Course: **Acute Trauma Care** (SUR 1615)

Department: Surgery  
Faculty Coordinator: Dr. Joseph P. Minei  
Hospital: Parkland Health & Hospital System  
Periods offered: All  
Length: 4 weeks  
Max no. of students: 3  
First Day Contact: 214-648-7295/Trauma Chief Resident  
First Day Time: 7:00 a.m.  
First Day Place: ER Trauma Hall, Parkland Memorial Hospital

I. Course Description:

The course is intended to present a comprehensive exposure of acute trauma care to the fourth year medical students. The multi-disciplinary nature of the clerkship with exposure to Neurosurgery and Surgical Sub-specialties allows application of knowledge and skills across multiple disciplines. This is further ensured through the delivery of trauma care to a large volume of patients.

II. Course Goals and Objectives: (based on ACGME competencies for resident education and modified for medical student education. See appendix for specific goals and skills.)

*Patient Care:*

**Goal**

Students, together with supervising faculty, must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

**Objectives**

Students are expected to:

- Gather essential and accurate information about their patients. *Examples:* Complete history and physical examination supported by appropriately ordered
diagnostic studies for acute trauma patients.

Make informed recommendations about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment. Examples: Patients with acute traumatic brain injury, fractures and multiple system blunt injuries.

Counsel and educate patients and their families. Examples: Discussion of various treatment modalities that are being utilized to treat acute brain injuries, timing of fracture fixation, and management of various other organ injuries.

Provide health care services aimed at preventing health problems or maintaining health. Example: Utilize modern strategies in the diagnosis (ultrasound) and treatment of acute injury.

Work with health care professionals, including those from other disciplines, to provide patient-focused care, develop and carry out patient management plans. Examples: Respiratory therapy necessary for management of acute lung injury. Thoughtful utilization of orthopedics, neurosurgery and interventional radiology
to provide a coordinated plan of patient care.

Use information technology to support patient care decisions and patient education. *Example:* Provide patients and their families with discharge planning pamphlets and information regarding care related to physical and occupational therapy and reconstructive surgery.

**Medical Knowledge:**

**Goal**

Students must demonstrate knowledge about established biomedical and clinical sciences and the application of this knowledge to patient care.

**Objectives**

Students are expected to:

Demonstrate an analytic thinking approach to clinical situations. *Example:* Use cardiovascular monitoring with a Swan-Ganz catheter to identify various types of shock.

Know and apply the basic and clinically supportive sciences that are appropriate to their discipline. *Examples:* The use of radiology, infectious disease and pharmacy to treat infectious complications of traumatic injuries.
**Practice-Based Learning and Improvement:**

**Goal**

Students must be able to assimilate scientific evidence and improve their patient care practices.

**Objectives**

Students are expected to:

- Locate and assimilate evidence from scientific studies related to their patients’ health problems. *Example:* Clinical trials specific to patient injuries to determine the best mode of care.

- Use information technology to manage information, access on-line medical information; and support their own education. *Example:* Use of the trauma registry to provide information regarding disease state, reason for admission and underlying physiology to predict length of stay.

**Interpersonal and Communication Skills:**

**Goal**

Students must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients and their families.

**Objectives**

Students are expected to:
Create an ethically sound relationship with patients.

Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills. *Example:* Education of patients and their families regarding physical and occupational therapy after discharge from the trauma service.

Work effectively with others as a member of a health care team.

**Professionalism:**

**Goal**

Students must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

**Objectives**

Students are expected to:

Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients that supercedes self-interest; accountability to patients and the profession; and a commitment to excellence and on-going professional development. *Example:* Willingness to seek additional patients for evaluation when any given patient’s management is completed, regardless of the
patient’s demographics and specific disease.

Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, and confidentiality of patient information.

Demonstrate sensitivity and responsiveness to patients’ culture, age, gender, and disabilities.

III. Methods of instruction:

A) Didactic (schedule, topic, faculty):

Tuesday and Friday— E5.514 conference room UTSW.

B) Clinical (schedule, faculty teaching, housestaff teaching):

Students are expected to work up new patients and continue following established patients on the wards. They are expected to be an integral part of the care team presenting their patients on work rounds. They are expected to attend Thursday 7:30 – 9:30 am Trauma/ICU Conference in the anesthesia conference room of PMH.

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<td>7:30 – 9:30 am</td>
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<td>6:30 am - 12 pm</td>
<td>Procedures and see patients</td>
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<td>Attend General Surgery M&amp;M, Chiefs Conf, Surgical Grand Rounds</td>
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Note: In-house call is approximately every 3\textsuperscript{rd} night.

C) Student responsibilities (and to whom accountable)

Evaluate new in-patients, present to attending, and follow until discharge.

IV. Method of evaluation of student:

Pass-fail grades; there are no examinations. Completion of an on-line evaluation by the student is required for a pass grade. Evaluations of the student by the faculty will be based on achievement of the stated objectives of the course. Similarly, evaluations of the elective (by the student) will include whether the student considers that the stated objectives of the course were achieved.

V. Appendix: EDUCATIONAL GOALS: ACUTE TRAUMA CARE CLERKSHIP

A. Knowledge

1. Understand the principles of ATLS.

2. Understand and identify different forms of shock associated with the injured patient. \textit{Examples include: hemorrhagic, neurogenic, cardiogenic and septic shock.}

3. Understand the principles of injury triage based on number of patients, severity of injury and available resources.

4. Outline the signs and symptoms as well as the etiology of respiratory failure in the injured patient.

5. Understand the basic principles in the diagnostic evaluation of single organ system injury.

6. Know role in trauma resuscitation team, and be able to perform the appropriate tasks of that role. Be familiar with trauma protocols.
7. Understand the costs, risks and expected information obtained from non-invasive diagnostic tests to evaluate the injured patient. *Examples include: plain films, ultrasonography and CT scanning.*

8. Understand the costs, risks and expected information obtained from invasive diagnostic tests to evaluate the injured patient. *Examples include: wound exploration, DPL and arteriography.*

9. Understand rationale and indications for the operative as well as non-operative management of the injured patient.

10. Understand the rationale and indications for the use of adjuncts to both operative and non-operative management of injured patients. *Examples include: utilization of therapeutic interventional radiological techniques.*

11. Understand the indications for, and the complications of blood component therapy.

12. Understand the factors associated with non-surgical bleeding in the injured patient. *Examples include: hypothermia, dilutional and consumptive coagulopathy.*

13. Understand the pathophysiology of traumatic brain injury, altered mental status and spinal cord injury.

14. Understand the indications for, and different types of agents used in prophylactic and therapeutic antibiotic use.

15. Understand appropriate fluid and electrolyte resuscitation.

16. Understand the costs, risks and expected information obtained from routine laboratory testing.

**B. Skills**

1. Correctly identify different forms of shock and institute appropriate therapy. *Examples include: institution of IV access through percutaneous and surgical routes.*

2. Assist in correctly triaging patients by severity of injury, treating life threatening injuries first.
4. Identify patients in respiratory failure and understand appropriate therapy. *Examples include:* proficiency with assisting endotracheal and surgical airway management, tube thoracostomy and respiratory monitoring including pulse oximetry and end-tidal CO₂ monitoring.

5. Correctly identify, appropriately evaluate and assist with managing patients with single organ system injuries.

6. Correctly follow trauma protocols for the diagnosis and management of injured patients.

7. Correctly order and interpret basic radiologic studies. Assist with performance and interpret trauma ultrasonography with supervision.

8. Correctly utilize and interpret invasive diagnostic procedures. Assist with performance of DPL.

9. Correctly utilize non-operative management techniques in single system injuries.

10. Appropriately utilize blood component therapy. *Examples include:* PRBC’s, FFP, platelets and cryoprecipitate.


12. Use antibiotics correctly for prophylaxis and therapy.

13. Use laboratory analysis in a cost-effective manner.