APPENDIX VI: Assigning AIS Scores

1. Because the value of the AIS score varies with the severity of injury, it is important to include qualifying information in the written diagnosis description. This information can be used to confirm the value of the AIS score assigned. Detailed information should be provided in the diagnosis description, especially for injuries assigned an AIS score of 3 or greater.

2. Slight differences in the AIS score can have a profound impact on the final ISS (since calculating the ISS involves summing the squares of the highest AIS scores in three body regions). In analyses, patients are frequently grouped by ISS. Mis-grouping of injury severity can occur if the assigned AIS score is incorrect (too high or too low).

3. Do not mentally assume a single AIS value for a certain injury (e.g., flail chest = 5, concussion = 2, radius fracture = 2). There are subtle details that must be considered for each injury and could result in a higher or lower AIS score.

4. Be sure to assign the appropriate body region. Lacerations should be coded to body region EXT no matter where they're located. Make appropriate distinctions between HEAD, NECK and FACE injuries. All burns should be coded to the EXT body region, no matter what area of the body is burned.

5. Traumatic brain injuries
    a. If an anatomic lesion is identified, these scores should be considered first. If the patient also had loss of consciousness, these scores may be considered as well. Where loss of consciousness accompanies a documented anatomical lesion, the loss of consciousness should be considered only if it reflects a more serious injury than is described by the anatomical lesion alone. In these cases, the higher AIS should be assigned to the injury.
    b. In the absence of a documented anatomic lesion, only information on status of consciousness may be available. Use information related to "length of unconsciousness" first. If this information is not available, then consider the descriptions outlined under "level of consciousness".
    c. A neurological deficit is considered to be one or more of the following that was not present pre-injury: hemiparesis; hemiplegia; weakness; sensory loss; hyperesthesia; visual field defect; aphasia; dysphasia; seizure; central facial weakness or palsy; deviation of both eyes to the same side; unequal pupils; pupils fixed or not reactive.
    d. Distinguish between subarachnoid hemorrhage (AIS=3) and subdural hematoma (AIS 4 or 5). These are different anatomic lesions!
    e. When calculating the ISS, scalp lacs should be considered an external injury (EXT) not a head injury (HEAD). This can affect the ISS.
    f. Code all skull fractures under vault unless specified as basilar. Code naso-orbito-ethmoidal fracture as basilar (do not code facial fractures separately).

6. Fractures
    a. Pay attention to whether the fracture is closed vs. open. In general, open fractures score higher than closed fractures.

b. Pay attention to whether the fracture is displaced or comminuted, or if there's nerve involvement. In general, these types of fractures score higher.
c. For a pelvic fracture to receive an AIS score of 4 or higher, there must be substantial deformation and displacement with associated vascular disruption or with major retroperitoneal hematoma. If one assumes the blood volume in an average person is 5 liters, then for a pelvic fracture to be given an AIS score=5, the person must have lost at least 1 liter of blood out of the intravascular space.
d. For vertebral fractures and dislocations, consider whether there's injury to the spinal cord. If there is spinal cord involvement, differentiate between cord contusion vs. cord laceration. Then look at the degree of neurologic function (incomplete vs. complete). For incomplete cord syndrome, there is preservation of some sensory or motor function. For complete cord syndrome, there is no motor or sensory function below the level of the injury.

7. Abdomen and pelvic contents
    a. The guidelines for assigning the AIS score for increasing severity of injury are well outlined in the coding manual. When selecting an AIS score of 3 or greater, include the justification in the written diagnosis description.

8. Thorax
    a. Injuries to the diaphragm are coded to the CHEST region, not to the ABD.
    b. Cardiac contusion is scored as either AIS=1 (minor) or AIS=4 (major). To be assigned an AIS=4, the diagnosis must be substantiated by surgery, autopsy or by a documented ejection fraction of <25% (in patients with no coronary artery disease).
    c. Bilateral pulmonary contusions score higher (AIS=4) than a unilateral pulmonary contusion (AIS=3).
    d. Lung laceration, pneumothorax (PTX) and rib fractures
        i. If lung lac, PTX and rib fractures present:
            1. Code PTX under the lung lac. Code rib fractures separately. Code rib fractures based on the number and location only (i.e. do not consider the PTX when assigning the AIS score for the rib fractures).

9. Vascular injuries
    a. Higher scores are assigned to more severe injuries.
        i. Minor injuries include: incomplete transection, incomplete circumferential involvement, blood loss≤ 20% by volume (i.e. < 1 liter).
        ii. Major injuries include: complete transection, segmental loss, complete circumferential involvement, blood loss >20% by volume (i.e. >1 liter).

10. Open wounds/burns
    a. For calculating ISS, open wounds to the skin/muscles of different body areas should be assigned to the region of EXT (external) rather than the body area of location (like ABD or LEG).
    b. Traumatic amputations are assigned to the body region of location, not to EXT.
    c. Burns are scored based on degree of burn, burn location, total body surface area burn, and age of the patient.

COLORADO SPECIFIC "RULES" (based on 2/25/05 discussion)

1. For scalp or other lacerations, if the AIS = 1, then assign to the body region = EXT (external). If AIS>1, assign to the body region of location (e.g., HEAD, ABD, etc.)
2. For patients with skull fracture or intracranial injury, consider the qualifiers on page 9 of the AIS coding manual that define length of unconsciousness. Assign these codes only if it will result in a higher AIS score for the HEAD region.
3. For patients that DO NOT have a skull fracture or intracranial injury, consider the qualifiers on page 10 of the AIS coding manual that define level of consciousness. These codes should only be used if there is no skull fracture or intracranial injury. If only concussion is mentioned, use code 161000.2 and assign AIS=2.