

# PEDIATRIC TRAUMA UPDATE

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## UPDATE ON PEDIATRIC TRAUMA

University of Iowa Hospitals and Clinics was first verified as a Level I Trauma Center, Adult and Pediatric in 1997 and has continued to hold that designation both nationally and as a part of Iowa's Trauma System.

In 2006, new trauma center verification criteria were published by the American College of Surgeon's Committee on Trauma. These new criteria put a much more stringent and separate focus on Pediatric Trauma and the resources needed to provide that care. In fact, in order to remain a Level I Pediatric Trauma Center, we must now undergo a separate re-verification process that will result in a separate certificate of verification for UI Children's Hospital.

To meet these requirements several changes were made regarding personnel:

- Dr. Shilyansky was named the Pediatric Trauma Medical Director
- Kristel Wetjen RN, was name the Pediatric Trauma Nurse Coordinator

We hope to have our verification visit in October of 2008. At this time it is our understanding that when we are verified Level I Pediatric Trauma Center we will be the only such center in the state of Iowa.

This will allow us to be the leading center in the care of traumatically injured children. Pediatric Trauma care requires a team approach and University of Iowa

Children's Hospital is a spectacular team.

We hope that this newsletter is a means of keeping you and your service involved in pediatric trauma, answers a few questions and provides you with some interesting education.

Enjoy and Thank You!

### ***Pediatric Trauma Cases February 2008***

Number of admissions	18
Number of ER Visits	20
Mean Injury Severity Score	12.7
Number of Trauma Alerts	5
Number of Trauma Activations	2

### **Special points of interest:**

- Pediatric Trauma Meeting was held 2/19. Thanks to all who attended. We look forward to seeing you all again in April.
- Development of C-spine protocol for children is in the works. Please provide feedback as drafts are distributed.
- Questions or concerns related to Pediatric Trauma Care? Contact Kristel Wetjen @ 6-8851 or page 5239 [kristel-wetjen@uiowa.edu](mailto:kristel-wetjen@uiowa.edu)



## INJURY SEVERITY SCORE (ISS)

The Injury Severity Score (ISS) provides an overall score for patients with multiple injuries. The ISS score is virtually the only anatomical scoring system in use and correlates linearly with mortality, morbidity, hospital stay and other measures of severity.

Each injury is assigned an Abbreviated Injury Scale (AIS) and is allocated to one of the six body regions (Head, Face, Chest, Abdomen, Extremities, External). Injuries are ranked on a scale of 1 to 6 with 1 being minor, 5 severe, and 6 a

nonsurvivable injury. Only the highest AIS score in each body region is used. The score of the 3 most severely injured body regions are squared and added together to produce the ISS score.

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# INJURY SEVERITY SCORE (ISS) CONT.

ISS score values range from 0-75. If an injury is assigned an AIS of 6, the ISS score is automatically assigned to 75.

This scores weaknesses are:

- Any error in AIS scoring increases the ISS error.
- Many different injury patterns can

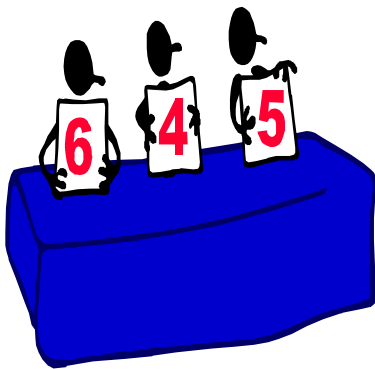
yield the same ISS score and injuries to different body regions are not weighted.

- Full description of patient injuries is not known prior to full investigation and operation, therefore the ISS is not useful as a triage tool. ISS is however useful when reviewing morbidity, mortality, length of stay and other outcomes data.

Let's figure it:

Teenager involved in a motor vehicle crash has the following injuries:

Body Region	Injury Description	AIS	Square Top 3
Head	Lt subgaleal hematoma	1	1
Face	Sm laceration	1	
Chest			
Abdomen	L5 burst fx w/ paraplegia L4 Lamina fx	5 3	25
Extremities	Rt iliac spine avulsions fx	3	9
External			
		ISS Total	35



## BE ON ALERT...WHAT IS A TRAUMA ALERT?

Trauma **alerts** notify a group of physicians, nurses and units that a patient is arriving with a serious trauma related injury. The following are the criteria for a trauma alert:

1. Ejection from automobile
2. Death in the same passenger compartment
3. Extrication time greater than 20min
4. Falls greater than 10ft
5. High speed auto crash >40mph
6. Auto-pedestrian or auto-bicycle injury >5mph
7. Pedestrian run over or thrown by a vehicle
8. Motorcycle crash greater than 20mph or with separation of rider from bike
9. Age of patient < 5
10. Cardiac or respiratory disease history
11. Pregnancy
12. Immunosuppressed child
13. Child with bleeding disorder or on anti-coagulants
14. Injuries consistent with probable admission to the Pediatric Trauma Team.

## TIME FOR AN UPGRADE, TRAUMA ACTIVATIONS

A trauma **activation** is an elevation from an alert. This level requires the attendance of the trauma faculty, radiology, anesthesia, and multiple other services. The following are the criteria for a trauma activation:

1. Glasgow Coma Scale less than or equal to 12.
2. Age specific hypotension
3. Age specific tachycardia
4. Age specific tachypnea
5. Transfer patients from other hospital receiving blood products to maintain vital signs
6. Penetrating injuries to head, neck, torso, or extremities proximal to elbow/knee
7. Flail chest
8. Combo trauma/burn
9. 2 or more proximal long bone fractures
10. Pelvic fx with hemodynamic instability
11. Limb paralysis
12. Amputation proximal to wrist/ankle
13. 3 or more patients at the same time

