

## Traumatic Brain Injuries

The CDC estimates that there are 1.7 million traumatic brain injuries (TBI) a year, with 275,000 that are severe enough to require hospitalization and 52,000 resulting in death. Falls are the leading cause of TBI in those over 75, while motor vehicle, motorcycle and bicycle crashes are the leading cause of these injuries in those under 75.

**Prehospital care and management** are extremely important in these injuries. Persons suspected of TBI should be assessed and managed according to the standards of practice for Advanced Trauma Life Support. They should be transported to the closest trauma center or closest facility to be stabilized. Glasgow Coma Scale (GCS), post-traumatic amnesia and other neurologic signs should be assessed and documented.

**In the emergency room**, anyone with a GCS less than 15 should be immediately assessed by the triage nurse and assessed within 10 minutes by a health care provider with experience in this area. It is imperative to assess for hypotension (low blood pressure) and hypoxia, both of which are important determinants in the ability to get oxygen to the brain.

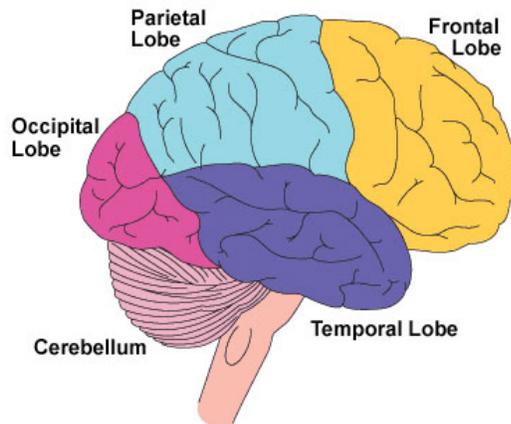
A head CT is the imaging of choice in those suspected of a TBI and should be done as soon as possible, prior to admission. If the patient has a severe head injury, neurosurgical consultation should not be delayed for any imaging.

**Once hospitalized, a head CT should also be immediately requested with any of the following:**

- Any deterioration in condition
- A GCS score of 13 or 14 (out of the normal 15) two hours after injury
- A suspected open or depressed skull fracture
- More than one episode of vomiting

In addition to the above, a CT should be immediately requested for adults with any of the following risk factors who have experienced an injury to the head with some loss of consciousness or amnesia:

- Age over 65
- Coagulopathy (history of bleeding, clotting disorder and on Coumadin or Lovenox)
  - A high-risk mechanism of injury such as a pedestrian hit by a vehicle, occupant ejected from a vehicle or a fall from a height of greater than 3 feet or 5 stairs.



### **Criteria for admission** include:

- A decreasing GCS score
- Clinically significant abnormalities on imaging
- A GCS of less than 15 (normal) after imaging
- Any abnormal neurological signs
- Skull fracture
- A major force of injury
- Any continuing signs of concern such as vomiting, severe headaches or amnesia.

Once admitted to the hospital, **assessments of patients with a TBI should include:** vitals signs, GCS, pupil size and reactivity, movement of extremities. These should be done at least every 15 minutes until the person has achieved a GCS of 15 on two consecutive occasions. Once this has occurred the minimum frequency of assessments should be:

- Every half hour for first 2 hours, then
- Hourly for 4 hours, then every 2 hours thereafter.

**An urgent reassessment by a physician** should occur if any of the following signs of neurological deterioration occur:

- Development of agitation or abnormal behavior
- A drop of more than one point in GCS score for more than 30 minutes.
- Any drop of more than two points in the GCS score.
- Development of severe/increasing headache or persistent vomiting

- New or evolving neurological signs or symptoms
- Facilities should establish and follow procedures for safe handling of potentially contaminated medical equipment. Reusable medical equipment should be cleaned and reprocessed appropriately prior to use on another patient, and equipment that is labeled for “single- patient use” should be appropriately discarded after use.

**Source:** National Guideline Clearinghouse, “Guideline Summary: Traumatic Brain Injury: Diagnosis, Acute management and Rehabilitation: Evidence-Based Best Practice Guideline Summary @ [www.guidelines.gov](http://www.guidelines.gov)

## New Infection Prevention Guidance for Outpatient Settings

Since great strides have been made with infection prevention in hospital settings in recent years, the Center for Disease Control has turned their attention in this area to the out-patient setting with the recently released “Guide to Infection Prevention for Outpatient Settings: Minimum Expectation for Safe Care”.

Highlights from this 16-page guide focus on the key components of standard precautions, including the following:

- Good hand hygiene, including use of alcohol-based cleaners and handwashing with soap and water, is critical to reduce the risk of infection in out-patient settings.
- Safe injection practices must always be followed. Healthcare personnel should use sterile technique when preparing and administering medications. Syringes and needles should not be reused either from patient to patient or to reenter medication vials.

As part of a CDC outbreak investigation at an endoscopy clinic in Nevada, providers were found to be reusing syringes to enter vials of propofol to obtain additional doses during a procedure. This practice contaminated the contents of the vials and those single-dose vials, which should have been discarded at the end of the procedure, were then used on subsequent patients. This unsafe practice lead to the transmission of Hepatitis C to at least 7 patients on 2 separate days and more than 40,000 patients were notified that they may have been exposed to a blood-borne virus.

*Source: www.CDC.gov, “Guide to Infection Prevention for the Out-patient Settings: Minimum Expectations for Safe Care”, May 2011.*

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