

Trauma MedEd

The Value Of Protocols

This issue is the first of two dedicated to protocols. All trauma centers have protocols. Most have a massive trauma protocol. Many have pain management or alcohol withdrawal or a number of other protocols. But why do we need protocols? Can we show some benefits to using them?

I've looked at the literature, and unfortunately there's not a lot to go on. Here are my thoughts on the value of protocols.

- In my view, there are a number of reasons why protocols need to be developed for commonly encountered issues.
- They allow us to build in adherence to any known practice guidelines or literature.
- They help conserve resources by standardizing care orders and resource use.
- They reduce confusion. Nurses do not have to guess what cares are necessary based on the specific admitting surgeon.
- They reduce errors for the same reason. All patients receive a similar regimen, so potential errors are more easily recognized.
- They promote team building, particularly when the

protocol components involve several different services within the hospital.

- They teach a consistent, workable approach to our trainees. When they graduate, they are familiar with a single, evidence based approach that will work for them in their practice.

A decade ago, we implemented a solid organ injury protocol here at Regions Hospital. I had noted that there were large variations in simple things like time at bedrest, frequency of blood draws, how long the patient was kept without food and whether angiography should be considered. Once we implemented the protocol, patients were treated much more consistently and we found that costs were reduced by over \$1000 per patient. Since we treat over 200 of these patients per year, the hospital saved quite a bit of money! And our blunt trauma radiographic imaging protocol has significantly reduced patient exposure to radiation.

Bottom line: Although the proof is not necessarily apparent in the literature, protocol development is important for trauma programs for the reasons outlined above. But don't develop them for their own sake. Identify common problems that can benefit from consistency. It will turn out to be a very positive exercise and reap the benefits listed above.

TRAUMA CALENDAR OF EVENTS

SOCIETY OF TRAUMA NURSES 16TH ANNUAL CONFERENCE

PLACE: CAESAR'S PALACE, LAS VEGAS, NV

DATE: APRIL 3-5, 2013

ATLANTICARE REGIONAL MEDICAL CENTER TRAUMA SYMPOSIUM

PLACE: BALLY'S HOTEL & CASINO, ATLANTIC CITY, NJ

DATE: MAY 20-22, 2013

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How To Use This Issue

The protocols provided in this issue should be used as a basis for developing your own. I would be flattered if you used them as is, but every trauma program is different. It's not possible to use a one-size-fits-all approach to protocol implementation. So use this information as a framework and customize it to fit the infrastructure of your program.

Each item in this issue will briefly describe the purpose of the protocol and literature references (if they exist!). This will be followed by download information, in two forms. The first is a Quick Response (QR) code for use on handheld devices, and the second is a standard web URL for those using desktops or laptops.

In order to use the QR codes, you must have a QR reader on your handheld device. These are available for all operating systems and all sizes (phone, tablet, etc). Just snap the code, and the pdf file for the protocol will load. You can save it or email it so that it can be opened on other platforms.

The web URLs were created using the URL shortening service bit.ly. Instead of having to type in a ridiculously long and potentially misspelled address, the URL is very short. However, the 6 letters found after the **http://bit.ly/** portion are case sensitive, so be sure to capitalize the appropriate letters.

ED Extubation

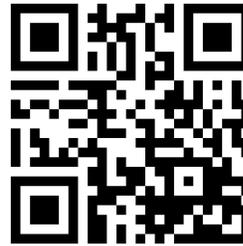
Many patients are intubated in the emergency department who need brief control of their airway or behavior. In some cases, the condition requiring intubation resolves while they are still in the department. Most of the time these patients are admitted, typically to an ICU bed, for extubation. This is expensive and uses valuable resources. Is it possible to safely extubate these patients and possibly send them home?

Maryland Shock Trauma and Mount Sinai Medical Center looked at their experience with extubating selected patients in the ED. They looked at a series of 50 patients who were intubated for combativeness, sedation, or seizures. A specific protocol was followed to gauge whether or not extubation should be attempted.

None of the patients who were extubated per protocol required unplanned reintubation. One patient underwent planned reintubation when taken to the OR for an orthopedic procedure. 16% of patients were able to be discharged home from the ED.

Bottom line: A subset of patients who are intubated in the emergency department can be extubated once the inciting factor has resolved. These factors include sedation for painful procedures and combativeness. Following this protocol can reduce admission rates and reduce the use of scarce intensive care unit resources.

Reference: Trauma patients can be safely extubated in the emergency department. J Emerg Med 40(2):235-239, 2011.



Scan the QR code, or enter this URL in your browser:
<http://bit.ly/kQBwKw>

CIWA Demystified

What exactly is the CIWA protocol? Besides one of the most visited pages on this blog?

It's a tool used commonly in the US that helps clinicians assess and treat potential alcohol withdrawal. A significant amount of injury in this country is due to the overuse of alcohol. A subset of these patients are admitted and do not have access to alcohol. They may begin to withdraw within a few days, and this condition can lead to dangerous complications.

The Clinical Institute Withdrawal Assessment (CIWA, get it?) measures 10 items that are associated with withdrawal:

- Nausea / vomiting
- Anxiety
- Paroxysmal sweats
- Tactile disturbances (itching, bugs crawling on skin, etc)
- Visual disturbances

- Tremors
- Agitation
- Orientation
- Auditory disturbances
- Headache

All items are measured on a scale of 0-7 with the exception of orientation, which uses a scale of 0-4. All subscores are tallied to arrive at the final score.

The total score is used to determine whether benzodiazepines should be given to ameliorate symptoms or avoid seizures. Typically, a threshold is selected (8 or 10) and no medications are needed as long as the patient is under it. Once it is exceeded, graduated doses of lorazepam or diazepam are given and vital signs and CIWA scores are repeated regularly. The protocol is discontinued once the patient has three determinations that are under the threshold.

Unfortunately, it is possible to take this protocol too far. A retrospective review of registry patients who received CIWA guided therapy was performed. A total of 124 records were reviewed for appropriateness of CIWA use and adverse events. They found that only about half of patients (48%) met both usage criteria (able to communicate verbally, recent alcohol use). And 31% did not meet either criterion! There were 55 nondrinkers in this study, and even though 64% of them could communicate that fact, they were placed on the protocol anyway! Eleven patients suffered adverse events (delirium tremens, seizures, death). Four of them did not meet criteria for use of the protocol.

Bottom line: In order to be placed on the CIWA protocol, a patient must have a recent history of alcohol use, and must be able to communicate verbally. Some physicians assume that patients with autonomic hyperactivity or psychological distress are withdrawing and order the CIWA protocol. This can cover up other causes of delirium, or may make it worse by administering benzodiazepines. This represents inappropriate use of the protocol!

Reference: Inappropriate use of symptom-triggered therapy for alcohol withdrawal in the general hospital. Mayo Clin Proc 83(3):274-279, 2008.



Scan the QR code, or
enter this URL in your browser:
<http://bit.ly/bcR48n>

TBI Screening

Traumatic brain injury (TBI) is an extremely common diagnosis in trauma patients. The majority are minor concussions that show no evidence of injury on head CT. Despite normal findings, however, a short conversation with the patient frequently demonstrates that they really do have a TBI.

Scoring systems can help quantitate how significant the head injury is. The Glasgow Coma Scale (GCS) score is frequently used, but is not sensitive enough for minor head injuries, since a patient may be perseverating even with a GCS of 15.

About 15 years ago, our trauma center noted that a number of patients would return for a followup visit for other injuries, but complain of symptoms that are classic for post-concussive syndrome. We integrated a simple TBI screen into our admission order set, and nurses were trained to administer the test. The Short Blessed Test (SBT) is a 25 year old scoring system for minor TBI that has been well-validated. It takes only a few minutes to administer, and is very easy to score.

The most important part of the administration process is choosing a threshold for further evaluation and testing. We administer this test to all trauma patients with a suspected TBI (defined as known or suspected loss of consciousness, or amnesia for the traumatic event). If the final score is >7, we refer the patient for more extensive evaluation by physical and occupational therapy. If the score is 7 or less but not zero, consideration is given to offering routine followup in a minor neurotrauma clinic as an outpatient. In all cases, patients should be advised to avoid situations that would lead to a repeat concussion in the next month.

Reference: Katzman R, Brown T, Fuld P, Peck A, Schechter R, Schimmel H. Validation of a short Orientation-Memory-Concentration Test of cognitive impairment. *Am J Psychiatry*. 1983 Jun;140(6):734-9.



Imaging In Blunt Trauma

The choice of proper radiographic imaging is challenging. If you query a dozen trauma professionals, you'll get nearly as many different answers as to what constitutes an adequate radiographic evaluation.

Last year, we developed an evidence-based protocol to help us decide what radiographic images to order in our blunt trauma patients. For some body regions, there is fairly good literature available for guidance (i.e. Canadian head and cervical spine rules). For other areas, there is not nearly as much. We convened a small group of people, including trauma surgeons, emergency physicians, radiologists and a radiation physicist to combine the available information into a practical tool.

We looked at 229 patients who had their imaging performed according to the new protocol during a 3 month period and compared them to 215 patients who were imaged the previous year. Each scan administered to each body area (head, chest, abdomen/pelvis, c-spine, t-spine, l-spine, face, neck angio) were tabulated separately.

We found that the overall number of scans performed decreased significantly. We looked at our data and generated numbers per 100 patients. During the control period, we did 298 CT scans per 100 patients. This decreased to 271 during the study period. The number of head scans remained the same (82 per 100 patients

during control, 85 per 100 during the study), as did the cervical spine scans (84 vs 86).

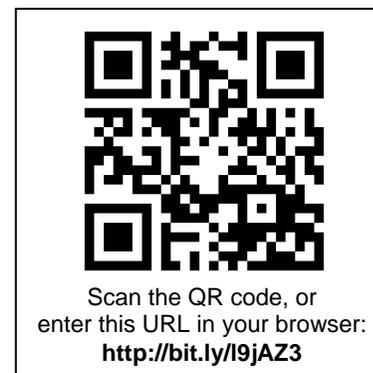
The biggest declines were seen in chest CT (53 per 100 control vs 33 per 100 study) and abdominal CT (57 vs 43).

We did see an increase in conventional xrays of the thoracic and lumbar spines to offset the absence of reformatted spine images that would have been generated from the chest and abdominal CT scans. We also noted small increases in CT of the head, cervical spine, and neck angio. This was likely due to better adherence to specific guidelines.

Bottom line: we believe that our work shows that careful adoption of well thought out guidelines can make a difference in practice and significantly decreases radiation exposure in our blunt trauma patients.



Worksheet



Bibliography

Next Month – Protocols Part 2
Chest tube management – adult & pediatric
Solid organ injury – adult & pediatric
Cervical Spine Clearance – adult & pediatric
And More!



www.TheTraumaPro.com



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