Errors in Clinical Care

SAEM Ethics Committee
Teaching Module for Clinical Ethics

Overview

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- **Case examples**

- **Curriculum**
  - **Areas of ethical agreement**
  - **Challenges and approaches**
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Introduction: What is Error?

- **Definition[1]**
  - **Failure of a planned action to be completed or the use of a wrong plan to achieve an aim**

- **Does not imply fault**

- **Focus is on perfecting the system to optimize performance**

Introduction: What is Error?

- **Who defines a clinical error and determines its significance?**

- **Possibilities**
  - **Resident MD**
  - **Supervisory MD**
  - **Post Hoc – peer review**
  - **RNs or other HCWs**
  - **Jury**

- **Outcome of error: Benign → loss of life**

Introduction: What is Error?

- **What is the ethical responsibility for disclosing an error?**

  - Should clinically insignificant errors be reported?

  - Who should monitor error reporting?

Errors Occur – What to Do?

- **If it is unrealistic to "make" the practice of medicine error free, do health care workers have an ethical responsibility to set expectations for patients?**

  - **Provide disclosures for potential errors, similar to method of informing patients of known procedural complications?**

  - **Consider some errors which will occur (despite attempts to prevent) and others that should never occur ("never events")?**

Case Example #1

- **80 yo woman with history of dementia falls at a nursing home and sustains a displaced distal radius fracture. En route EMS providers administer morphine. She is given additional morphine and midazolam for reduction in the ED. Post procedure, the patient has a respiratory arrest requiring intubation.**

- **Subsequent chart review reveals an "allergy" to morphine.**

Case Example #2

- **40 yo male without medical history presents with chest pressure. His ECG shows nonspecific T wave abnormalities and his discomfort is relieved by a "GI cocktail". His troponin is normal. He is discharged with a diagnosis of gastroesophageal reflux disease (GERD).**

- **He returns to the ED 6 hours later with an ST-segment elevation myocardial infarction.**

Case Example #3

- **45 yo man sustains 60% total body surface area burn. He is intubated and a subclavian central line is inserted, without CXR confirmation. Over the next few hours, he becomes hypotensive, difficult to ventilate and hypoxic. The intern attributes decreased pulmonary compliance to the man's burns. IV fluids and vasopressors are administered. The q AM CXR, ordered for ICU rounds, reveals a large tension pneumothorax.**

Ethical Agreement

- **Institute of Medicine report[1] – Sept 1999**

  - **Est 44,000-98,000 lives lost/year to preventable medical error**

  - **Est total related costs $17-29 billion**

  - **Outline of national strategy to reduce preventable medical error**

  - **Report raised awareness of prevalence of medical error**

Ethical Agreement

- **Errors occur in every emergency department**

- **Harvard Medical Practice Study**[2]

  - **Review of 30,121 randomly selected patient charts from 51 New York hospitals in 1984**

  - **Adverse events resulting in disability occurred in 3.7% of hospitalizations**

Ethical Agreement

- **Harvard Medical Practice Study**[3]
  - **Only 3% of these events occurred in EDs**
    - **Of these, 70% were related to negligence**
    - **25% led to serious disability; types of errors**
      - **Misdiagnosis**
      - **Errors in performance**
      - **Failure to take preventative measures**
      - **Drug treatment**

Ethical Agreement

- **An average emergency physician makes thousands of decisions every 8-hr clinical shift**

  - **If estimated error rate[4] for clinical decision making is 1:100-1:1,000, then 5-50 errors are made during an average shift (5,000 decisions)**

Ethical Agreement

- **Reasons for medical error**
  - **Complexity and acuity of patient encounters**
  - **Lack of complete patient information**
  - **Non-uniformity in standardization of care**
  - **Inadequate resident supervision**
  - **Culture of medicine**
    - **Myth of physician infallibility**
    - **Reluctance to discuss errors**
    - **Punitive approach to error discourages reporting and correction of system issues**

Ethical Agreement

- **ED specific factors that may increase error**
  - **Time constraints**
  - **High acuity and complexity of patients with lack of complete patient information**
  - **Staff factors**
    - **Understaffing**
    - **Fatigue/circadian disruption of night practice or frequent shift changes**
    - **Communication breakdown, knowledge gaps**

Challenges and Approaches
Definitions of Error

- **Labeling errors are often observer dependent**
  - **Is diagnosis as part of a process of "differential" elimination valid?**
  - **Is treatment failure and "necessary" evolution of therapy an error?**
  - **Physicians may differ from patients and families in what they recognize as an "error"**
  - **Specialists may differ from generalists, with different levels of expertise and varying goals of clinical care**

Challenges and Approaches
Barriers to Error Disclosure

- **Threat of litigation**

- **Culture of individual responsibility vs. systematic failure**

- **Lack of formalized pathway for communication or error feedback structure**

- **Loss of provider reputation/status**

Challenges and Approaches
Traditional Approaches

- **Incident reports**
  - **For reporting, investigation, and reprimand**

- **Extra training/education for providers**
  - **Residency patient simulations**
  - **Continuing medical education (required)**

- **Autopsy**
  - **For post-mortem cause of death analysis**

Challenges and Approaches
Traditional Approaches

- **Augmenting due diligence and attention to detail**
  - **Implies personal responsibility, ie, with greater concentration/attention, error would not have occurred**

- **Litigation system**
  - **To correct damages from errors**
  - **As a deterrent for poor care**
    - **Plaintiff lawyers vs. Physician defenders**

Challenges and Approaches
Traditional Approaches

- **Morbidity and Mortality conferences**
  - **Opportunity to discuss poor clinical outcomes among peers**
  - **May be adversarial – with clinician on the defensive**
  - **May also avoid frank discussion or labeling of error, fail to delineate causes of error[5]**

Challenges and Approaches
Systemic Approaches

- **Medication errors**

  - **ED electronic medical record (EMR)[6]**

    - **Facilitates physician-computerized order entry**

    - **Provides access to allergy information, triggers drug-drug interactions, etc**

    - **Eases patient recall burden, if unfamiliar with their medications**

  - **Barcode technology**

    - **Confirms correct patient and drug prior to administration**

Challenges and Approaches
Systemic Approaches

- **Computerized Enhancements:**[6]
  - **Eliminate abbreviations (trailing zeros, apothecary terms)**
  - **Minimize verbal order ambiguity**
  - **Access up-to-date drug reference information**
  - **Facilitate pharmacy consultation**
    - **Provide ED-based clinical pharmacists to assist/monitor drug administration**

Challenges and Approaches
Systemic Approaches

- **Radiology discrepancies[7,8]**

  - **Est 1.0-2.8% error rates on reads by EPs**

  - **EDs usually have systematic approach to reconcile discrepancies found on image review to:**

    - **Notify patients < 24 hours**

    - **Alert caregivers of relevant clinically significant findings**

Challenges and Approaches
Systemic Approaches

- **Radiology discrepancies**
  - **24-hr attending radiologist availability**
    - **Immediate feedback to clinicians**
    - **Reduces problem of "reread" films**
    - **May significantly increase system costs, especially as many discrepancies are incidental findings**
    - **Radiology-EM conferences for case review**

Challenges and Approaches
Systemic Approaches

- **Guidelines/order sets/template reminders**

  - **Useful with EMR physician order entry, can automate care steps for common diagnoses**

  - **Assists in tracking provider performance on selected quality indices (aspirin in acute MI, antibiotic selection in pneumonia, etc)**

Challenges and Approaches
Systemic Approaches

- **Chart reviews, examples include**
  - **Targeted reviews of select diagnoses with focus on care improvement**
  - **Critical case review: high risk or unexpected poor clinical outcomes**
  - **Concordance conference: ED and hospital discharge diagnoses comparison**
  - **ED return visit logs (< 48hrs)**

Challenges and Approaches
Systemic Approaches

- **Clinical practice**

  - **Chart review triggers:**
    - **Death (< 24 hrs), ICU transfer**
    - **Quality of care review (peers, oversight mechanism)**

Challenges and Approaches
Systemic Approaches

- **Proper case review conferences**
  - Interactive, nonjudgmental forum for discussion of clinical care improvement
  - Must involve frank discussion of error, with focus on correction of systematic factors that put patients at risk
  - Anonymity (of patient and provider) to promote faculty interaction and assessment

Challenges and Approaches
Systemic Approaches

- **Simulation**
  - **Can provide a no-risk learning environment to acquire diagnostic and treatment skills**
  - **Computerized manikins to replicate complicated clinical scenarios**
  - **Patient actor-mediated learning sessions to improve communication and diagnostic skills**
  - **Graduate the clinical complexity of encounters**
  - **Prompt immediate feedback from instructors**

Challenges and Approaches
Systemic Approaches

- **Simulation (continued)**

    - **Improve communication/team management skills**

    - **Re-enact educational moments to reflect on professionalism and ethics[9-11]**

    - **Manikins, cadaveric and animal models to replay and fine tune procedural skills without risks to patients**

Challenges and Approaches
Systemic Approaches

- **Supervision**
  - **Residents should have ready access to senior clinicians for patient care activities**
  - **Culture of patient safety should encourage all caregivers to ask for help when needed**

Challenges and Approaches
Systemic Approaches

- **Direct patient care observation**

  - **Provides real-time feedback on diagnostic and interactive skills**

  - **Can be combined with video recording for later review and analysis**

  - **Standard trigger videotaping can be used to examine complicated cases, clinical sequence, or specific outcome to improve care process**

Challenges and Approaches
Systemic Approaches

- **Team-based care**
    - Open communication is respected goal of participants
    - The attitude: "everybody has a say" is facilitated by team leader
    - Concern for patient-centered care aids in conflict resolution among team members
    - Feedback and debriefing manages to improve care for subsequent patients

Challenges and Approaches
Systemic Approaches

- **Wellness of caregivers**
  - **Growing recognition that caregivers who do not maintain their own physical/mental health cannot care well for patients**
  - **Problems of physician fatigue and impairment are risk factors for medical error**
  - **Required topic area in didactic curriculum for residency training**

Challenges and Approaches
Systemic Approaches

- **Wellness of caregivers covers:**
  - **Limitations in resident duty hours**
  - **Encouragement for cyclic scheduling**
  - **Awareness of provider impairments as substrate for patient errors**

Policy Implications for Emergency Physicians

- **Every person errs: It is human nature**

- **Open communication and reporting is critical**

- **ED employees on every level must be supported and encouraged to report**

- **Focus on improvement of systematic factors that allow error to occur**

Policy Implications for Emergency Physicians

- Error disclosure can be promoted through:
  - ED chart reviews
  - Self-reports
  - Staff and patient surveys
  - Resident education
  - Faculty address and modeling behavior
  - Computerized automation for review

Policy Implications for Emergency Physicians

- **Options for error disclosure incorporate:**
  - **Culture of patient and provider safety**
    - **Discussion framework that protects medical provider anonymity maintains customary safeguards for patient confidentiality**
    - **Affects systematic change that promotes overall outcome improvements for patients**

Discussion Questions

80 yo woman with history of dementia falls at a nursing home and sustains a displaced distal radius fracture. Paramedics administer morphine sulfate en route. On arrival to ED, additional morphine and midazolam for reduction in the ED. Post procedure, the patient has a respiratory arrest requiring intubation. Subsequent chart review reveals an "allergy" to morphine.

- Was this likely an allergic reaction or an adverse medication reaction?

- What options do we have for reviewing patient allergy information prior to administration of medications?

- What methods could we use to alert clinicians to patients who might be at higher risk for adverse medication reactions?

- What system changes could be implemented to monitor and prevent adverse medication events such as this?

Discussion Questions

40 yo man without medical history presents with chest pressure. His ECG shows nonspecific T wave abnormalities and his discomfort is relieved by a "GI cocktail". His troponin is normal. He is discharged with a diagnosis of gastroesophageal reflux disease (GERD). He returns to the ED 6 hours later with an ST-segment elevation myocardial infarction.

- Was this an error in diagnosis and management?
- What system tools or guidelines could help prevent outcomes such as this?
- What forums are appropriate for discussion of errors and poor outcomes?
- What approach should be used for discussion and dissemination of educational information related to this case?

Discussion Questions

45 yo man sustains 60% total body surface area burn. He is intubated and a subclavian central line is inserted, without CXR confirmation. Over the next few hours, he becomes hypotensive, difficult to ventilate and hypoxic. The intern attributes decreased pulmonary compliance to the man's burns. IV fluids and vasopressors are administered. The q AM CXR, ordered for ICU rounds, reveals a large tension pneumothorax.

- What level of supervision is appropriate for a junior resident caring for a critically ill patient?

- What options does a resident have for getting additional assistance when needed? How, as a system, can we encourage clinicians to ask for help?

- How could we develop clinical guidelines to prevent this error from recurring?

Resources

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