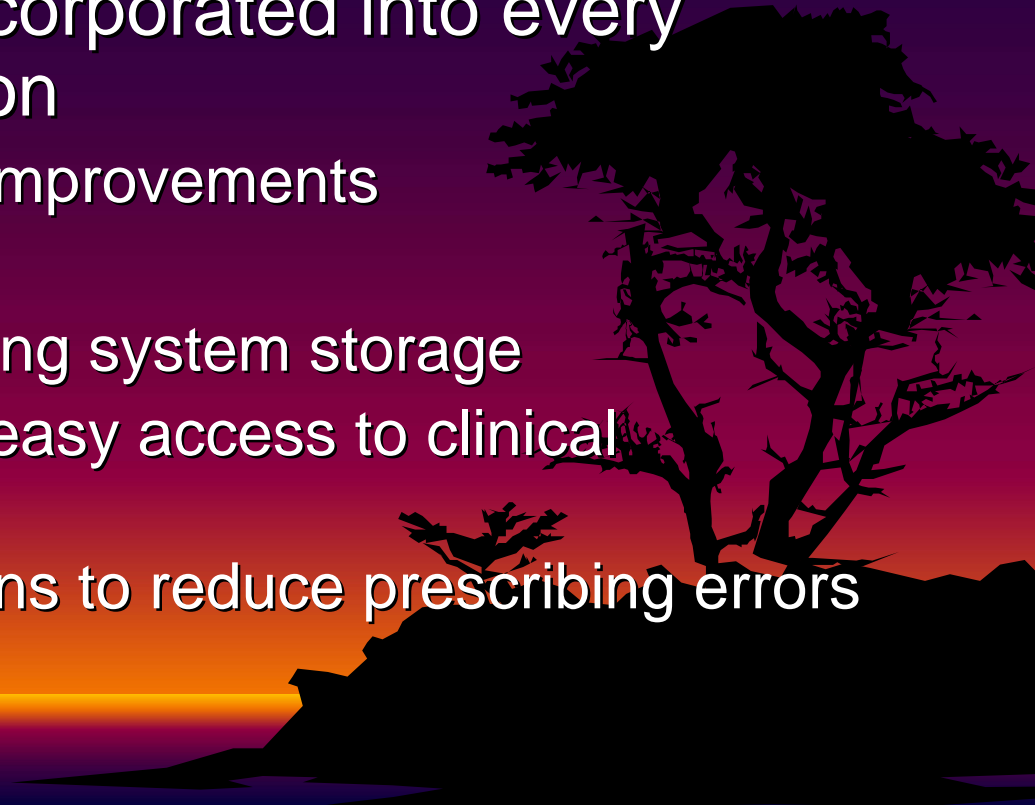
- Clinical data repository enhanced to enable pharmacist to pharmacist communication at the pt level.
    - Used by ED pharmacist to communicate clinical issues, e.g. dosing, interventions on restricted drugs for patient being admitted
  - Reduces rework by inpatient pharmacists; positive feedback from inpatient staff
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# A Positive Side Effect

- Patient in cath lab experienced a stroke
- Nurse caring for pt had transferred to cath lab from ED
- Called ED pharmacist for tPA resulting in timely administration of medication



# Ongoing Focus on Medication Safety

- Medication safety served as impetus for position
  - Safety principles incorporated into every aspect of the position
    - ED CPOE System Improvements
    - tPA checklist
    - Automated dispensing system storage
    - ED intranet site for easy access to clinical guidelines
    - Ongoing interventions to reduce prescribing errors
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# IOM Report on Emergency Care Implications for Pharmacy

- Lack of Disaster Preparedness
- Shortage of On-Call Specialists especially for trauma (neurosurgery)
- Shortcomings in Pediatric Emergency Care
- Overcrowding and need to improve patient flow

# Strategies for Success

- Organizational culture of collaboration
- Selection of pharmacists with the “right stuff”
  - Ownership
  - Initiative
  - Team-Focused
  - Emotional intelligence
  - Ability to balance needs of ED and Pharmacy

