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Glasgow Coma Scale

How to Improve and Enhance Documentation

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ABSTRACT

The Glasgow Coma Scale (GCS) is an international tool used to measure the level of consciousness for traumatically injured patients. One Level I and 3 Level II Trauma Centers in our Health Care System perceived a deficiency in the documentation of the GCS. An audit was performed and insufficient documentation was confirmed. An educational plan was developed and implemented to improve documentation. A reaudit was performed to determine the success of these interventions. Although improvement was demonstrated, additional action was taken to enhance documentation in the electronic medical record.

Key Words

Documentation, Electronic medical record, Glasgow Coma Scale, Neurological assessment

The Glasgow Coma Scale (GCS) is a required data element in the Illinois Trauma Registry. Trauma nurse coordinators from 1 Level I and 3 Level II trauma centers noted that the GCS was unable to be reported in the registry because of the lack of documentation of the numeric values. A retrospective chart audit was performed. Once the deficiency was confirmed, an educational plan was developed and implemented to address areas for improvement in the documentation of the neurological assessment utilizing the GCS.

RATIONALE

The GCS is significant as it is an internationally recognized tool for the management of unconscious and/or head-injured patients. Worldwide, it is the instrument most often used to assess level of consciousness and severity of brain injury.[1,2] The GCS has been the gold standard of neurological assessment for trauma patients since its inception, according to Fischer and Mathieson.[3]

Communication between health care professionals is vital to provide quality patient care. The GCS was adopted to enhance communication among practitioners by providing a common language to report neurological findings based on observations obtained at the bed side.[3]

Nurses have a frontline presence at the bedside to monitor the GCS with initial and repeat assessments, allowing them to identify trends in neurological examinations and take appropriate actions. Therefore, registered nurses must understand correct usage of the GCS. Accurate, consistent assessment of a patient with impaired consciousness is crucial to determine improvement or deterioration in a patient's condition.[4] Timely and early interventions have the potential to improve patient outcomes. As an established standard of care for the trauma patient, the GCS is taught in nursing education, is found on trauma and neurological assessment forms, is embedded in the primary survey, and is an expected assessment by prehospital providers. These measures validate the critical importance of the nurses' documentation of the GCS.

METHODS

A retrospective chart review of data collected from the trauma registry and chart audits was performed to substantiate a deficiency in documentation of the GCS.

Inclusion Criteria

The following are the data points utilized in the selection of charts for the audit.

- Trauma patients aged 16 years and older presenting to the emergency department (ED)
- Noncategorized patients: In the state of Illinois, category 1 patients are based on specific physiological parameters and category 2 patients are based on various mechanisms of injury. Noncategorized patients do not meet categorization criteria.
- Diagnostic E-codes included the following:
  – 850.0 = Concussion with no loss of consciousness (LOC)

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– 850.1 = Concussion with brief LOC
– 850.2 = Concussion with moderate LOC
– 850.5 = Concussion with LOC, unspecified duration
– 850.9 = Unspecified concussion

- ED disposition: admitted, surgery, transferred, or death
- N = 15 records per calendar year, randomly selected from registry query
- Beginning with calendar year January 2008
- Posteducation query performed 2010
- GCS documentation site added to primary assessment, reevaluated October 2011 to September 2012

Eye Opening Response	
• Spontaneous – open with blinking at baseline	4
• To verbal stimuli, command, speech	3
• To pain only (not applied to face)	2
• No response	1
Verbal Response	
• Oriented	5
• Confused conversation, but able to answer questions	4
• Inappropriate words	3
• Incomprehensible speech	2
• No response	1
Motor Response	
• Obeys commands for movement	6
• Purposeful movement to painful stimulus	5
• Withdraws in response to pain	4
• Flexion: decorticate posturing	3
• Extension: decerebrate posturing	2
• No response	1
Total	

Figure 1. Glasgow Coma Scale.

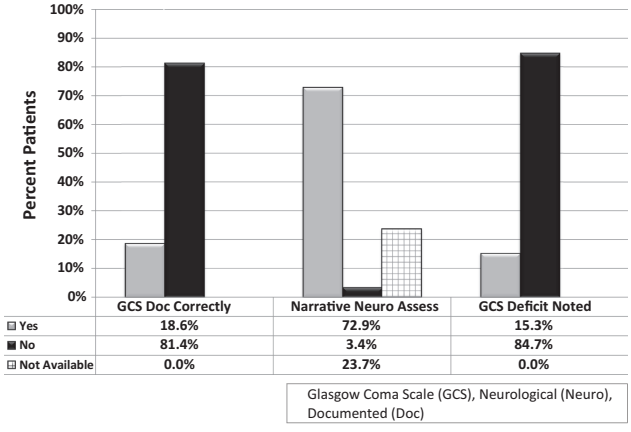

Figure 2. Glasgow Coma Scale added to primary assessment 2012.

RESULTS

Initial Findings

A correctly documented GCS consists of 3 elements: best eye opening response, best verbal response, and best motor response (Figure 1). The score is a numerical value ranging from 3 to 15. The initial survey revealed that less than 20% of the head-injured trauma patients had a GCS documented correctly utilizing all 3 elements (Figure 2).

DISCUSSION

Education and Actions

An educational plan was developed and implemented to address the lack of GCS documentation. Multiple teaching strategies were employed and written materials were developed. These were in the form of posters, GCS scenarios with competency tests, and reminder memos. This education was presented at skills day, unit staff meetings, new staff orientation, individual training, and posted in various locations on the unit. These assorted educational presentations were concluded with giving the staff GCS cards that they attached to their ID badges for a quick reference. All these actions were supported by research that demonstrated that both lecture and poster methods promote knowledge acquisition and retention and learner satisfaction.[5]

Staff indicated that the best educational offerings were the face-to-face interactions. The distribution of the GCS ID badge cards had a sustained impact as staff continues to refer to them. Although posters and reminders were a good visual cue, these interventions proved to be the least effective as they tended to be overlooked. Our recommendation is to implement various educational opportunities that address multiple learning styles by offering one-on-one or small group lessons.

SECONDARY RESULTS

Posteducation Findings

After multiple educational offerings, there was an overall increase from 18.6% to 40% in the use of the GCS tool (Figure 3). In discussions with staff, it was discovered that it took numerous screens to locate the GCS tool in the electronic medical record (EMR). The information technology department was consulted and the GCS tool was added to the nurse's primary assessment screen of the EMR. This change in documentation location was distributed to the staff via the EMR by a memo banner and staff alert message. After relocation of the GCS tool, compliance of documentation by nurses markedly increased from 40% to 85% (Figure 4).

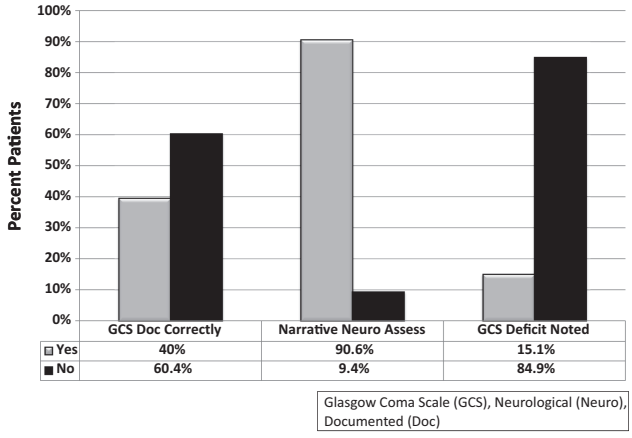

Figure 3. Posteducation Findings 2010.

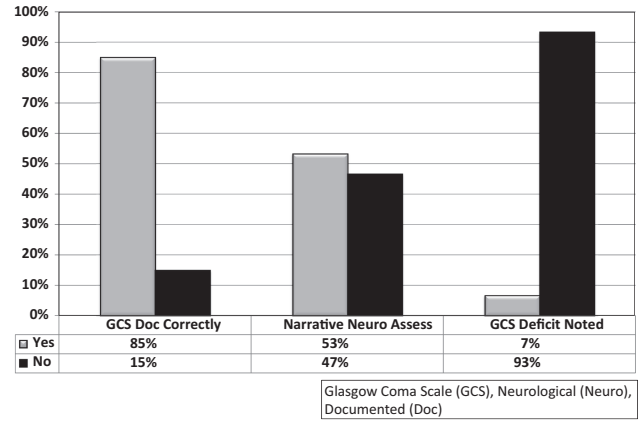

Figure 4. Glasgow Coma Scale added to primary assessment 2012.

CONCLUSIONS

Narrative Neurological Documentation

Narrative neurological documentation was also surveyed in 2010 and again in 2012. Findings demonstrate that 91% of noncategorized head-injured trauma patients had some form of neurological assessment documented by the nurses. After the addition of the GCS to the primary assessment screen, 95% of patients had a neurological assessment in the form of a GCS and/or narrative documentation. This demonstrated that nurses documented neurological assessments in one of these formats.

Summation

The GCS tool allows the practitioner to communicate with other health care professionals assessing the same parameters using a universal vocabulary. With improved communication and documentation, changes in the level of consciousness can be identified early and interventions can be provided promptly, resulting in improved patient outcomes.

The ED staff expressed ease of documentation with relocation of the GCS tool to the primary assessment screen of the EMR. In this more prominent and convenient location, usage of the GCS tool and compliance of documentation increased. In addition, relocation of the tool reduced time spent at the computer, providing more time for direct patient care and possible enhancement of nurse productivity.

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