Purpose Statement: The use of CT in children has increased over the past 2 decades (Mighoretti et al., 2013). With the increase in CT exposure the risk of cancer has increased. It is estimate as high as 1/500 (Hoscher et al., 2013). Hoscher et al report Chest xray imaging and chest CT imaging provided good correlation of information. However, CT chest did not change patient management but rather significantly increased patient radiation exposure. (8.7±1.1mSv versus 0.017 ± 0.002mSv, P < 0.001) (p.352). To minimize the risk of radiation exposure in the pediatric trauma patient the following imaging guideline was adapted from Denver Health and Children’s Hospital of Los Angeles.

Abdominal Trauma

Abdominal CT Indicated:
- Clinical exam suspicious for abdominal injury: tenderness, distension
- Positive FAST with stable Vital Signs
- LAP belt or handlebar sign or ecchymosis
- GCS<14
- Gross or microscopic hematuria

Microscopic hematuria is defined as urine that appears normal in color but has tested positive for blood on microscopic examination.

May Consider Abdominal CT with Attending Approval:
- Hypotension
- Initial HCT<30%
- Pelvic/Femur/Lower Rib Fracture
- Suspected Non-accidental trauma

*Hypotension is defined as SBP≤70 = (2X age in years)

Adapted from Denver Health
Pediatric CT Imaging Guideline

Pediatric Thoracic Trauma

**Normal CXR**

**Suspected Thoracic Spine Injury without neuro deficits**

**NO**

- No Additional Thoracic Imaging

**YES**

- Pneumothorax or Hemothorax
- Fracture Contusion Atelectasis
- Pneumomediastinum
- Abnormal Mediastinal Silhouette

**Follow-up CXR**

- Chest Tube
- No Additional Thoracic Imaging
- Consider Esophagram or bronchoscopy
- CT Chest or TEE

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*** Suspected Thoracic spinal cord injury = CT Chest

***Change in patient status: Re-evaluate and consider additional imaging

Adapted from Golden et al. (2016) Children’s Hospital Los Angeles
Pediatric CT Imaging Guideline

References:

