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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

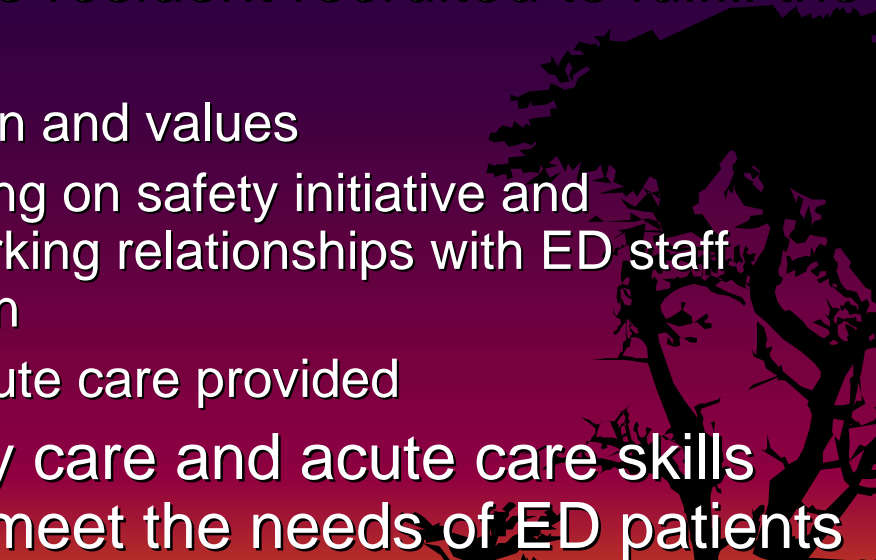
- IHI safety initiative in Emergency Department provided opportunity for pharmacist participation; primary care resident asked to participate
- Resident played instrumental role in collaborating with ED staff to focus on medication safety



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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- A silhouette of a tree is positioned on the right side of the slide, set against a background of a sunset or sunrise. 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 is visible. The tree's branches are dark and detailed, extending towards the top right corner.

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

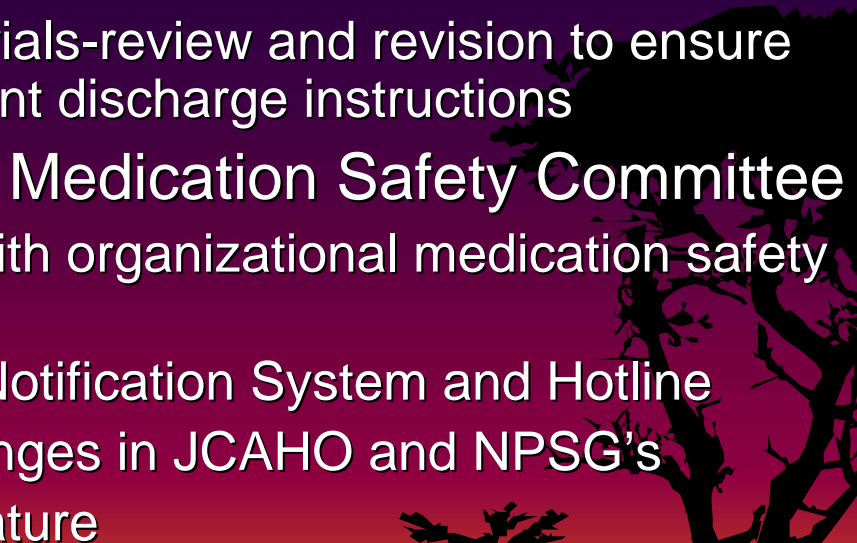
- Ongoing review of orders in ED CPOE system and intervention to prevent ADEs
- Drug information
- Inservices



Distributive Priorities

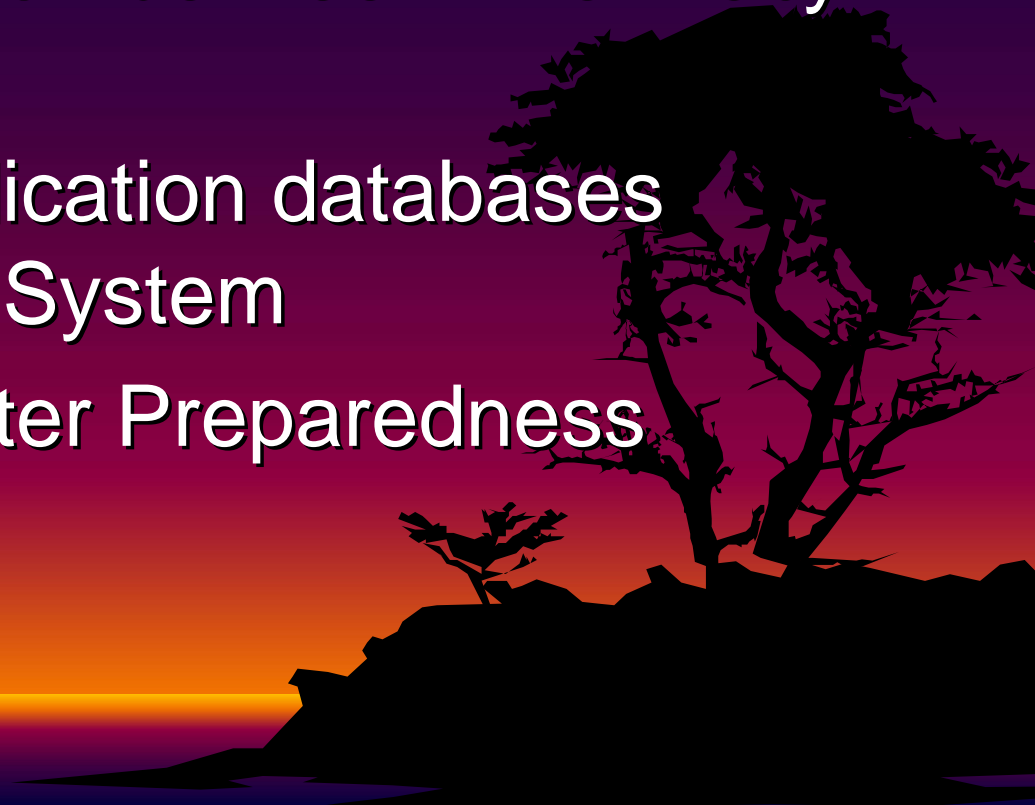
- Decentralized automation management
 - Optimizing use of decentralized automation
 - Evaluating drugs stocked vs pt care needs
 - Ensuring controlled medication accountability
 - Ensuring reconciliation of “John/Jane Does”
- Dispensing/preparation of IVs

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



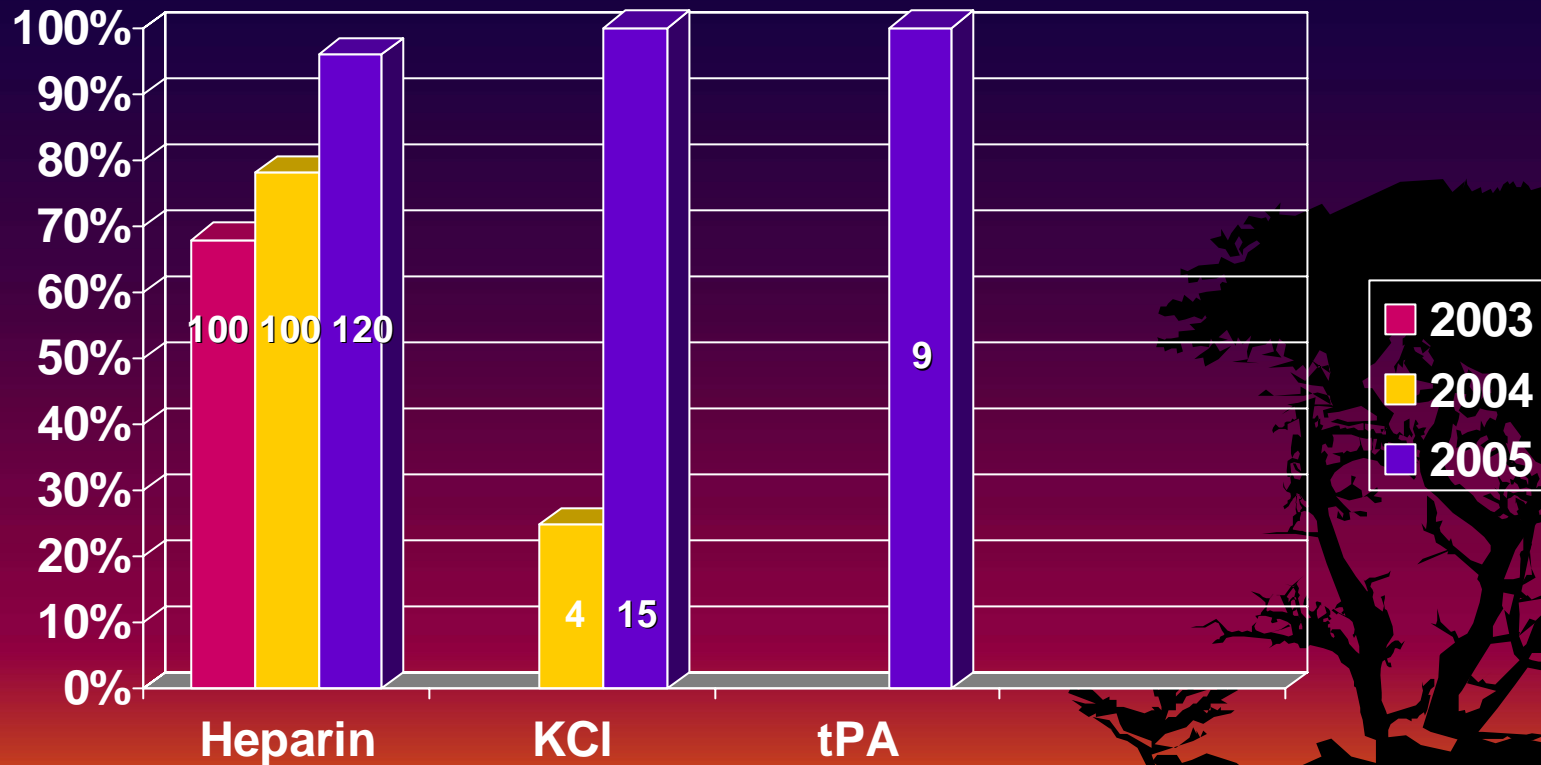
Darwinian Approach to ED Services

↑Collaboration ↑Demand for Services

- Pharmacist collaboration with medical and nursing staffs resulted in increase demand for presence in the ED
- Request for 2nd 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.

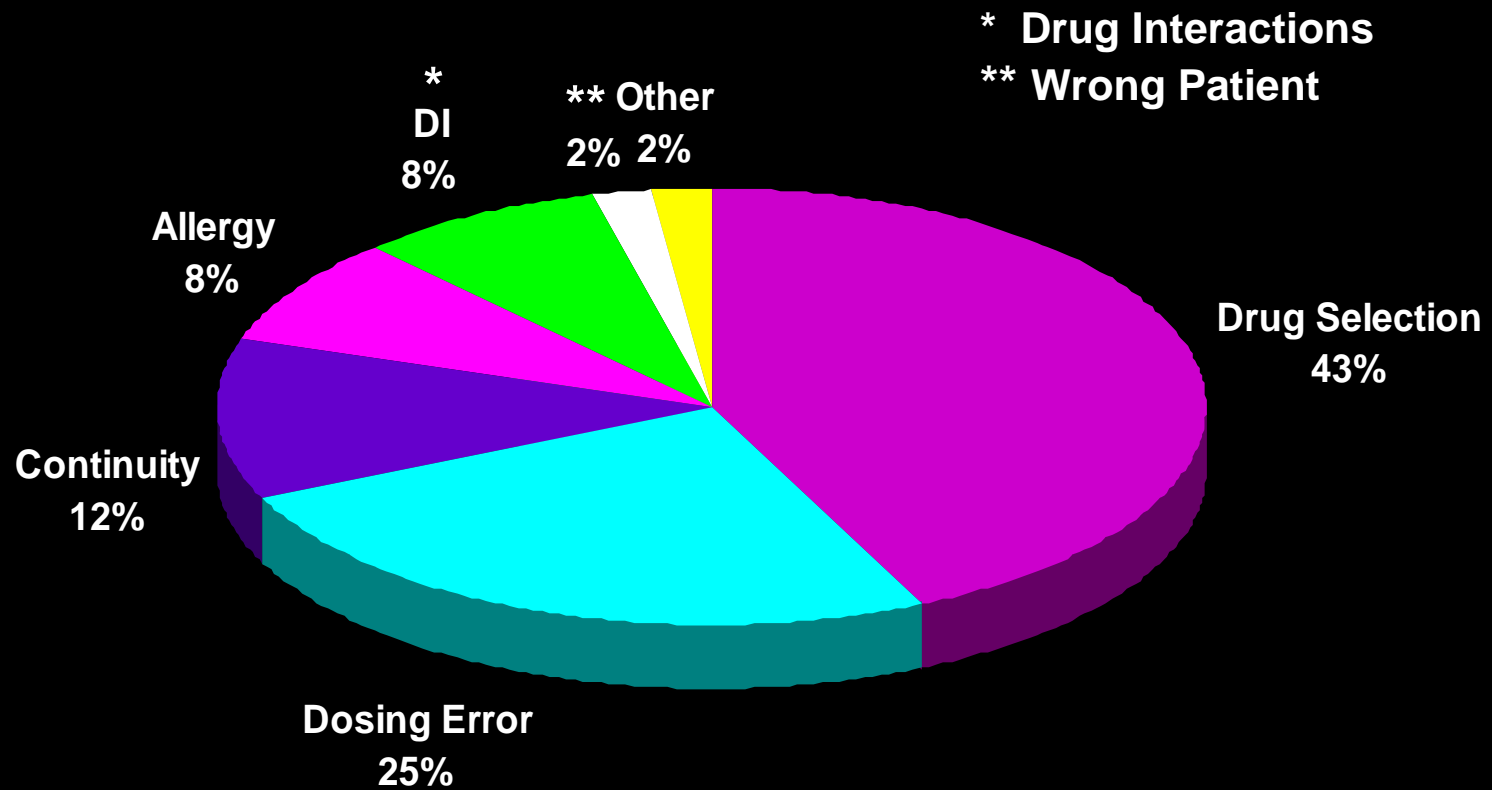
Avoided potential hypernatremia

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.

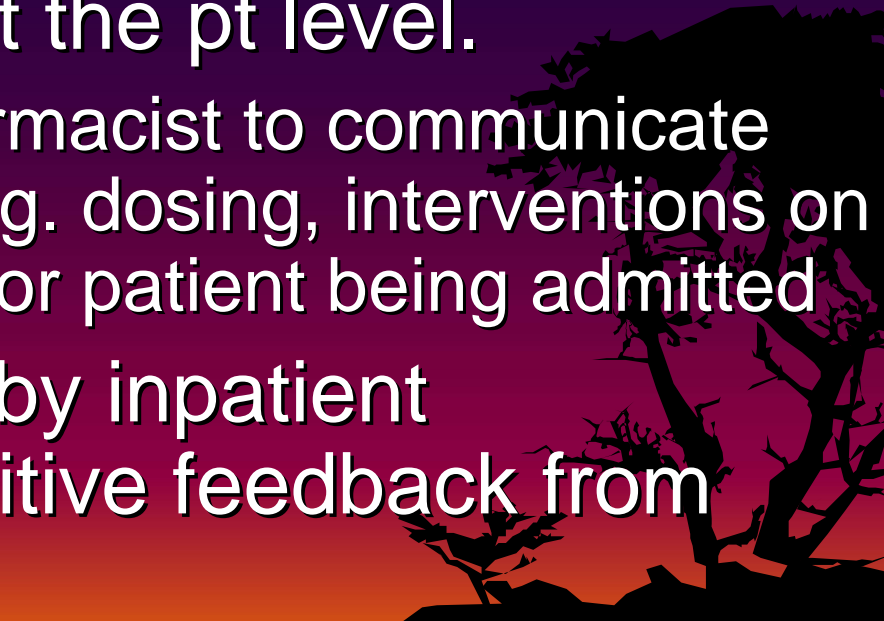
CQI Smart Pump Utilization

	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

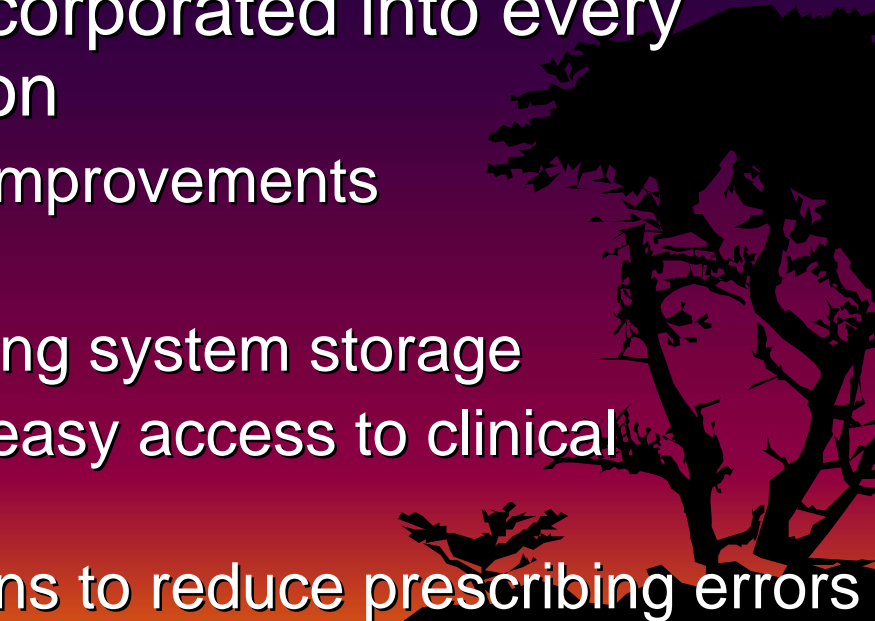
- Clinical data repository enhanced to enable pharmacist to pharmacist communication at the pt level.
 - Used by ED pharmacist to communicate clinical issues, e.g. dosing, interventions on restricted drugs for patient being admitted
 - Reduces rework by inpatient pharmacists; positive feedback from inpatient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

