Asynchronous Assignments

- Cardiology
- Dermatology
- Endocrine
- ENT
- Environmental
- GI/Surgery
- Hematology/Oncology
- Infectious Diseases
- Neurology
- OB/GYN
- Ophthalmology
- Psychiatry
- Pulmonary
- Renal
- Toxicology
- Trauma

***Bolded Async Assignments have been updated with new questions and readings for 2017-2018***
Trauma 1

Required Readings:

RebelEM: Ten Commandments of Trauma Resuscitation
http://rebelem.com/ten-trauma-resuscitation-commandments/

RebelEM: Spinal Immobilization in Trauma Patients
http://rebelem.com/spinal-immobilization-in-trauma-patients/

PEMPlaybook: Multisystem Trauma in Children
Part 1: Airway, Chest Tubes, Thoracotomy
Part 2: Massive Transfusion, Trauma Imaging, Resuscitative Pearls

SGEM: That Chest Tube - She’s a Beauty

EMDocs: Traumatic Cardiac Arrest
http://www.emdocs.net/traumatic-cardiac-arrest/

*Quiz:
http://goo.gl/forms/afXS811vzmvrywoI2

Trauma 2

Required Readings:

SGEM: Pan Scan or Leave Other Scans Behind?
http://thesgem.com/2017/06/sgem181-did-you-ever-have-to-make-up-your-mind-pan-scan-or-leave-other-scans-behind/

ALiEM: Management of Major Pelvic Trauma

St. Emlyn’s: Pediatric Trauma Snapshot - What's New?
http://stemlynsblog.org/paediatric-trauma-whats-new/

EMDocs: Trauma Management of the 3rd Trimester Pregnant Patient
ALiEM: Traumatic Brain Injuries in Older Adults
https://www.aliem.com/2016/02/traumatic-brain-injuries-older-adults/

Rebelem: Etomidate vs Ketamine in Trauma RSI
http://rebelem.com/etomidate-vs-ketamine-in-trauma-rsi/

*Quiz: http://goo.gl/forms/Npd0ElXC66qG4tzX2

Extra (and Repeat) Readings:

EMRAP: Pigtail Catheter vs Chest tube for Pneumothorax
https://www.emrap.org/episode/may2014/paperchase5

EMRAP: NEXUS CT CHEST
https://www.emrap.org/episode/feb2016emrap/linsessionnexus

St. Emlyn’s: Whole body vs Selective CT for Trauma (REACT-2 Trial)
http://stemlynsblog.org/jc-always-need-whole-body-ct-trauma-st-emlyns/

EMCrit: The Case of the Anatomic Injury (Utility of the “Trauma Pan-Scan”)

EMCrit: The PROPRR Trial with John Holcomb
http://emcrit.org/podcasts/proppr/

EMCrit: Rapid Thoracotomy Tray
http://emcrit.org/blogpost/abbreviated-ed-thoracotomy-tray/

EMCrit: Don’t Half Ass Your Fast
http://emcrit.org/podcasts/fast-exam/

Mt. Sinai: How to Insert Cordis
https://www.youtube.com/watch?v=coEpM7jBzsM

Critical Care Procedures: Lateral Canthotomy

EMDocs: TXA Use in Trauma
http://www.emdocs.net/txa-use-trauma-update/

EMDocs: Resuscitation of the Pregnant Trauma Patient
http://www.emdocs.net/resuscitation-of-the-pregnant-trauma-patient-pearls-pitfalls/

ABC Score for Massive Transfusion in Trauma:

LITFL: Trauma Initial Assessment and Management
http://lifeinthefastlane.com/trauma-initial-assessment-management/

Rebelem: All Thoracotomy Episode
Trauma Quiz 1

* Required

1. What’s your name? *

Question 1

2. A 25M w/ no significant PMH presents after multiple stab wounds to the left chest and abdomen region. Vitals: T 36C, HR 125, RR 24, BP 80/54, SpO2 95% on NRB. The patient is bleeding from three visible left sided stab wounds. As you begin your resuscitation, your nurse tells you that she cannot palpate a carotid pulse. Which of the following interventions is LEAST likely to be effective? *

Mark only one oval.

☐ A) Finger thoracostomy of the left chest   Skip to "Incorrect Answer, Please Try Again."
☐ B) Emergent thoracotomy of the left chest   Skip to "Incorrect Answer, Please Try Again."
☐ C) Administration of two units of O-negative PRBCS   Skip to "Incorrect Answer, Please Try Again."
☐ D) Initiation of a titrated norepinephrine drip   Skip to "Incorrect Answer, Please Try Again."
☐ E) Endotracheal intubation   Skip to "Incorrect Answer, Please Try Again."

CORRECT!
The correct answer is D. The article referenced in this question is: http://www.emdocs.net/traumatic-cardiac-arrest/

Our patient has experienced an in-hospital traumatic cardiac arrest, most likely due to the penetrating injuries he sustained. In this peri-arrest phase, several immediate measures must be taken to ensure survival.

Establishment of a definitive airway is important to prevent hypoxemia (E). Administration of colloid (blood) rather than crystalloid will correct our patient's hypovolemia (C).

The next two likely life-threatening injuries are tension pneumothorax and pericardial tamponade. Ideally by using point-of-care ultrasound, an ED provider can determine which of these injuries are most likely but given the severity of the situation (and the absence of point-of-care ultrasound in the question stem), ED providers must treat for both of these injuries in a traumatic cardiac arrest patient with known penetrating trauma to the chest (A, B) with thoracostomy and subsequent thoracotomy as indicated.

There is no role for vasopressors in traumatic shock unless there is a component of neurogenic shock. In a patient with expected tachycardia in response to hypotension, it is far more likely this is hypovolemic shock.

Question 2
3. Which of the following is true in regards to major trauma patients? *
Mark only one oval.

☐ A) Cryoprecipitate is indicated in all patients with a fibrinogen level < 1.0g/L.  
    *Skip to "Incorrect Answer, Please Try Again."

☐ B) The optimal time to give TXA to your hemorrhagic trauma patients is within 3 hours after injury.  
    *Skip to "Incorrect Answer, Please Try Again."

☐ C) Blood products are optimally administered in a 1:1:1 ratio to prevent exsanguination.  
    *Skip to "Incorrect Answer, Please Try Again."

☐ D) Serum lactate is a useful biomarker of resuscitation and adequate resuscitation should involve a drop in lactate of 20% per hour.  
    *Skip to "Incorrect Answer, Please Try Again."

☐ E) All of the above are correct.  
    *Skip to "Incorrect Answer, Please Try Again."

☐ F) A, B, D are correct.  
    *Skip to "Incorrect Answer, Please Try Again."

☐ G) B, C, D are correct.  
    *Skip to "Incorrect Answer, Please Try Again."

*Skip to "Incorrect Answer, Please Try Again."

**CORRECT!**
The correct answer is E. The article referenced is: http://rebelem.com/ten-trauma-resuscitation-commandments/

Low fibrinogen is the laboratory finding associated with disseminated intravascular coagulation (DIC) which can worsen coagulopathy and leads patients further into the trauma triad of death - acidosis, coagulopathy, hypothermia (A). Per the CRASH-2 trial, a decrease in mortality with TXA administration was seen only if given up to 3 hours after injury (B). Per the PROPRR trial, balanced fluid resuscitation improved mortality from exsanguination and improved hemostasis (C). Serum lactate can be monitored to assess fluid resuscitation and predicts adequate resuscitation if there is a 20% decrease per hour within the first two hours (D).

**Question 3**

4. A 12M presents to the Emergency Department after being hit by a school bus while he was walking across the street. You notice a contusion on the patient's head. The patient is groaning, not following commands and is unable to speak in sentences to you. You make the decision to intubate. Which of the following is a consideration in your approach for this patient? *
Mark only one oval.

☐ A) The traumatic injury that is causing the patient's altered mental status likely occurred from the impact of the bus on his body.  
    *Skip to "Incorrect Answer, Please Try Again."

☐ B) Compared with adults, children are more likely to have cervical spine injuries at C2 rather than C7.  
    *Skip to "Incorrect Answer, Please Try Again."

☐ C) The proper size endotracheal tube in this patient is a 7.5 cuffed ET tube.  
    *Skip to "Incorrect Answer, Please Try Again."

☐ D) This patient is less likely to arrest in your ED compared to a similar 12 year-old who was stabbed in the chest.  
    *Skip to "Incorrect Answer, Please Try Again."

☐ E) Children are more likely to demonstrate significant abdominal bruising with blunt injuries when compared to adults.  
    *Skip to "Incorrect Answer, Please Try Again."

*Skip to "Incorrect Answer, Please Try Again."

**CORRECT!**
The correct answer is B. The article this question is referencing is: http://pemplaybook.org/podcast/multisystem-trauma-in-children-part-one-airway-chest-tubes-and-
Compared with adults, pediatric trauma patients are:
- More likely to have a more cephalad injury of their cervical spine (due to the fulcrum of children's necks being more superior) (B)
- Less likely to have obvious intraabdominal injuries and bruising due to underdeveloped musculature (E)
- More likely to suffer and die from blunt trauma (D)

Wadell's triad describes the order in which injuries occur in a pedestrian vs automobile accident. The car hits the patient and causes a femur, pelvic or abdominal injury. The patient gets thrown onto the dashboard and then suffers a chest injury. Lastly, the patient gets thrown to the ground, causing a head injury. In our patient with likely head trauma, his injury was likely caused by his impact with the ground (A).

The formula to remember for ET tube size is (age/4) + 4 for uncuffed tubes and (age/4) + 3.5 for cuffed tubes. Using this formula, the proper size ET tube for our patient is a 7 uncuffed or a 6.5 cuffed (C).

**Question 4**

5. A 4yo M comes to the ED after falling down 2 flights of stairs. You notice a large laceration about 6cm on the left side of the patient's abdomen. Mom reports that the patient was walking down her apartment stairs, tripped and landed onto a pile of garbage with a sharp piece of glass sticking out. The patient's vitals are: HR 160, RR 34, BP 95/67, SpO2 99%. You perform a FAST exam which notes fluid in Morrison's pouch. You call to get your pediatric trauma team involved. You then activate your institution's massive transfusion protocol. Which of the following should be your next step in treatment? *

- A) Administer 15mg/kg of TXA.
- B) Administer 20-50U/kg of PCC.  
  Skip to "Incorrect Answer, Please Try Again."
- C) Allow this patient to be permissibly hypotensive to ensure clotting at the intraabdominal bleeding site.  
  Skip to "Incorrect Answer, Please Try Again."
- D) Obtain a CT of the abdomen and pelvis.  
  Skip to "Incorrect Answer, Please Try Again."
- E) Contact child protective services to evaluate the mother for safe discharge planning.  
  Skip to "Incorrect Answer, Please Try Again."

*Skip to "Incorrect Answer, Please Try Again."

**CORRECT!**

The correct answer is A. The article this question is referencing is:

Activating the massive transfusion protocol for a patient with an intraabdominal bleed involves administering 40cc/kg of PRBCs. In pediatric patients, hypotension is not permissible and the concept of permissive hypotension exists only in adults to promote clot formation. Children do not have as much reserve so hypotension is a concerning sign that likely signals an upcoming cardiac arrest (C). For this patient with unstable vitals who is not yet hypotensive, it is of utmost importance to stabilize the patient for OR. Obtaining a CT scan would unnecessarily delay definitive management (D). TXA has been shown to reduce mortality in hemorrhaging trauma patients (A) and is advisable. The use of PCC without a confirmed coagulopathy is not advisable (B). Finally, while this child will need to be evaluated by a case worker, that can wait until medical stabilization first occurs (E).

**Question 5**
6. Which of the following is FALSE regarding cervical spine immobilization in trauma patients? *
Mark only one oval.

☐ A) Spinal collars are associated with increased difficulty in intubation but no difference in success rates.  
Skip to "Incorrect Answer, Please Try Again."

☐ B) Spinal collars can worsen a patient's pulmonary function.  
Skip to "Incorrect Answer, Please Try Again."

☐ C) Spinal collars increase the potential for pressure ulcers.  
Skip to "Incorrect Answer, Please Try Again."

☐ D) Spinal collars have not been shown to prevent neurologic disease.  
Skip to "Incorrect Answer, Please Try Again."


Skip to "Incorrect Answer, Please Try Again."

CORRECT!
The correct answer is E. The article this question is referencing is: [http://rebelem.com/spinal-immobilization-in-trauma-patients/](http://rebelem.com/spinal-immobilization-in-trauma-patients/)

Per the articles cited in the RebelEM post, the first four answers are true however the position statement that was put out from both the EMS Physician Association and the American College of Surgeons was that cervical spinal immobilization may be bypassed in patients meeting the NEXUS C-spine criteria but that EMS providers should continue to judiciously use cervical spinal immobilization.

Stop filling out this form.

Incorrect Answer, Please Try Again
Please click back, DO NOT CLICK SUBMIT.
Trauma Quiz 2

* Required

1. What is your name? *

Question 1

2. A trauma code is called to your Emergency Department. As you walk into your trauma room, you see a young male screaming in pain. EMS reports that the patient was hit by a car which pinned him against the wall of a storefront. The patient is loudly shouting that his right hip hurts. Vitals: HR 140, BP 88/60, RR 24, O2 98% on RA. As you remove the patient’s clothing the patient, you notice a large bruise on his right hip and dark blood at the tip of his urethral meatus. When you apply gentle pressure to the anterior superior iliac spines bilaterally, you note the pubic symphysis widens and the patient has significantly worsening pain. For this patient’s major traumatic injury, which of the following scenarios would favor radiology angioembolization as opposed to surgical intervention? *

Mark only one oval.

☐ A) The patient’s FAST exam shows fluid in Morrison’s pouch. * Skip to “Incorrect Answer, Please Try Again.”

☐ B) A CT scan of the patient shows a venous source of pelvic bleeding. Skip to “Incorrect Answer, Please Try Again.”

☐ C) A CT scan of the patient shows an arterial source of pelvic bleeding with concurrent significant liver and splenic lacerations. Skip to “Incorrect Answer, Please Try Again.”

☐ D) The patient has no findings on a FAST exam and suffers worsening hypotension to a BP of 60/30. Skip to “Incorrect Answer, Please Try Again.”

☐ E) None of the above favor angioembolization over surgical intervention.

CORRECT!
The correct answer is E. The article this question is referencing is:

This patient likely has an unstable pelvic fracture. The patient is hypotensive likely because he is bleeding into his pelvis. Other than resuscitation of the patient, you must acquire source control of the bleeding. The two options for stopping pelvic bleeding involve angioembolization [AE] via IR and direct control by pre-peritoneal packing [PPP] via surgery.

Angioembolization is most effective at controlling arterial bleeds, not venous (B), when there is no other concurrent injury to be managed surgically. If there are signs of intraabdominal injury (A, C), surgery is indicated so that multiple injuries can be addressed at the same time. Traditionally, if patient was unstable and thought to only have an isolated pelvic injury causing bleeding, AE was preferred but recent studies have shown that AE and PPP are of equal efficacy in controlling isolated pelvic bleeding who have unstable vitals (D).

Question 2

https://docs.google.com/forms/d/1ug_x8loNPyjS6JdJ5D14QZvbfafhysRg7sBWYzSabsw/edit
3. A 35M is brought to your Emergency Department after falling down a flight of stairs. Vitals: HR 110, BR 140/60, RR 18, O2 99% on RA. EMS reports a laceration on the back of his head and the smell of alcohol on his breath. The patient is able to speak to you in clear sentences but slurs some of his words together. Your primary and secondary survey reveals the aforementioned laceration but no other notable injuries. His EFAST is negative. Per the REACT-2 trial, which of the following is true about this patient? *

Mark only one oval.

☐ A) He is more likely to die should you forgo CTs of the chest, abdomen and pelvis.  
   
   Skip to "Incorrect Answer, Please Try Again."

☐ B) He is more likely to require a transfusion should you forgo CTs of the chest, abdomen and pelvis.  
   
   Skip to "Incorrect Answer, Please Try Again."

☐ C) He is less likely to be re-admitted within 6 months should you forgo CTs of the chest, abdomen and pelvis.

☐ D) He is more likely to undergo more radiation should you forgo CTs of the chest, abdomen and pelvis.

☐ E) The REACT-2 trial does not apply to him as it excluded intoxicated patients.  
   
   Skip to "Incorrect Answer, Please Try Again."

CORRECT!
The correct answer is C. The article this question is referencing is: [http://thesgem.com/2017/06/sgem181-did-you-ever-have-to-make-up-your-mind-pan-scan-or-leave-other-scans-behind/](http://thesgem.com/2017/06/sgem181-did-you-ever-have-to-make-up-your-mind-pan-scan-or-leave-other-scans-behind/)

Per the primary outcomes mentioned in the REACT-2 trial, there was no significant difference in mortality (A) or transfusion requirements (B). There was a significant difference in both readmission rates and radiation exposure (C, D) - both were higher in the pan-scan group. Alcohol intoxication was not a exclusion criteria of the REACT-2 trial (E).

**Question 3**

4. A 26y/o F is brought to your resuscitation room after a rollover MVC. EMS reports that she was ejected out of the car. Vitals: HR 126, BP 88/60, RR 20, SpO2 96%. The patient is speaking to you and saying she has a lot of pain in her neck and her abdomen. You note a distended abdomen that appears gravid. FAST exam is negative but shows a well-developed, third trimester fetus with intact fetal heart beat. Which of the following is true about this patient? *

Mark only one oval.

☐ A) Resuscitation should ideally continue with the patient in right lateral decubitus position.

☐ B) CT scans should be avoided due to the radiation risk to the fetus.  
   
   Skip to "Incorrect Answer, Please Try Again."

☐ C) RhoGAM administration can be delayed for up to 96 hours if this patient is Rh-negative.  
   
   Skip to "Incorrect Answer, Please Try Again."

☐ D) If considering intubation, administration of Zofran may be indicated as this patient is an elevated aspiration risk.

☐ E) If the mother is feeling contractions, administering a tocolytic is indicated to prevent rapid birth.  
   
   Skip to "Incorrect Answer, Please Try Again."

CORRECT!
The correct answer is D. The article this question is referencing is: [http://www.emdocs.net/trauma-management-of-the-3rd-trimester-pregnant-patient-pearls-pitfalls/](http://www.emdocs.net/trauma-management-of-the-3rd-trimester-pregnant-patient-pearls-pitfalls/)

Third-trimester pregnant patients pose many difficulties in resuscitation. Any third trimester patient should
be resuscitated in left-lateral decubitus (not right, A) to displace the gravid uterus off the IVC. If necessary, pregnant patients should have all diagnostic and therapeutic tests performed that are available to them as the fear of radiation exposure in the third-trimester fetus is minimal especially with exposures < 5 rads (B). RhoGAM should only be delayed for up to 72 hours (C). Pregnant patients are at higher risk of aspiration so Zofran may be used prophylactically (D). Finally, administering a tocolytic is not indicated as uterine contracts are important to monitor (E).

Question 4

5. An 90yo M presents to the ED after a mechanical fall where he hit his head after he was getting out of bed to use the bathroom. He is brought to the Emergency Department where he is subsequently discharged after a negative workup. What is his risk for coming back to the ED next year (and the year after) with a fall AND if he is diagnosed with TBI, what is the risk that he requires neurosurgical intervention? *

Mark only one oval.

☐ A) 8 and 20%  
☐ B) 10 and 50%  
☐ C) 14 and 20%  
☐ D) 6.7 and 35%  
☐ E) 8 and 15%  

Skip to "Incorrect Answer, Please Try Again."

CORRECT!
The correct answer is A. The article this question is referencing is: https://www.aliem.com/2016/02/traumatic-brain-injuries-older-adults/

8% of adults will visit the ED every year because of a fall. 20% of adults diagnosed with TBI require neurosurgical intervention.

Question 5

6. Which of the following is TRUE? *

Mark only one oval.

☐ A) Etomidate is superior to ketamine in traumatic RSI.  
☐ B) Ketamine is superior to etomidate in traumatic RSI.  
☐ C) The dose of etomidate for RSI is 2-4mg/kg.  
☐ D) Ketamine should be avoided in patients with traumatic brain injury.  
☐ E) None of the above are true.

Skip to "Incorrect Answer, Please Try Again."

CORRECT!
The correct answer is E. The article this question is referencing is http://rebelem.com/etomidate-vs-ketamine-in-trauma-rsi/

The 2017 study cited in the RebelEM post shows that etomidate and ketamine have similar outcomes.
when it comes to traumatic RSI (A, B). The dose for etomidate is 0.3mg/kg and the dose for ketamine is 1-2mg/kg (C). There is no evidence that ketamine causes increased ICP (D).

Stop filling out this form.

Incorrect Answer, Please Try Again
Please click back, DO NOT CLICK SUBMIT