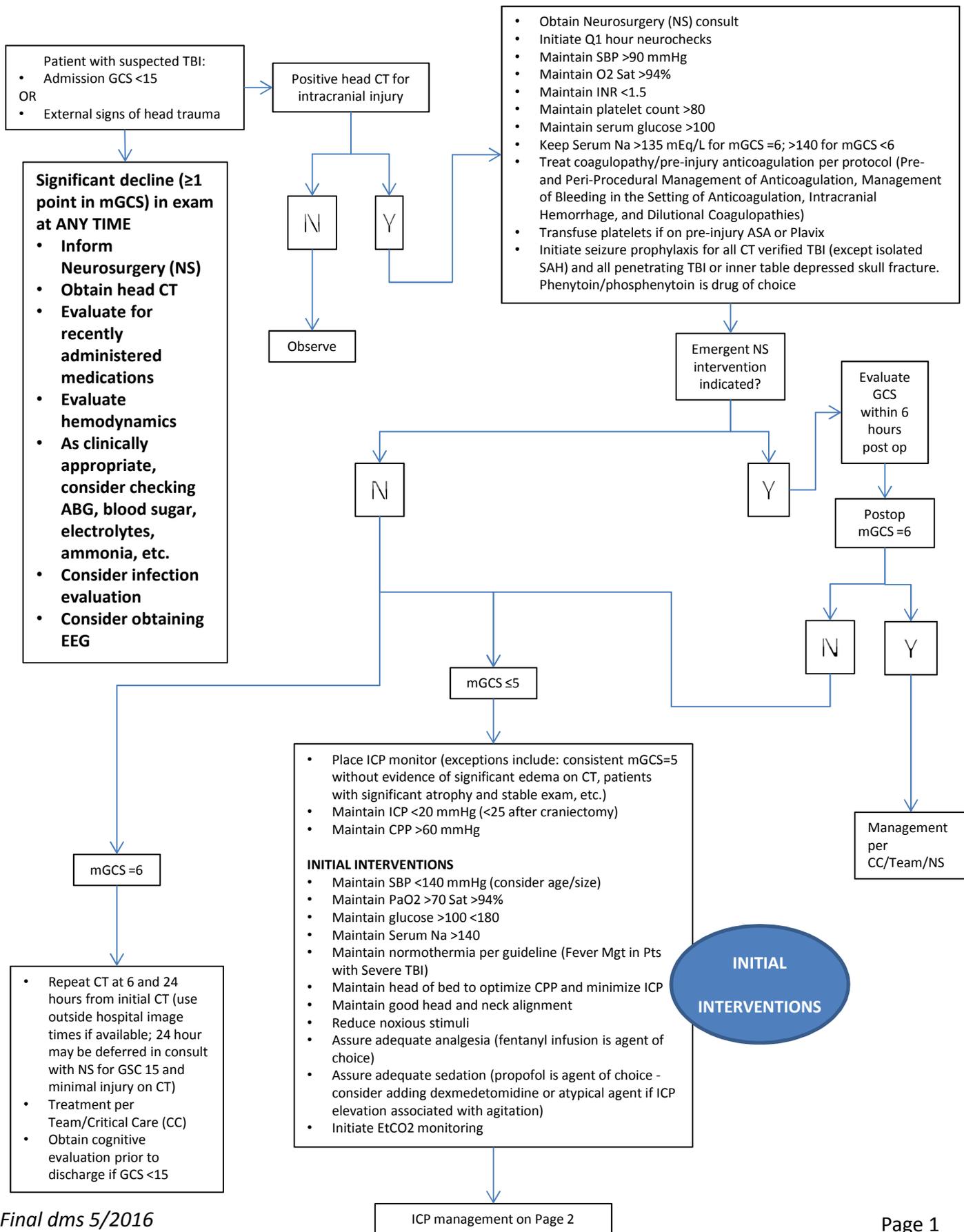


Management of the Patient with Traumatic Brain Injury

This is a general guideline only. All patient care should be individualized based on the practitioner's best judgement



Continued from Page 1

ICP >20 mmHg (>25 mmHg after craniectomy)

Y

N

Carefully remove treatment

Any ICP >20 with decline in exam of mGCS \geq 1 point or significant pupillary change

- Call NS STAT
- Obtain STAT head CT
- Assure all initial interventions are in place
- Hyperventilate to EtCO₂ 30-35mmHg
- Increase propofol as needed to max dose
- Bolus fentanyl as long as hemodynamically stable
- Administer HTS and/or mannitol

Any unexplained ICP >20

- Initiate interventions/therapies
- Consider STAT head CT
- Notify NS

Any recurrent/refractory ICP >20

- Notify NS

Ensure all initial interventions are in place
Ventilate to maintain PCO₂ 35-38mmHg
If camino in place, consider placing EVD

Increase propofol by 5 mcg/kg/min every 15 minutes to max dose 75 mcg/kg/min

Bolus fentanyl at prescribed doses (repeat PRN)

Give HTS 3% 250mL, 7.5% NaCl/NaAcetate 250mL, 23.4% 30mL (repeat PRN)

Give Mannitol 0.25 – 1.0 gm/kg (repeat PRN)

FIRST TIER THERAPIES

Intracranial hypertension refractory to initial interventions and first tier therapy
ICP >20 mmHg (>25 mmHg after craniectomy)

Y

N

Carefully remove treatment

Ensure all initial interventions are in place
Place EVD

Increase propofol to 100 mcg/kg/min

Decompressive craniectomy

Measure bladder pressure, inform trauma team if IABP >20

Short term ventilation to PCO₂ <35 (consider PBrO₂ monitor)

SECOND TIER THERAPIES

Intracranial hypertension refractory to initial interventions and second tier therapy
ICP >20 mmHg (>25 mmHg after craniectomy)

Y

N

Carefully remove treatment

Ensure all initial interventions are in place
Place EVD

Initiate Barbiturate therapy per protocol (Neurotrauma and Neurocritical Care Unit Pentobarbital Protocol). Continuous EEG mandatory

Therapeutic hypothermia to 32-34°C

THIRD TIER THERAPIES

References for Management of Traumatic Brain Injury Algorithm

Andrews PJD, Sinclair HL, Rodriguez A, et al. Hypothermia for intracranial hypertension after traumatic brain injury. *New Eng J Med*. 2015;373:2403-2412.

Bohman L-E, Levine JM. Fever and therapeutic normothermia in severe brain injury: an update. *Curr Opin Crit Care*. 2014;20:182-188.

Brain Trauma Foundation. <https://www.braintrauma.org/coma/guidelines/>
Accessed March 10, 2017

Carney N, Totten AM, O'Reilly C, et al. Guidelines for the management of severe traumatic brain injury, 4th ed. *Neurosurg*. 2016;0:1-244.

Hutchinson PJ, Koliass AG, Timofeev IS, et al. Trial of decompressive craniectomy for traumatic intracranial hypertension. *New eng J Med*. 2016; 375(12):1119-30. doi: 10.1056/NEJMoa1605215.

Stocchetti N, Maas AIR. Traumatic intracranial hypertension. *New Eng J Med*. 2014;370:2121-2130.