PRACTICE GUIDELINES: BLUNT ABDOMINAL TRAUMA (ULTRASOUND CREDENTIALED RESUSCITATION TEAM)

OBJECTIVES:

1. Define the patient that might have significant intra-abdominal injury after blunt trauma.
2. Define suggested diagnostic approaches to determine intra-abdominal injury.
3. Define strategies for evaluation of patients with blunt abdominal trauma.

DEFINITIONS:

Ultrasound Credentialed: A physician will be credentialed via their own departmental and medical staff credentialing process.

FAST EXAM (Focused Abdominal Sonography in Trauma): An ultrasound examination of the abdomen that utilizes a 4-view approach for the diagnosis of blood or fluid in the abdominal cavity and pericardial fluid (this will be referred to as the FAST exam below). E-FAST is an extended exam that includes transverse views of the chest to look for pneumothorax.

GUIDELINES:

1. Treat the ABC's first. The diagnosis of abdominal trauma is part of the secondary survey.

2. Perform physical examination of the abdomen, including rectal exam and flank exam.

   REMEMBER A NEGATIVE EXAM *DOES NOT* RULE OUT INJURY WHILE A POSITIVE ONE RULES ONE IN

3. Consider the possibility of abdominal injury in the following situation:
   a. Obvious abdominal pain with or without peritoneal findings on physical examination.
   b. Significant external findings on the abdominal wall such as deformity contusion, bleeding, laceration (seatbelt sign)
   c. Pelvic fracture.
   d. Fractures present above and below the diaphragm.
   e. Lower rib fractures.
   f. Lumbar or low thoracic spine fractures.
   g. Unexplained hemorrhage, shock or blood loss.
   h. A history of abdominal impact (e.g., deformed steering wheel, passenger compartment damage) in a patient with altered sensorium or not monitored.
      i. Drugs and alcohol impairment.
      ii. Tetraplegia, paraplegia.
      iii. Traumatic brain injury with coma.
      iv. Prolonged non-abdominal surgery requiring anesthesia.

4. <u>Go immediately to the operating room</u> for laparotomy in the following situation:
   a. Findings of diffuse peritoneal irritation (as in general surgery).
   b. Hemorrhagic shock with an indication that there is blood loss in the abdomen
   c. Ruptured diaphragm on chest X-ray.
   d. Obvious peritoneal penetration. (Note: Laparoscopy may be used in stable patients to r/o significant injury.)

5. If the patient has possible abdominal injury and has unstable vital signs, perform the FAST exam (see following paradigm).
    a. If positive (evidence of blood in the peritoneal cavity), go to the operating room for exploratory laparotomy
    b. If negative, consider other causes of massive hemorrhage resulting in hemodynamic instability (long bone fractures, pelvic fractures, hemothorax). (NOTE: If no other source is found rapidly then consider laparotomy as a negative FAST can be a false negative.

6. If the patient has a possibility of abdominal injury and no gross need for exploration and is stable (i.e., relatively normal) vital signs:
    a. Perform the FAST exam (may go directly to CT was well).
    b. If positive, perform abdominal CT scan.
        i. If CT scan shows solid organ injuries, then admit the patient for observation. (See guidelines for non-operative management of spleen and liver injuries.)
        ii. If CT scan shows no solid organ injuries and confirms abdominal fluid ***perform laparotomy to fully evaluate the bowel.***

7. Consider DPL if FAST or CT unavailable.

8. If observation is chosen patients should have regular interval exams and laboratory studies(CBC). If the patient develops peritoneal signs, significant fever or increasing pain away from sites of injury, consider laparotomy/oscopy