Implementation of a Nurse-Driven Hotline and Emergency Department Observation Protocol For Management of Mild TBI Patients

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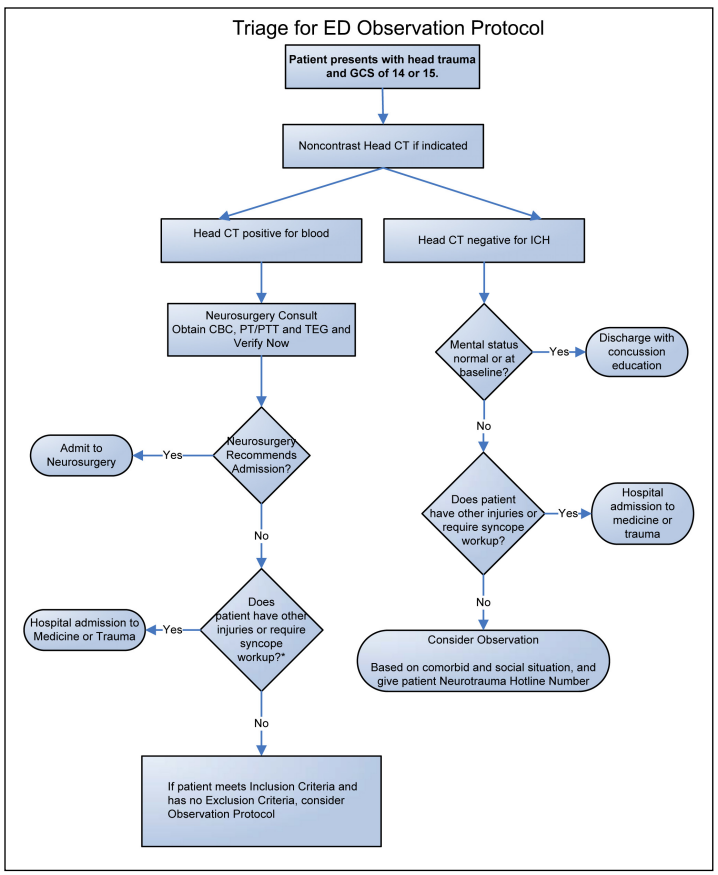
Introduction

There are 2.5 million emergency department (ED) visits, 282,000 hospitalizations, and 56,000 deaths related to traumatic brain injury (TBI) each year in the United States (US). Over 80% present with a Glasgow Coma Scale (GCS) score of 13-15, an injury that is characterized as mild. The prognostic uncertainty of CT-identified intracranial hemorrhage in this mild patient population has resulted in wide variations in patient management. Our institution has developed and implemented an observation protocol for patients with complicated mild TBI.



Inclusion and exclusion criteria are utilized to determine which patients are eligible for our Observation protocol.

Inclusion Criteria	Exclusion Criteria
Adult patients with isolated head injury	INR >1.5 or taking Factor Xa or Direct Thrombin Inhibitor, LWMH
GCS 14 or 15	Thrombocytopenia
Normal or Abnormal Head CT*	Neurologic Deficit
Convexity subarachnoid hemorrhage	Greater than 24hrs after injury with symptoms
Punctate contusions	Syncope or other active medical comorbidities
Skim subdural	Multiple traumatic injuries

This protocol relies upon appropriate patient follow up and resources, including a nurse-led neurotrauma hotline specific to the needs of TBI patients.

Observation Protocol Discharge Goals
Education regarding concussions and mild TBI
Medication reconciliation, specifically antiplatelet and antithrombotic medications
Return to Work / School / Play requirements and recommendations explained
Patient will be discharged to care of family or friends (verified 24hrs of supervision)
Patient is sober
Serial head CTs without progression of hemorrhage
Patient has been evaluated by Chief Resident or Attending Neurosurgeon
Neurotrauma Nurse Navigator notified, and follow-up appointment in TBI Clinic arranged
Patient given TBI Hotline Information

Methods

We retrospectively reviewed calls to the neurotrauma hotline over an 18-month period (January 2016 to June 2017). In addition to patient demographic information and utilization of our observation protocol, we describe caller demographics, the needs of the callers, whether the call was answered live, and the outcome of each call.

Results

Over an 18-month period, there were 1,742 calls to the hotline, with 388 repeat callers, representing 1,354 unique patients. Of those, 58.1% were male, and median age was 40 years. Calls were answered live 30.3% of time. Calls were from patients, family or friends, internal providers, or outside providers (Figure 1). The purpose of the call was most frequently for advice or for an appointment (Figure 2).

Figure 1: Type of Caller

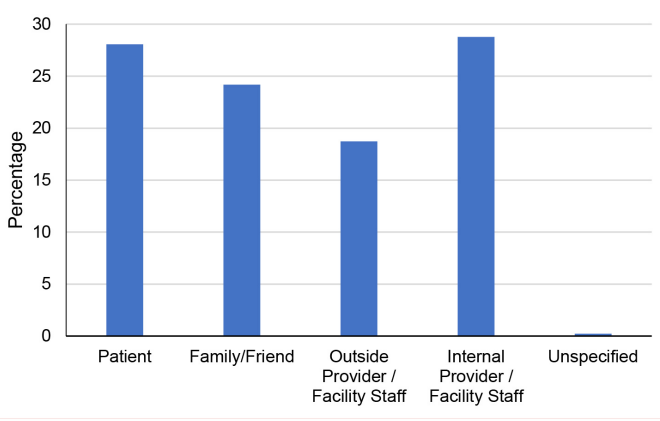
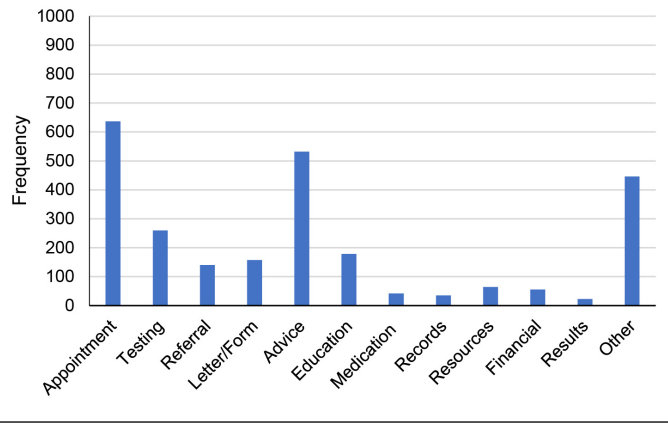


Figure 2: Outcome of Call



Conclusions

There was widespread utilization of our nurse-driven neurotrauma hotline. The neurotrauma hotline facilitated TBI patient navigation through our hospital and outpatient system. Other institutions may wish to adopt similar practices for best resource utilization, and can expect that the majority of hotline calls will be for appointment scheduling or clinical advice.