

# Patient Safety Curriculum

## Florida State University College of Medicine



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# Patient Safety Curriculum Subcommittee

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# Outline

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- (1) FSUCOM educational structure
- (2) Patient safety definitions
- (3) Domains and competencies of a patient safety curriculum
- (4) Incorporating patient safety in our existing curriculum

# FSUCOM Educational Structure

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- 1<sup>st</sup> newly accredited US medical school of the 21<sup>st</sup> century.
- Adopted a non-traditional educational model.
- A main campus with 6-regional campus sites across the State of Florida.
- Basic science years conducted at main campus.
- Clinical science years conducted at 6-regional campus sites.
- 75% of third year is taught in physician private practice offices.
- 25% of third year is taught in a hospital setting.

# Patient Safety Definitions

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- Patient Safety: is the avoidance, prevention, and amelioration of adverse outcomes or injuries stemming from the processes of health care.
- Medical error: failure of a planned action to be completed as intended, or the use of a wrong plan to achieve an aim.

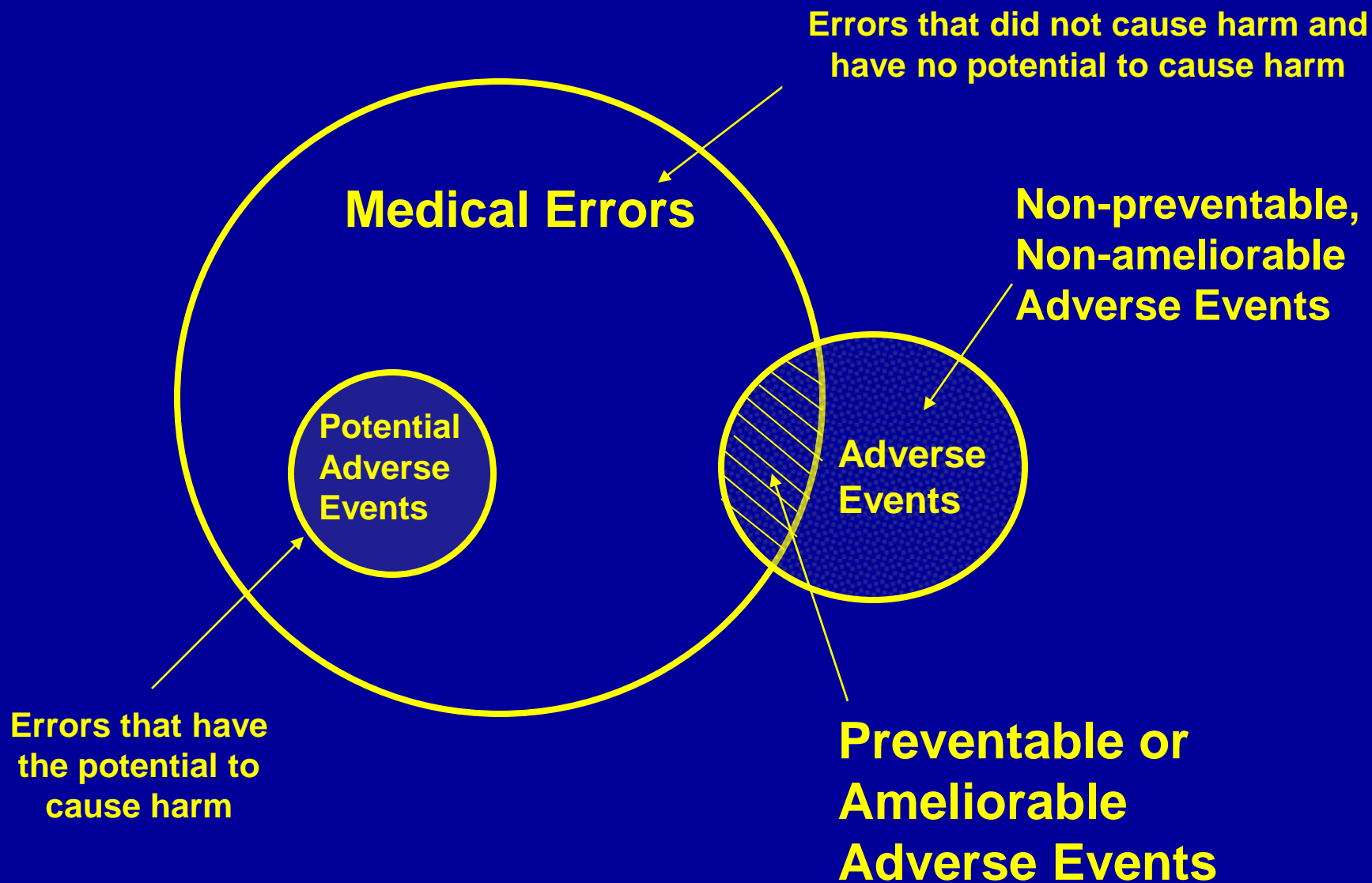
# Patient Safety Definitions

- Adverse event: an injury caused by medical management rather than by the underlying disease or condition of the patient.
- Preventable adverse event: an adverse event injury that could have been avoided as a result of an error or system design flaw.
- Ameliorable adverse event: an injury whose severity could have been substantially reduced if different actions or procedures had been performed or followed.

Kohn LT, Corrigan JM, Donaldson MS, eds. To Err Is Human: Building a Safer Health System. Washington, DC: National Academy Press; 2000.

Forster AJ, Murff HJ, Peterson JF et al. The incidence and severity of adverse events affecting patients after discharge from the hospital. Ann Intern Med 2003;138:161–167.

**Figure 1: Relationship between medical errors, potential adverse events, and adverse events.**



# Patient Safety Definitions

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- Error of omission: when a necessary procedure or intervention failed to be performed leading to morbidity or mortality to the patient involved.



# Patient Safety Definitions

- Diagnostic error: a diagnosis that is missed, wrong, or delayed, as detected by some subsequent definitive test or finding.
- Active errors: occur at the level of the frontline operator, and their effects are felt almost immediately (e.g., slips, lapses, violations).
- Latent errors: tend to be removed from the direct control of the operator and include things such as poor design, incorrect installation, faulty maintenance, bad management decisions, and poorly structured organizations.

Kohn LT, Corrigan JM, Donaldson MS, eds. To Err Is Human: Building a Safer Health System. Washington, DC: National Academy Press; 2000.

Graber M. Diagnostic errors in medicine: a case of neglect. Jt Comm J Qual Patient Saf. 2005;31:106-113.

# Patient Safety Definitions

- Human factors: the study of the interrelationships between humans, the tools and equipment they use in the workplace, and the environment in which they work.
- Root cause analysis: is a method that is used to identify underlying system and organization problems that led to the adverse event or events.
- Health care-associated infection (nosocomial infection): an infection acquired in a health care setting by a patient who was admitted or seen for a reason other than that infection.

Kohn LT, Corrigan JM, Donaldson MS, eds. To Err Is Human: Building a Safer Health System. Washington, DC: National Academy Press; 2000.

Eagle C.J., Davies J.M., Reason J. Accident analysis of large-scale technological disasters applied to an anaesthetic complication. Can J Anaesth. 1992;39:118–122.

Vincent C., Ennis M., Audley R.J. Medical accidents. Oxford, New York: Oxford Press, 1993.

World Health Organization. WHO guidelines on hand hygiene in health care (advanced draft): a summary. Geneva, World Health Organization, 2005.

# Patient Safety Curriculum

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- Developed a comprehensive 4-year patient safety curriculum which includes 6-domains and 20-measurable competencies.

# Patient Safety Curriculum Domains

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- Human Factors
- System Failures
- Communication & Teamwork
- Infection Control
- Medication Safety
- Ethical & Medicolegal Issues

# Patient Safety Curriculum

## Human Factors

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1. Describe the relationship between human factors and patient safety (how fatigue, stress, poor communication and inadequate knowledge / skills impact human performance and may be associated with adverse events).
2. Identify and advocate for systems based methods of reducing human errors (pictorial reminders for hand washing, limiting inpatient medication formulary and having inventories of frequently administered drugs, routinely use checklists and be alert to potential errors when involved with lengthy repetitive activities).

# Patient Safety Curriculum

## Human Factors

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3. Become aware of commonly used patient safety definitions (e.g. medical error, adverse event).
4. Utilize information technology tools {Electronic Medical Record (EMR) system, Computerized Physician Order Entry (CPOE), PDAs, EBM tools} when delivering healthcare to help avert medical errors and adverse events.

# Patient Safety Curriculum

## Human Factors

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5. Become aware of diagnostic error in medicine, teamwork and communication failure in surgery, and medication error in pediatrics and how existing strategies may prevent them (e.g. computer-based diagnostic decision support system, use of simulators to improve teamwork and communication, and CPOE & ePrescribing to avoid medication errors in children).

# Patient Safety Curriculum

## System Failures

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6. Identify systemic failures when adverse events (e.g., geriatric syndromes, wrong patient, wrong site, wrong side, or wrong procedure) occur by retrospectively outlining the sequential chain of clinical events (e.g. human factors, technical factors, organizational factors) leading to their occurrence and advocate for a blame free process of continuous quality improvement.



# Patient Safety Curriculum

## Communication & Teamwork

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7. Communicate clearly with patients (avoid medical jargon, explain medical terminology after use; use open and close ended questions; progress from general to specific) and demonstrate use of rapport building skills (nonverbal SOFTEN and verbal PEARLS statements).
8. Demonstrate the ability to actively engage patients and caregivers as part of the healthcare team (to assist in identifying diagnoses, deciding appropriate care plans, ensuring treatments are appropriately administered, and identifying adverse events. In addition, present patients with education materials, provide patients with medication lists, and test results).

# Patient Safety Curriculum

## Communication & Teamwork

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9. Identify and discuss the roles of interprofessional team members (e.g. nursing, pharmacy, social work) and the ability to communicate discipline relevant information to ensure the delivery of safe healthcare to patients.
10. Communicate a patient's medical information (e.g. diagnoses, test results) to healthcare professionals during transitions of care (e.g., hospital to ambulatory office or clinic, within hospital services) to prevent handoff communications from resulting in adverse events.

# Patient Safety Curriculum

## Infection Control

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11. Identify potential infectious hazards of medical interventions (catheter related infections, surgical site infections, bloodstream infections associated with intravascular devices, ventilator associated pneumonia) and apply appropriate risk reduction strategies (minimize duration of use) to prevent adverse events.
12. Prevent healthcare associated infections by personally applying and advocating for others' use of universal precautions, use personal protection methods (respiratory isolation, contact isolation), immunizations (hepatitis B), and demonstrate what to do if exposure to potentially infectious material occurs (notify appropriate staff in a healthcare setting).

# Patient Safety Curriculum

## Infection Control

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13. Identify and advocate for system wide efforts to reduce infection (protocols for hand washing, use of isolation, equipment sterilization) in a variety of health care settings (inpatient rooms, operating rooms, ambulatory clinics).
14. Educate and empower patients to minimize the risk of infections (single use needles, hand washing instructions, hands free coughing).

# Patient Safety Curriculum

## Medication Safety

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15. Explain the safety implications associated with drug selection and dosing across the lifespan (e.g. age-related changes in renal and hepatic function, dosing errors in children).
16. Document a patient's complete medication list and allergies to medication, including prescribed, herbal and over-the-counter medications, and for each medication provide the dose, frequency, indication, benefit, side effects, and an assessment of adherence.

# Patient Safety Curriculum

## Medication Safety

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17. Identify the most accurate list of all medications a patient is taking at transitions of care by comparing a patient's current medication list including name, dose, frequency, and route with a physician's admission, transfer, and/or discharge orders.
18. Identify drug interactions using healthcare information technology tools (EMR system, CPOE, PDAs).

# Patient Safety Curriculum Medication Safety

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19. Become aware of the safety implications associated with variability in patient response to different drugs (potential simulation involving conscious sedation of propofol to be implemented in the curriculum by April of 2013 through an R21 NIH grant from UF).

# Patient Safety Curriculum

## Ethical & Medicolegal Issues

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20. Discuss the ethical and medicolegal issues surrounding disclosure of adverse events to patients.



# Integration

- Patient safety education is new.
- Patient safety consists of several fields (human factors, systems thinking, effective teamwork) not traditionally covered in a medical school curriculum.
- Patient safety links many traditional medical school subjects (applied sciences, clinical sciences).
- Patient safety education contains new knowledge and it is highly contextual.

# Education

- Contextualization: is a process of identifying individual patient circumstances (their context) and, if necessary, modifying the plan of care to accommodate those circumstances (this means showing students when and how patient safety knowledge can be applied in practice, using examples that students can relate to)
- Contextual error: a contextual error occurs when a physician does not identify elements of a patient's environment or behavior, such as access to care, that must be addressed to appropriately plan care. Research has demonstrated that contextual errors can be identified using standardized patients.

# Education

- An Educational Intervention for Contextualizing Patient Care and Medical Students' Abilities to Probe for Contextual Issues in Simulated Patients (JAMA 2010).
  - design, setting, participants: RCT, 4<sup>th</sup> year medical students in internal medicine sub-internships at the University of Illinois/VA Hospital (Chicago).
  - intervention: 4-hour course on contextualization (workshop)

# Education

## -main outcome measures:

- probing for contextual issues in an encounter
- probing for medical issues in an encounter
- developing an appropriate treatment plan

## -outcomes were assessed:

- using 4 previously validated standardized patient encounters by each participant and were adjusted for sub-internship site, academic year, time of year, and case scenario.

# Education

- -results:  
students who participated in the contextualization workshop were significantly more likely to probe for contextual issues in the standardized patient encounters and significantly more likely to develop appropriate treatment plans for standardized patients with contextual issues.

# Incorporating Patient Safety Material Human Factors

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- Doctoring 1 (lecture, small group)
- Doctoring 2 (simulation), Health Issues 1 (lecture, case study)
- Doctoring 3 , Clerkships
- 4<sup>th</sup> year electives (project)

# Incorporating Patient Safety Material System Failures

- Doctoring 1 (lecture, small group)
- Doctoring 2 (simulation), Health Issues 1 (lecture, case study)
- Doctoring 3 (OSCE), Clerkships (EMR, CPOE)
- 4<sup>th</sup> year electives (project)

# Incorporating Patient Safety Material Communication & Teamwork

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- Doctoring 1 (CSSC)
- Doctoring 2 (simulation), ICU elective (TMH)
- Doctoring 3 (handoffs), Clerkships
- 4<sup>th</sup> year elective in surgery and anesthesiology (project)



# Incorporating Patient Safety Material Infection Control

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- Doctoring 1 (CSSC)
- Doctoring 2 (simulation), microbiology (lecture)
- Doctoring 3 (OSCE), Clerkships
- 4<sup>th</sup> year elective in infectious disease (project)

# Incorporating Patient Safety Material Medication Safety

- Doctoring 1 (CSSC)
- Doctoring 2 (simulation), pharmacology (lecture, case study)
- Doctoring 3 (OSCE), Clerkships
- 4<sup>th</sup> year elective in pediatrics and geriatrics (project)

# Incorporating Patient Safety Material Ethical & Medicolegal Issues

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- Medicine & Behavior 2 (lecture, case study, group discussion)
- Doctoring 3 (case study, student presentation, OSCE),  
Clerkships (student presentation)
- 4<sup>th</sup> year elective in law & medicine with Law School (project)

# Limitations

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- A limitation in our existing curriculum is the limited time spent in a hospital setting which may affect a student's exposure to common patient safety issues seen in the hospital setting.
- A patient safety curriculum may compensate for this by allowing students to participate in simulation activities involving standardized patients at the main campus or at regional campus sites.

# References

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- Lucian Leape Institute Report, UNMET NEEDS: “Teaching Physicians to Provide Safe Patient Care”
- Institute of Medicine Report, “To Err Is Human”
- Institute of Medicine Report, “Crossing the Quality Chasm”
- World Health Organization Report
- Johns Hopkins School of Medicine
- University of Florida College of Medicine
- Mayo College of Medicine
- University of Colorado School of Medicine
- Jefferson Medical College
- AAMC recommendations for medical education