

PREVENTING MEDICAL ERRORS

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Lecture Objectives

- Describe:
 - Root Cause Analysis
 - Common Medical Errors
 - Prevention Techniques
- Identify
 - 5 Most Common Misdiagnosed Conditions



George Santayana

- "Those who do not learn from history are doomed to repeat it."



Medical Errors



- 1 gram of Lidocaine IV push rather than 100mg
 - Patient cardiac arrests
- COVER UP
 - Syringe disposed before anyone can catch it
- Fear of employment reprisals and medical malpractice suits drives desire for secrecy

Medical Errors

- Fifth Leading Cause of Death in the U.S.
 - 98,000 deaths annually
 - Preventable Pharmaceutical Errors ALONE cause 7,000 deaths annually
 - \$2.4 Billion Estimated Annual Cost



Examples

- Misdiagnosis
- Medication Errors – Wrong Drug, Dose, Route, Time, and/or Patient
- Medication Interactions
- Wrong-Site Surgery
- Surgical Implements Left Inside Patient

750 Adams

- April 11, 1994 – Memphis, Tennessee
- Two firefighters killed in high-rise fire



Causes

- Numerous violations of standard operating procedure
 - Taking the elevator to the fire floor
 - Failure to use the Incident Command System
 - Operating a master stream with firefighters still working on the fire floor
 - Failure to activate personal alerting devices

Fire Chief

- Chief Charles E. Smith
- Rather than hide the mistakes that were made, Chief Smith publicized them
- Efforts to ensure that no other firefighters die in the future
- Great deal of internal and external pressure not to admit mistakes

Root Cause Analysis

- Reactive Method of Problem-Solving Aimed at Discovering and Correcting Underlying Problems
 - Specific
 - Measurable
 - Accountability
 - Reporting
 - Timeframes

General Root Cause Process

- Define the Problem
- Gather Evidence & Documentation
- Ask "WHY" Each Event Occurred
- Identify Which Causes, if Removed, Would Prevent Reoccurrence
- Identify Methods to Prevent those Causes
- Implement, Observe, and Repeat

What is a "Root" Cause?

- The action, deficiency or decision which, if corrected, eliminated or avoided, will eliminate the undesirable condition
- Normally we only look at the proximate cause and stop
 - The event that occurred immediately before the failure occurred
- Root causes enable proximate causes!



Important Steps

- Investigation – Freeze the Evidence
 - People, Positions, Paper, Parts
- Timeline
- Why Tree
- Look at Organizational Factors
 - Root causes are organizational!

Examples of Root Causes

- ASK “WHY” FIVE TIMES
- DELAY IN DIAGNOSIS
 - Why? No Appointment with Physician
 - Why? Abnormal Lab Results Did Not Trigger Quicker Appointment
 - Why? Reliance on Outside Lab to Flag Abnormal Results
 - Why? Internal Computer System not Capable of Triggering Internally
 - Why? Outdated Computer System

Swiss Cheese

- Mechanisms always in place to prevent failure – and they are always porous
- Sometimes the holes line up
- Goal is to eliminate as many holes as possible – and make the ones that exist as small as possible



Medication Errors

- Wrong Drug
- Wrong Dose
- Wrong Time
- Wrong Route
- Wrong Patient



Common Medication Errors

- Drug Name Confusion
- Medication Interactions
- Prescribing – Abbreviations, Handwriting
- Failure to Note Drug Allergies
 - PCN

HIGH ALERT MEDICATIONS

- Insulin
- Opiates / Narcotics
- Injectable Potassium Chloride
- IV Anticoagulants
- Hypertonic Saline



Medication Recommendations

- Avoid Verbal Orders
- Monitoring of Long-Term Meds
 - Especially anticoagulants
- Avoid Abbreviations
- Proper Documentation
- Information Technology
- Inter-Physician Communication
 - Polypharmacy issues

Five Most Common Misdiagnosed Conditions

- Cancer
- Cardiac Events
- Acute Abdomen
- Timely Diagnosis of Surgical Complications
- Stroke and Related Cranial Conditions

Cancer

- Breast and Pancreatic Cancers Most Common
- Misinterpretation of Diagnostic Imaging
- Misinterpretation of Presenting Symptoms
- Failure to Monitor and Follow Up

Cardiac Events

- Misdiagnosis – Attribution to Other Causes
 - GI or musculoskeletal, anxiety
- Delay in Ordering Evaluative Studies
- Failure to Communicate with Patients
- MUST Adhere to Accepted Clinical Guidelines

Acute Abdomen

- NUMEROUS Etiologies
- Cause Determination Issues
 - Bias
 - Haste
 - Poor history
 - Inadequate examination

Timely Diagnosis of Surgical Complications

- Examples
 - Perforation
 - Suture Failure
 - Infection
 - Bleeding
- Evaluate Prior to Discharge
- Recheck Labs and Diagnostic Studies
- Document Appropriately
- Communicate Effectively

Stroke and Cranial Complications

- Identification – Stick to Accepted Standards
- Communicate with Patients
- Document Anticoagulant Therapy
- Written Procedures for Monitoring and Anticoagulant Therapy

Error Prevention

- Written Policies
- Documentation
- Red Flags
- Human-Factors Engineering
- Information Technology
- Teamwork

Written Policies

- Surgical Universal Protocol & Instrument Counts
- Inter-Physician Communication
 - Internal and external
- Testing Follow Up
- Medication Issues
- www.guideline.gov



Documentation

- Legible
- Complete
- Available
- ELECTRONIC MEDICAL RECORDS



Red Flags

- NEAR MISSES
 - Staff better attuned than management
- Fatigue
- Tunnel Vision
- Anger / Refusal to Listen to Peers

Human-Factors Engineering

- Medication Packaging & Availability
 - Standardization
- Color-Coding / Bar-Coding
- Shift Management – Fatigue Prevention



Information Technology

- Improved Documentation
 - Legibility, completeness, availability
- Improved Prescribing
 - Legibility, abbreviations, interactions
- Improved Communication

Teamwork

- United Flight 173
 - December 28, 1978
 - No “green” landing gear light
 - Plane ran out of fuel and crashed while the crew tried to diagnose the problem
 - Captain ignored crew members’ warnings!

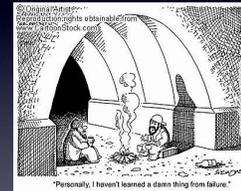


Crew Resource Management

- Aviation Concepts Applied to Medicine
 - Anesthesia, emergency, neonatal
- Key Components
 - Team responsibility
 - Belief in clinician fallibility
 - Peer monitoring
 - Enhanced communication

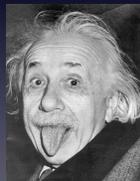
Cultural Issues

- Hiding Errors vs. Embracing Them
 - Learning from our mistakes
- Malpractice Concerns
 - Remember unhappy patients sue
 - “Sorry Works”



Albert Einstein

- “Insanity: Doing the Same Thing Over and Over Again and Expecting Different Results.”



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