Key Injury: Spine

a) Lateral cervical spine plain X ray

- In the unstable non-responder with devastating injuries and GCS=3, who shows no evidence of extremity movement and for whom emergent transfer to surgery without CT imaging is being considered, a cross-table lateral c-spine may demonstrate atlanto-occipital dislocation or other severely displaced c-spine fracture, which portends a poor prognosis and thereby facilitates a decision not to proceed to surgery.
- A major c-spine fracture dislocation identified in this manner indicates a particularly poor prognosis in the severely head injured and/or elderly patient

b) Cervical Spine Series Radiographs

- Not indicated in the severely injured patient
- If radiography ordered based on Canadian C-Spine Rule (**Appendix G**) then minimum views needed:
  - lateral to include C7-T1
  - AP
  - Open mouth odontoid
  - Obliques not necessary

c) Standard Trauma Imaging CT Protocol

- The basic set of CT imaging that will most often be used and should be considered the starting point for CT imaging of the severely injured patient
- Includes cervical spine (non-contrast)
- See **Appendix C** for criteria for the ordering of this standard CT Protocol
- A normal CT is adequate to clear the cervical spine injury if:
  - CT of c-spine is normal, and
  - Patient is assessable neurologically (i.e., moves all four limbs), and
  - There is no clinical suspicion of cord injury

  If one or more of these conditions are not met, a neurosurgical consult for possible MRI of the c-spine should be considered.
- Abnormal CT of the c-spine can include:
  - Significant degenerative changes
  - Fracture
  - Suspected ligamentous injury
- Conduct CT c-spine if there is head injury or in elderly patients with GCS<15