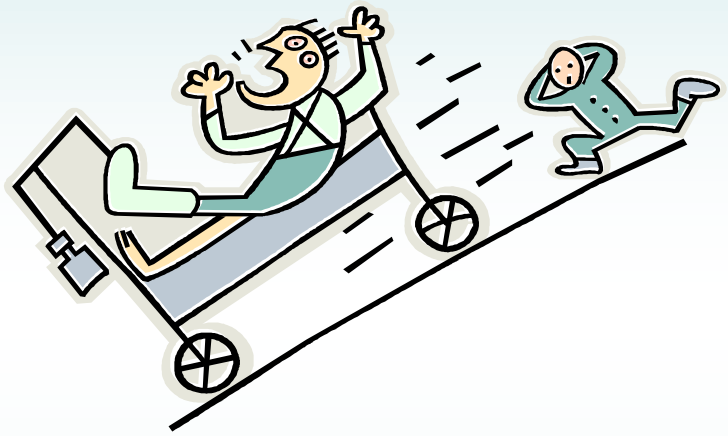
An Update on Medical Errors and Patient Safety Initiatives



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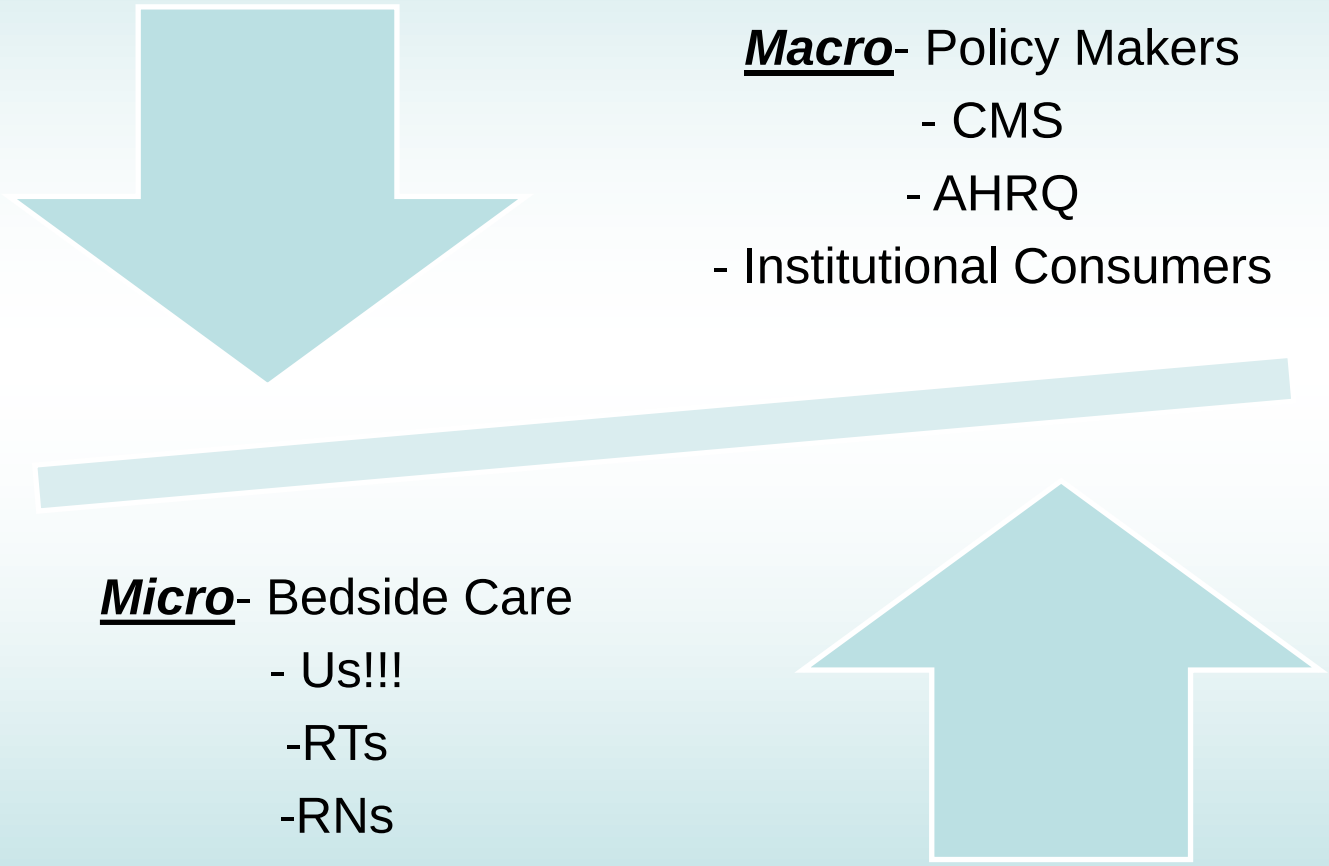
Topics & Objectives

- Impetus for Reducing Medical Errors
- Organizations Committed to Improvement
- Common Causes of Medical Errors
- Improvement Initiatives
- Tools for Optimzing Patient Safety
  - Root Cause Analyses
  - Protocols
- Additional Resources

From Macro to Micro Perspective



Macro- Policy Makers

- CMS
- AHRQ
- Institutional Consumers

Micro- Bedside Care

- Us!!!
- RTs
- RNs

Impetus for Improvement

- Multiple reports questioning healthcare safety
- Governmental concerns/regulations
- Demands of 3rd party payers (including CMS)
  - CMS Value-Based Purchasing
- Increased focus on patient welfare/ethics
- Increased competition among providers
  - ‘Score-carding’
  - Increased consumer sophistication

Quality/Safety Issues

- Only ~50% of adults receive recommended care
- 6-15 million injuries/yr due to adverse events
  - About 14% of Medicare patients harmed during care*
  - Each year, more than 80,000 central line infections occur, resulting in about 28,000 deaths
  - On average 40 surgeries (still!) are performed on the wrong patient or on the wrong site every week
- 70-190K deaths/yr due to preventable errors
- Social cost of all inpatient adverse medical events between $350-900 billion*
- At least 1 in 4 adverse events is preventable

Committed to Improvement

- Public/Governmental Agencies
  - HHS, CMS, FDA, AHRQ
- Private/Nongovernmental Organizations
  - The Joint Commission
  - Provider Organizations, e.g. hospitals
  - Institute of Medicine
  - Institute for Health Care Improvement
  - Leapfrog Group
- Combined Efforts
  - Partnership for Patients

Ideally: A Collaborative Effort

Public:

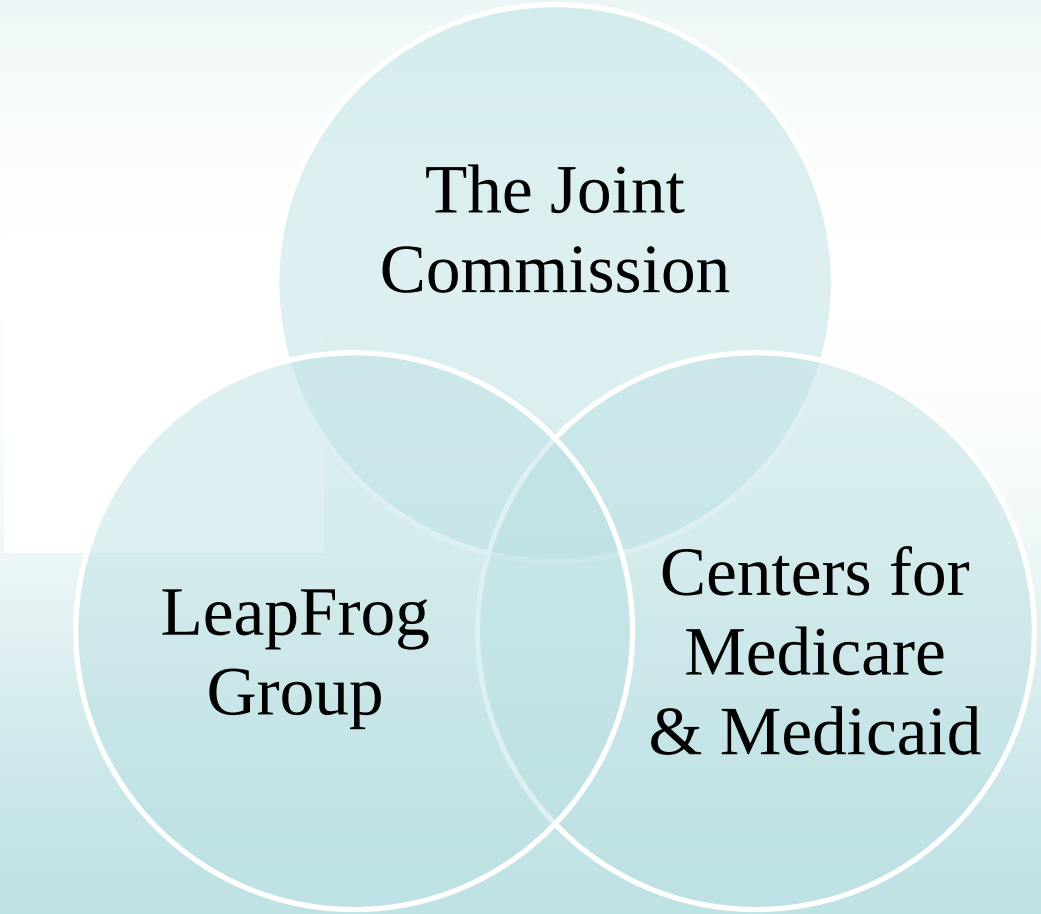
CMS, FDA, AHRQ

Private:

The Joint Comm., "Leapfrog"

Enhanced "Bedside" Care

Reality: A Variety of Input from Several Related & Unrelated Organizations



Food & Drug Administration

- Safety & efficacy of drugs and devices
- Multi-phase approval process
- Recent issues:
  - Warnings on naming and labeling of medications, e.g., unit dose medications.
  - Approval of Covid 19 Vaccines (e.g., Pfizer, Moderna, J & J, Others)

Agency for Healthcare Research & Quality (AHRQ)

- Promote Quality in Healthcare Through
  - Direct and Indirect Support of:
    - Outcomes Research
    - Evidence-Based Medicine & Best Practices
  - Patient Safety Network (Informational)
    - Consumer & Patient Guidelines/Fact Sheets, e.g., *Five Steps to Safer Healthcare*
    - Recommendations for Professionals, e.g., Patient Safety Primers, Adverse/'Never' Events

Institute of Medicine (IOM)

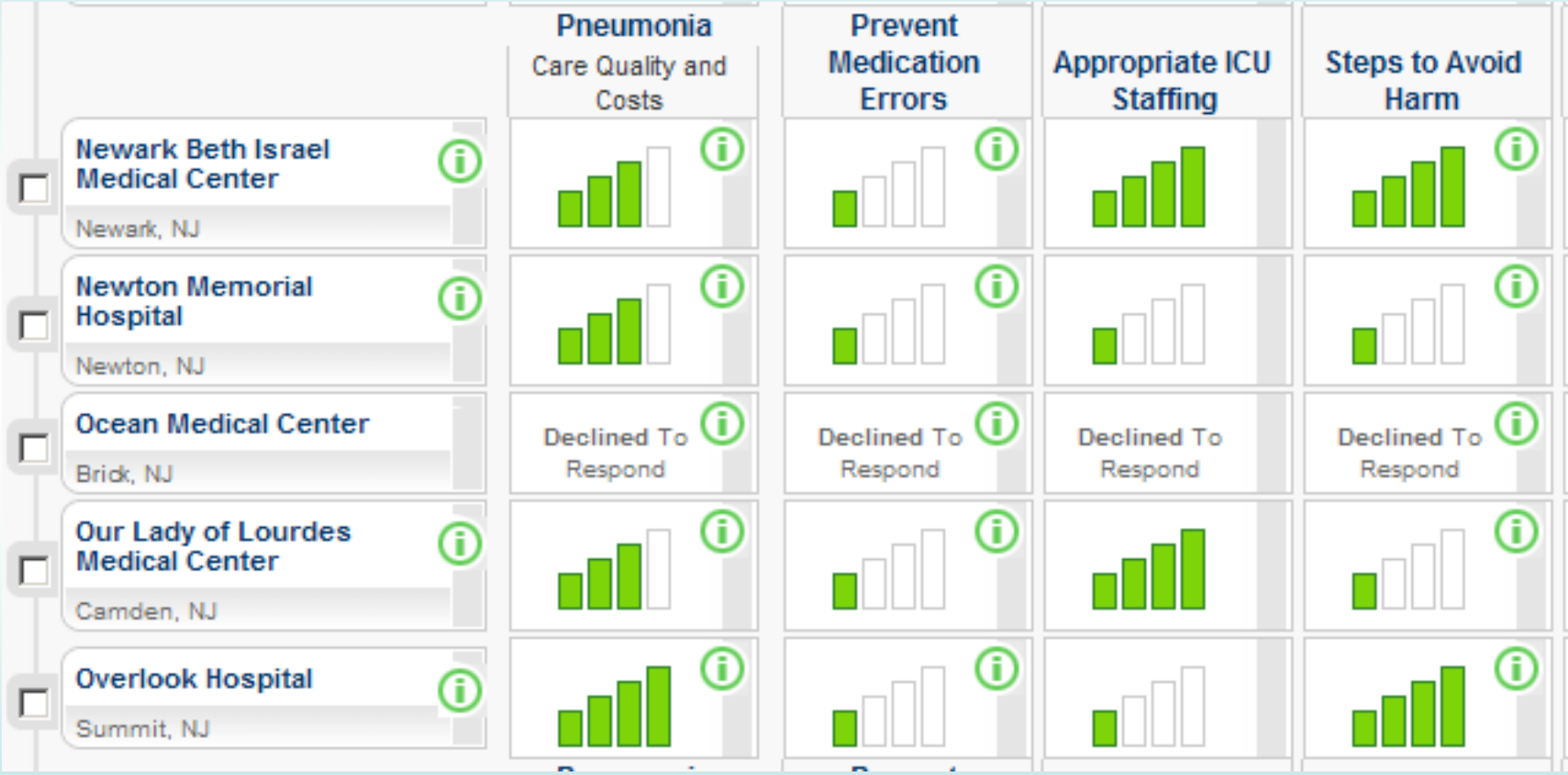
- Phase I: Identify Problems
  - *1996: America's Health in Transition: Protecting and Improving Quality*
- Phase II: Devise Improvement Plan
  - 1999: *To Err is Human: Building a Safer Health System*
- Phase III: Operationalize the Plan
  - 2001: *Crossing the Quality Chasm*
  - 2003: *Reforming Health Professions Education*
  - 2008: *Knowing What Works in Health Care: A Roadmap for the Nation*
  - 2015: *The Learning Healthcare System*
  - 2017: *Patient Safety & Health Info Technology*

- Consortium of 150+ Organizations
  - Represents 34 Million Americans
  - Funded by the Robert Wood Johnson Foundation and Leapfrog Members
- Mission: Recognize/Reward ***Safety***, ***Quality*** and ***Value*** in Health Care
  - Support Informed Decisions: e.g., EBM
  - Promote High-Value Through Incentives

Leapfrog Recommendations

- Computerization of Order Entry
  - Immediately Verify Dose/Frequency/Interactions
- Evidence-Based Hospital Referral
  - Refer Patient to Hospitals with Best Outcomes
- ICU Staffing: “Intensive-ist”-Staffed ICUs
- National Quality Forum Safe Practices
  - Create a Culture of Safety
  - Match Needs to Provider Capabilities
  - Improve the Transfer of Information
  - Safe Medication Use

Leapfrog Patient Safety Ratings



The Joint Commission

- Accredits > 90% US healthcare organizations
- Quality Enhancement Initiatives
  - Survey Standards (over 1/2 target patient safety)
  - Sentinel Event Policy (targeting “Unexpected occurrence involving death or serious injury…”
    - Reporting is Encouraged
    - Root Cause Analysis
    - Improvement Plan Implementation
- Patient Safety Goals &Tracers for Surveys

Joint Commission Safety Goals

- Communication
  - Reading back verbal orders
  - “Do not use” abbreviations
  - Reporting critical test results
  - Hand-off communication (SBAR)
  - Transfer/discharge reconciliation
- Bedside Care
  - Two patient identifiers
  - Recognizing/responding to patient’s condition
  - Preventing falls
  - Universal protocol (pre-procedure time-out/verification)
  - Patient involvement as a safety strategy

Joint Commission Safety Goals

- Drug-related
  - Standardized drug concentrations
  - Look-alike, sound-alike drugs
  - Labeling medications & solutions
  - Medication reconciliation
- Alarms
  - Maintain & test alarm systems
  - Alarms set properly & audible
- Infection Control
  - CDC hand hygiene guidelines
  - Health-care associated infection

Error-Prone Areas – Sentential Event Program

- According to TJC-Sentinel Event: "…*an unexpected occurrence involving death or serious …injury*"
- Examples (in order of frequency reported)
  - Unintended Retention of Foreign Body-Postop
  - Delay in Treatment - ER wait time
  - Wrong Patient, Site and/or Procedure
  - Suicide
  - Post-op Complication

Add'l Error Prone Areas

- Medication Error- Wrong, Late
- Falls –
  - Bedrail left down
  - Sedation vacation
- VAP/VAE
- Iatrogenic Sores, ulcers or wounds
  - Bedsores
  - Respiratory-Related Sores
    - Facial sores from Masks
- Airway Problems- Esophageal intubation
- Cross Contamination-Covid?

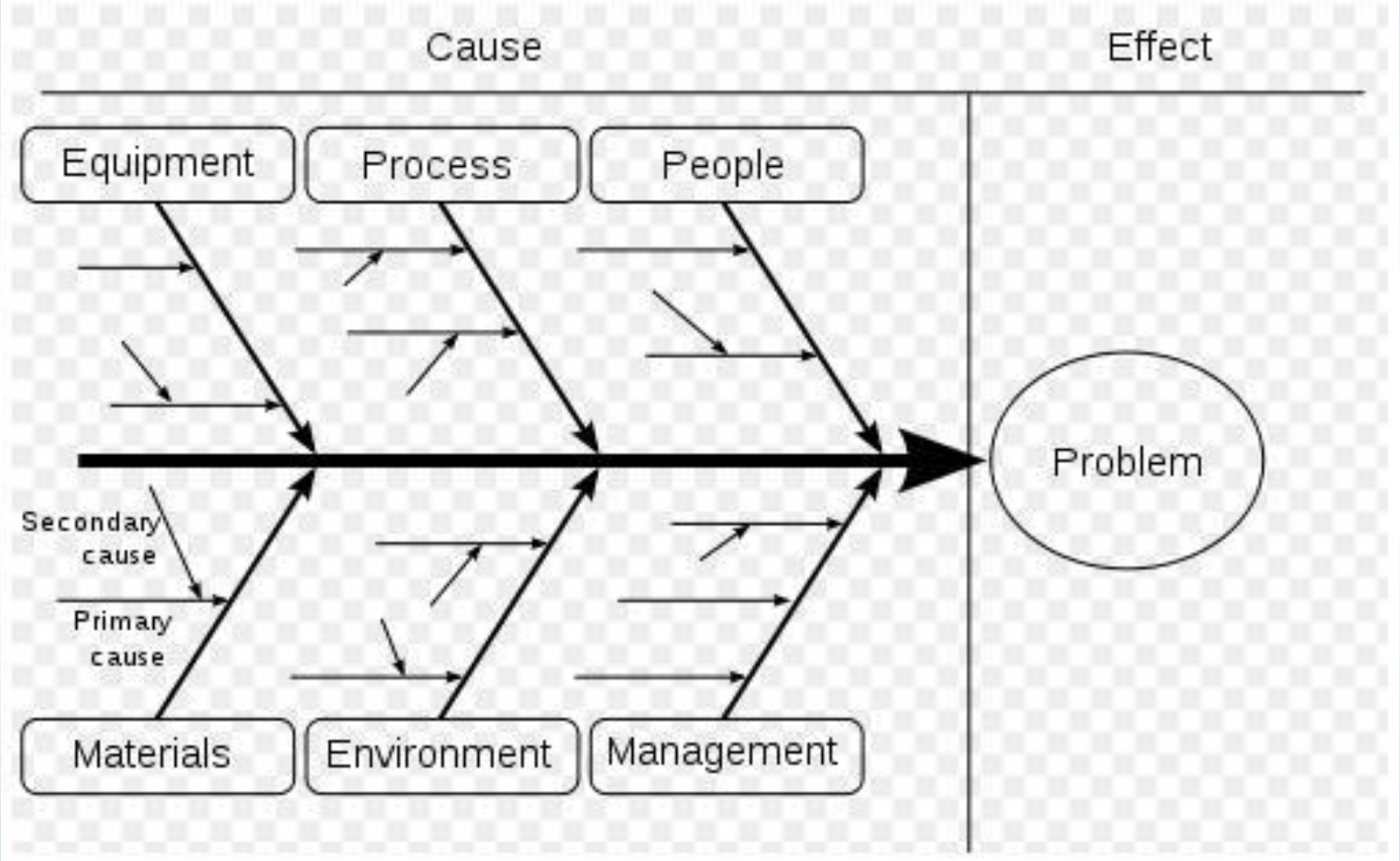
Skin Sore Example

- Why focus on this?
- Highly Preventable!
- Common!
- Can lead to other comorbidities - Sepsis
- Often unreimbursed

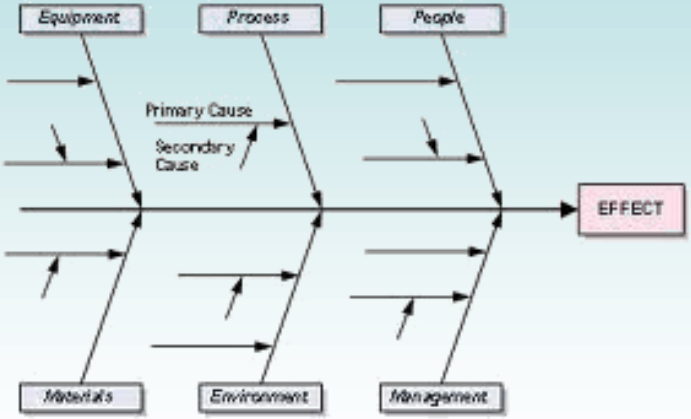
Skin Sore Stages

- **Stage 1 -** The skin is unbroken, but shows discoloration.
- **Stage 2 -** The skin is open and shows signs of some tissue death. The ulcer is shallow or not too deep.
- **Stage 3 -** Much deeper within the skin's tissue and has the appearance of a crater. A pus-like substance may be present.
- **Stage 4 -** Affects multiples layers of tissue, including muscle and bone. A dark substance called eschar may be present. **Unstageable-** The ulcer may have a yellow, brown, or green scab covering it. The damage to the tissue layers is extensive and requires removal.

Root Cause Analysis (RCA)

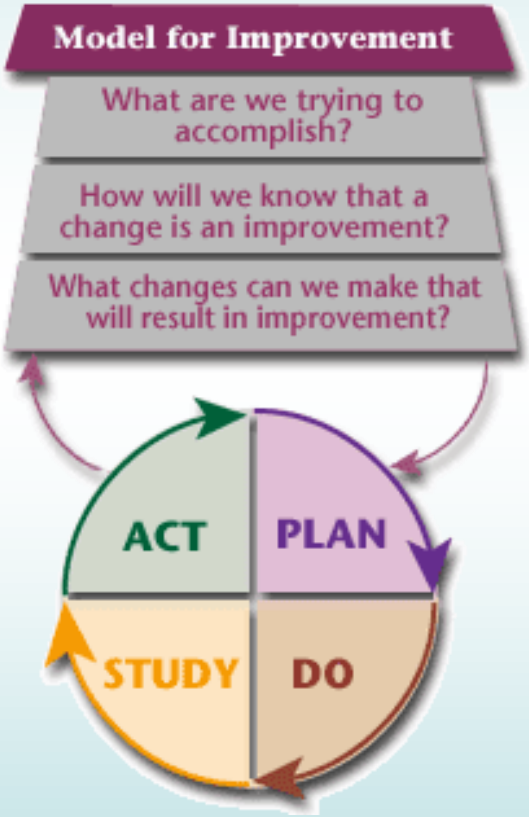


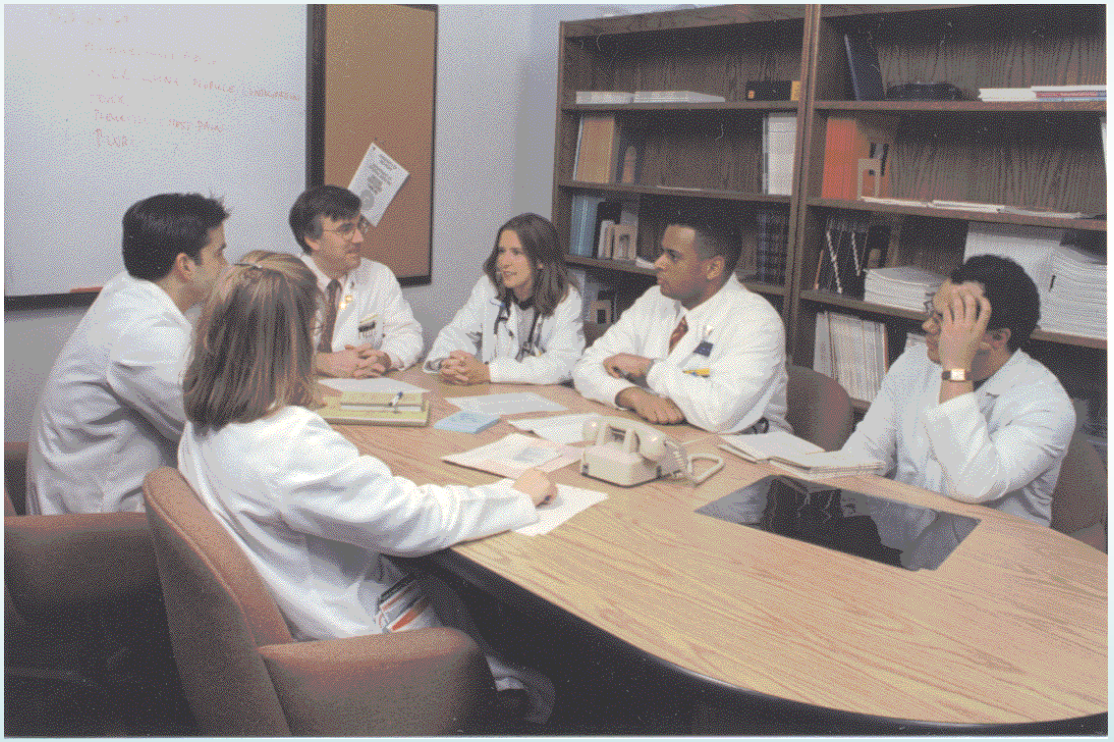
Pressure Sores



- Issue Identification typically done using ‘fish bone’ diagrams
- Root Cause =
  - Staff not aware of risks or consequences
  - Staff not aware of mask alternatives
- Action plan
  - Consult with Wound Care Team
  - Contact with Equipment Manufacturers
  - Research Best Practices
  - Establish Protocols and Procedures
  - Educate & Reinforce
  - Revise and Monitor as Needed

Micro Level: Cases in Quality Improvement at the Bedside





Case 1: The VAP/VAE Bundle

- ***Event***: Increase in VAP/VAE
- ***Debrief:***
  - Correlated factors (e.g., manipulating vent circuit, micro-aspiration, ETT biofilm, etc)
  - Increased LOS, morbidity and mortality
  - No reimbursement for VAP-associated $$
- ***Action Plan:*** Evidence-Based Protocols
  - ↑HOB, mouth care, subglottic suction, etc.
- ***Desired Outcome:*** VAP rates reduced

Case 2: Confusion re: Unit Doses

- ***Event***: patient with albuterol allergy given the drug -> anaphylactic reaction
- ***Debrief:***
  - Individual factors: Human error
  - System factors: Mix up of unpackaged unit-dose bronchodilators (e.g., unit dose of both Albuterol and Atrovent)
- ***Action Plan:*** evidence based protocols
  - Unit dose “packaging”
  - Barcode scanning & medication profiling

Case 3: Tubing Connection Mix-Up 1

- ***Event***: Resident connects O2 tubing to an NG tube; quickly recognized (no harm)
- ***Debrief:***
  - Individual factors: Human error
  - System factors:
    - Training of clinician
    - Connector compatibility?!?!
- ***Action Plan:*** Intensive re-training & review of resident physician training protocols

Case 4: Tubing Connection Mix-Up 2

- ***Event***: O2 tubing connected to an IV causing massive gas emboli and death
- ***Debrief:***
  - Individual factors: Human error
  - System factors:
    - Connectors should not have been compatible
    - Inadequate training of physician-resident
- ***Action Plan:***
  - Equipment (connector) switch
  - Intensive re-training & review of training protocols

Case 5: Click-Stop O2 Regulator

- ***Event***: ED physician set the control knob to between 1 and 2 L/min, not aware that the numbers represented a discrete rather than continuous setting (no O2 flow)
- ***Debrief:***
  - Individual factors: Equipment design flaw
  - System factors:
    - Equipment procurement decision
    - Failure to heed package warning
    - Inadequate training of users
- ***Action Plan:***
  - Interim notification of all potential users
  - Acquire/train on different equipment

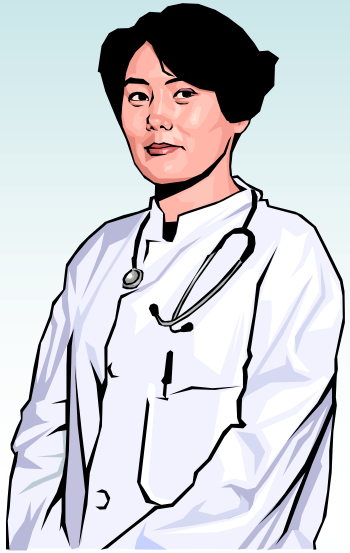
Case 6: Ventilator Failure

- ***Event***: Pneumatically-powered electrically controlled ventilator set-up but not connected to AC outlet. Stops operating after battery drains; patient suffers arrest cerebral hypoxia.
- ***Debrief:***
  - Individual factors: Human error
  - System factors:
    - Inadequate vent warning system
    - Lack of set-up checklist
- ***Action Plan:***
  - Interim notification of all potential users
  - Create/monitor setup checklist

Quality Improvement Strategies

- RN/Therapist/patient driven protocols
- Evidence-based guidelines (AARC CPGs)
- Medication Control – Pyxis & profiling
- BiPAP mask protocols
- Staffing resources (#s and education)
- Standardized equipment (e.g., ventilators)
- Interdisciplinary rounds/communication
- *Mgt by walking around (MBWA)*

Challenges in Error Reduction



- Individual Issues
  - Professionalism vs. occupationalism
  - Clinical competency
  - Personal ethics
- System or Organizational Issues
  - Healthcare is a business
  - Competency (rather than training) protocols
  - Adequacy of staffing (for care + documentation!)
  - Management understanding of “bedside issues”
  - Excessive/redundant documentation
  - Concerns with outcomes measures

Follow-Up Online Resources

- VA National Center for Patient Safety
  www.patientsafety.gov/
- AHRQ Patient Safety Network
  http://www.psnet.ahrq.gov/
- Institute for Healthcare Improvement
  http://www.ihi.org/IHI/Topics/PatientSafety/
- Joint Commission – Patient Safety
  http://www.jointcommission.org/topics/patient_safety.aspx
- National Patient Safety Foundation
  http://www.npsf.org/
- Leapfrog Group
  http://www.leapfroggroup.org/home
- National Quality Forum
  http://www.qualityforum.org/Home.aspx