For clinical signs of herniation (decreased mental status, sluggish pupil, dilated pupil, etc. due to increased ICP) or ICP>20 \times 3 \text{ min}

### 0 min

- WEBPAGE “BRAIN, CODE”→ at HC pages code pharmacist, in-house HC neuro res, HC NCC attending. At JMC, pages code pharmacist, in-house NCC res, JMC NCC attending. Code pharmacist brings brain code box w/ 23.4% saline, mannitol, neosticks (boxes are in HC SICU/Main Pharmacy, JMC NCCU/Main Pharmacy).

- PAGE NEUROSURGERY. PAGE ANESTHESIOLOGY IF NOT ALREADY INTUBATED.

### 0-5 min

- Surgical lesion? (mass, big stroke/ICH, hydro) Consider stat crani/EVD/adjust EVD.
- ABC*: intubate, SaO2>94, cardiac monitor, send stat CBC, BMP, coags
- Position: HOB at 45°, neck straight. DO NOT LAY FLAT OR PLACE IJ LINE; if central line needed place femoral central line in reverse Trendelenburg.
- MILD hyperventilation (RR 14-18), place ETC02 monitor, target EtC02 30/PaCO2 35
- Osmotx: GIVE MANNITOL (20%,1g/kg IVP, periph IV by RN) AND SALT (see below)
  - SALT: 23.4% saline (30cc IVP, central line only, by MD/NP w/ direct/phone supervision by attending/fellow) over 3min OR 3% saline 250cc IV bolus (central line wide open or good PIV over 15 min)
- CPP rx: start NS 1L bolus and 100cc/h thereafter. Keep CPP 60-110 or MAP>80 w/ phenylephrine IVP [100-200mcg (1-2 cc) of neostick at a time, by MD/NP ONLY]/drip or levophed drip. Only lower BP (nicardipine/labetalol) if bleed, impaired autoreg, or CPP>110
- Agitation/pain tx if indicated (fentanyl 25-100mcg IVP, propofol 25-50mg IVP)
- If tumor/abscess: dexamethasone 10mg IVP stat

### ICP/EXAM NOT NORMALIZED?

#### 5-10 min

- Repeat 23.4% IVP or 3% saline 250cc IV bolus
- Stat Head CT if etiology of herniation unknown. Consider decompressive crani.

#### ICP/EXAM NOT NORMALIZED?

#### 10-15 min

- Propofol 100mg IVP (may ↓BP), repeat x 1 in 2 minutes if no effect. If effective, start propofol drip & place SEDLINE; titrate to burst suppression. Consider decompressive crani.

#### ICP/EXAM NOT NORMALIZED?

#### 15-20 min

- Moderate hypothermia (32-34°C) w/ Arctic Sun or Pentobarbital 10mg/kg IV bolus over 30min. If effective, start pentobarb 3mg/kg/h x 3h then 1mg/kg/h & place SEDLINE; titrate to burst suppression. Consider decompressive crani.

#### Post rx

- Start 3% NS at 10-30cc/h, check Na q6h, goal Na 5-10 meq/L above initial sodium
- Immediately change vent to target normocarbia (PaCO2 35-40), turn down FiO2 immediately to 40% to target normoxia (PaO2<150)
- Ensure normothermia (<37.5°C) if pt not made hypothermic already
- MD must document code and administration of mannitol, 23.4%, or phenylephrine in a note