MONITORING & LABS	GENERAL INDICATIONS*		
SEIZURE PROPHYLAXIS	▪ Prophylactic anti-epileptic treatment is required for all severe traumatic brain injuries for 7 days if no seizure activity is documented. Keppra is the best choice for initial seizure prophylaxis. Vimpat (lacosamide), followed by Phenytoin or Fosphenytoin are second and third-line agents respectively. Given the narrow therapeutic index, multiple drug-drug interactions, and inability to obtain serum levels at Role III Facilities, Phenytoin should be used as a last resort if there are continued observed seizures, or there is a high suspicion of non-convulsive status epilepticus. ▪ Loading dose of Keppra in 1500mg followed by 1000mg BID. ▪ Vimpat loading dose of 400mg IV, followed by 200mg IV q12hrs. ▪ Phenytoin can be dosed as 20mg/kg infused at <50 mg/min or Fosphenytoin 20 PE (Phenytoin equivalent)/kg infused at <150 PE/min. The daily dose thereafter is 300 mg Phenytoin or 300 PE Fosphenytoin q HS or may be divided TID. Levels should be checked if available 30min after the loading dose and corrected for serum albumin should be between 10-20μg/mL. Dosing should then be 100mg TID and levels maintained at 10-20μg/mL.		
ACUTE SEIZURE TREATMENT	Treat acute seizure with Lorazepam 1-2 mg IV or Midazolam 5-10 mg IV. Lorazepam is preferred for IV control. If no IV access is available, Midazolam IM is as effective as Lorazepam IV.		
ANTIBIOTICS	If using antibiotic impregnated ventriculostomy, then no IV prophylactic antibiotics required. Otherwise, Ancef 1 gm IV TID while ventriculostomy is in place (neurosurgeons' discretion). For all penetrating head trauma, use cefazolin (see 3, a. 6) above.		
NURSING	Hourly neurologic assessments. Document ICP/CPP and ventriculostomy output. Notify physician of all pertinent changes.		
STEROIDS	Steroids are not recommended for head or spine trauma and should not be used.		
NUTRITION	Enteral feeding should be begun as soon as it is safe to do so. Avoid agitation/ ICP during nasal or oral tube placement. Full enteral nutritional goal ≤ 7 days.		
GENERAL MANAGEMENT GOALS (Goals may be individualized / altered by faculty according to specific patient requirements)*			
NEUROLOGIC	ICP	< 22 mm Hg	See page 13.
	PbtO2	> 20	
	CPP	> 60 mm Hg	
HEMODYNAMIC	Mean BP	Maintain to avoid ▯BP	▪ Hypotension (SBP < 90mmHg) worsens mortality. ▪ Provide a rapid physiologic resuscitation
	CVP	> 5 mm Hg	
PULMONARY	SaO2%	> 93%	Aggressive avoidance of hypoxemia
	$PaCO_2$	35 –45 mmHg in first 24 hrs/	Avoid routine hyperventilation
HEMATOLOGIC	INR	≤ 1.3	Fresh frozen plasma
	Platelets	≥ 100,000/mm^3	Platelets
	TEG	Normalized values	As indicated by results
METABOLIC	Glucose	> 80 < 150 mg/dl	Have low threshold for insulin drip; avoid D5W IVF
RENAL	Serum Osmolarity	> 280 & < 320 mOsm	See Sodium Disorders, the bottom table in this general table.
	Serum Sodium	> 138 & < 160 meq/L	
INTRACRANIAL PRESSURE MANAGEMENT*			
GENERAL MEASURES	Head in midline position, avoidance of tight cervical collars and tight circumferential ETT ties; elevate the head of the bed to 30 degrees. (Consider reverse Trendelenburg)		