



SAMPLE ADMISSION ORDERS FOR MILD TRAUMATIC BRAIN INJURY

The following orders comprise a safe approach to the admission and monitoring of a patient with a mild Traumatic Brain injury who does not require transfer to a Trauma Center (Refer to Mild Traumatic Brain Injury Transfer Guideline posted on the Maine EMS website www.maine.gov/ems). These orders are an *outline*, and should be modified as needed to conform to individual hospital rules or requirements, or to align with specific patient conditions.

If any patient with mild TBI requires admission for observation or associated concerns (e.g., syncope workup, fall risk assessments, etc.), the on-call Trauma Surgeon at the Regional Trauma Center may be enlisted as needed to discuss the risks and benefits of transfer vs. local care.

1. **Admit to:** Inpatient floor / ward
2. **Dx:** Traumatic brain injury (*include associated conditions as appropriate: r/o syncope, fall risk assessment, etc.*)
3. **Condition:** Fair
4. **Vitals Signs:**
 - q__ hour (BP, HR, RR, SpO₂);
 - q__ hour neuro checks, including GCS
5. **Activity:** (*as indicated by Attending Physician discretion and/or fall risk assessment*)
6. **Nursing:** Notify Provider for
 - HR < 60 or > 120, or
 - RR < 10 or > 30, or
 - BP < 90 or > 160 (goal SBP is between 120 and 160), or
 - Neurologic changes: e.g GCS drop of two or more points; change in pupil symmetry or reactivity; increased unexplained somnolence, seizures, emesis; increased headache not relieved by oral analgesics ⁱ
7. **Diet:** As tolerated (*if any acute CT findings, then clear fluids only pending planned reassessment or reimaging*)
8. **Meds:**
 - Hold aspirin, antiplatelet drugs and anticoagulants, including Plavix, heparin, warfarin/Coumadin.^{ii iii}
 - PO analgesic (physician discretion) PRN (avoid NSAIDS if possible)
 - Short-term anticonvulsant therapy if CT evidence of cerebral contusion, or if evidence of seizure since injury event ^{iv}
9. **Labs:** if not already done in Emergency Department: CBC, PT, PTT, INR, electrolytes. Obtain Thrombin Time if patient has been taking dabigatran (Pradaxa).
10. **Radiology:** Follow-up CT scan of brain without contrast (“evaluate for progression of traumatic brain injury”) in
 - 6 hrs,
 - 8 hrs,
 - 12 hrs, ^{v vi vii} or
 - N/A



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When Planning to discharge the patient from the hospital, consider the following:

- If the follow-up CT scan remains unchanged or is improved (no enlargement of or new hemorrhages, no midline shift or signs of brain compression) and the patient's neurological status remains stable, then he/she may be discharged home if other discharge criteria are met.
- Other discharge criteria include the ability to eat and drink without vomiting, and the ability to ambulate and manage ADLs in a safe and appropriate manner.
- Patients should be discharged home under the supervision of a responsible adult who should stay with them for the first 24 hours.
- Flying in commercial aircraft is OK after discharge from observation if all discharge criteria have been met.
- Patients should be advised to not drive, operate heavy machinery or engage in heavy/risky exercise or activities (e.g.: contact sports, swimming, cycling, SCUBA diving, surfing, etc.) for six (6) weeks. They should follow-up with their PCP for a routine medical check within one week.
- Outpatient follow-up (based on phone-consulting neurosurgeon/trauma surgeon's recommendations)
 1. Follow-up with neurosurgeon or trauma surgeon is not required, unless it was specifically requested during the initial telephone consultation.
 2. Patients with minimally displaced skull fractures or pneumocephalus may follow-up with their Primary Care Physician.
- Patients should return promptly to the Emergency Department should they experience seizures, protracted vomiting, worsening headaches, visual disturbances, changes in peripheral sensation, etc.

ⁱ Persistent deterioration in mental status or GCS score (drop of two or more points) should also prompt a call to the trauma center for further discussion and probable transfer.

ⁱⁱ In general, all pre-injury medications can be continued during the period of observation unless they inhibit coagulation or platelet function. In most cases, patients with CT-documented head injury who were taking these drugs at the time of injury or who have documented clotting abnormalities should be transferred to the trauma center and should not remain at the referring facility for observation.

^{iii,iii} Anticonvulsants are indicated for a one week period if patient has cerebral contusion on CT scan, or if the patient had a documented post-traumatic seizure. Anticonvulsant agents indicated for post-traumatic seizure prophylaxis are phenytoin (preferred) or levetiracetam (Keppra). The usual adult maintenance dose of phenytoin is 100mg PO TID after appropriate initial loading dose. Please consult your pharmacy guide for details in dosing and dose adjustments, monitoring of levels, side effects and contraindications.

^v The interval between original CT scan showing the brain injury and the follow-up scan will vary according to the severity and type of injury. Subdural and epidural hematomas should be re-imaged after a shorter interval (6-8 hours) in comparison to subarachnoid hemorrhages (8-12 hours).

^{vi,vii} Significant enlargement or progression of the injury on follow-up CT scan should prompt a call to the trauma center to discuss best management options (i.e. possible transfer to the trauma center) even if the patient's clinical condition is unchanged or improved.