Purpose Statement: To define blunt trauma pediatric patients at high-risk for BCVI in an expeditious fashion and begin treatment prior to development of neurological damage.

Background:
Blunt cerebrovascular injuries (BCVI) have an incident rate of 0.4% of blunt trauma pediatric patients. Screening of pediatric trauma patients at high risk for BCVI focuses treatment to patients at risk while minimizing unnecessary radiation exposure to individuals with low risk of injury (Azarakhsh et al., 2013).

Procedure:
The following injury patterns resulting from high energy transfer mechanism including flexion/extension injuries, high-speed MVCs, ATV accidents, Motor vehicle versus pedestrian place the patient at high risk for BCVI and are indicators to obtain neck CTA imaging.

1. LeFort II or III fractures
2. Basilar skull fracture compromising carotid canal and petrous portion of temporal bone fracture (NOT all skull base fractures)
3. Cerebral infarction or stroke
4. Cervical spine fracture compromising vertebral foramen (NOT all c-spine fractures)
5. Cervical fracture with three column instability (NOT all c-spine fractures)
6. Significant traumatic soft-tissue injury to zone 2 of neck
7. Change in neurological examination not explained by intracranial injury or other cause after severe trauma not explained by findings on routine CT brain

** Patients without any of the injuries above SHOULD NOT automatically obtain CTA, but depending upon circumstances CTA will be considered in consultation with pediatric neurosurgery **
Reference: