IMEG

# First Report published 19 January 2011 (Topic 5) – Brain Injury

## TOPIC 5 - Brain Injury

Brain, spinal and brachial plexus injury can have devastating consequences with at worst, inability to lead an independent life. This needs to be properly reflected in the Scheme. These matters are complex and this section of the report and that following, on spinal injury, necessarily reflect this.

The group reviewed the Scheme's general approach to brain injury and amended the descriptors and award levels to better recognise and differentiate injury severity, associated functional deficits, dependence on others, and reduced civilian employment prospects. Where possible the descriptors are based on objectively verifiable criteria and clinical measures routinely collected in brain injury patients.

Brain injury may typically be sustained in combat, or as in civilian society, in road traffic accidents, or adventure training. There is a spectrum of severity but traumatic brain injury is the most common cause of death in young men. From 1 November 2005 until 31 March 2010 there have been 70 AFCS awards for brain injuries of all levels of severity. Of these fewer than 10 have been in Levels 1 – 4.

**AFCS Current Approach**

## TABLE 6

| Item | Level | Injury |
|---|---|---|
| 2 | 1 | Brain injury with persistent vegetative state. (a) |
| 3 | 1 | Brain injury where epilepsy is present (or where there is a high risk of epilepsy) and the claimant has reflex activity but has little or no meaningful response to the environment, no language or double incontinence double incontinence and requires full time skilled nursing care. (b) |
| 3A | 2 | Brain injury where epilepsy is present (or where there is a high risk of epilepsy) and full-time skilled nursing care is required, and the claimant has two of the following: reflex activity but little or no meaningful response to the environment, no language or double incontinence. (ab) |
| 6 | 3 | Brain injury where epilepsy is present (or where there is a high risk of epilepsy) where the claimant has limited response to the environment; substantial physical and sensory problems; and requires regular skilled nursing care. (c) |
| 8 | 4 | Brain injury where epilepsy is present (or where there is a high risk of epilepsy) where the claimant has some limitation on response to the environment; some physical and sensory problems; and one or more of cognitive, personality or behavioural problems but does not require skilled nursing care (d) |

| Item | Level | Injury |
|---|---|---|
| 12 | 5 | Brain injury with some risk of epilepsy, where the claimant has moderate physical or sensory problems; one or more of cognitive personality or behavioural problems and requires some help from others with activities of everyday living but not personal or nursing care (d) |
| 15 | 7 | Brain injury with some persisting physical or sensory problems, one or more of cognitive, personality or behavioural problems and requires occasional help from others with activities or everyday living (d) or (e) |
| 19 | 11 | Brain injury from which the claimant has made, or is expected to make, a substantial recovery beyond 26 weeks, except for residual objectively verified vertigo, (f) |
| 20 | 11 | Brain haemorrhage or stroke which has caused, or is expected to cause, persistent significant functional limitation and restriction at 26 weeks, but where there has been or is expected to be, a substantial recovery beyond that date. |
| 21 | 11 | Brain injury from which the claimant has made a substantial recovery and is able to resume work and social life with no significant physical, sensory or cognitive deficits but some residual problems with concentration and memory disinhibited mood, personality change or depression. |

**Specific Issues and Recommendations**

1. The group first confirmed that the general approach of AFCS to brain injury including use of Glasgow Coma Score as an indicator of severity was satisfactory.

2. The heading of Table 6 should be amended to Neurological disorders, including spinal, head and brain injuries.

3. **Interim Awards**. Although the Scheme time limits provide seven years to claim and in most cases service causation is rarely in doubt, many claims for brain injury are lodged within a few weeks or months of the index event. Most of these cases at claim would merit an initial interim award with review and finalisation at one to two years post initial assessment and award notification.

4. **Post traumatic epilepsy**. The current Table 6 descriptors include reference to the risk or presence of epilepsy with a footnote confirming that awards for brain injury in Levels 1, 3 or 4 include compensation for associated epilepsy

Z Table 6 also includes:

Item 9 - uncontrolled post head injury epilepsy Level 4
Item 23 - controlled post head injury epilepsy Level 12

I. We recommend that specific reference to the presence or risk of epilepsy in descriptors is removed. Anyone who sustains a head/brain injury may be at risk of epilepsy, which may be very difficult to control. Risk of epilepsy is greatest for the most serious brain injuries, attracting the highest awards and presently at Items 1 - 8 of Table 6 above. In these, compensation for epilepsy is already included in the primary award. For all other head

injury categories, an additional award for post traumatic epilepsy is paid.

II. We recommend that this approach should be maintained and the footnote "awards for brain injury in award Levels 1, 3 or 4 include compensation for associated epilepsy " should be retained.

5. **Psychological symptoms and illness**. As elsewhere in the Scheme where symptoms which do not constitute a discrete diagnosable disorder are present, they are accounted for in the basic primary injury award. If criteria for a stand alone disorder are met and this is due to service, then an additional award may be made.

6. Dizziness / balance problems are common after brain and head injury. Where head trauma occurs with or without skull fracture, labyrinthine concussion may cause hearing and/or balance symptoms. The balance symptoms usually recover spontaneously or with appropriate physiotherapy. The prognosis for tinnitus is more variable and is highly dependent on other factors, particularly severity of any hearing loss, associated injuries and psychological disorders. The prognosis for sensorineural hearing loss is poor with a low likelihood of recovery.

Benign positional vertigo of paroxysmal type is common after minor head injury. In most young patients the condition spontaneously recovers, with periods of relapse and remission, but eventual complete recovery. In some cases this may take months or years.

Fractures of the base of the skull, involving the temporal bone are of two types. Most frequently, these are longitudinal fractures which do not usually affect the inner ear, although there may be conductive hearing loss due to a ruptured tympanic membrane and associated labyrinthine concussion. Where a transverse basal skull fracture occurs this may damage the membranous labyrinth as well as the seventh and eighth cranial nerves producing permanent sensorineural hearing loss and acute onset nausea and vertigo, loss of balance and nystagmus towards the unaffected side. In unilateral fractures the balance symptoms may resolve over a few days but it may take many weeks for substantial resolution of symptoms, which occurs via central compensation. However, many will experience minor residual balance symptoms, and a minority will remain significantly impaired as a result of symptoms of imbalance. Bilateral transverse base of skull fractures result in total permanent hearing impairment and profound imbalance, which will improve to some extent with rehabilitation, but with residual significant, permanent balance problems.

**Recommendations**

I. Again because outcomes are variable, the suggested approach to compensation, when dizziness and associated symptoms are prominent, is to first identify the primary injury and then capture any functional outcomes/symptoms via another descriptor in Table 6.

II. For less profound brain injury or traumatic head injury we recommend deletion of reference to "functionally limiting or restricting impaired balance" in current descriptors at Items 22 and 29, and insertion of a new descriptor attracting a Level 11 award:

"Brain or traumatic head injury with persistent balance symptoms and other functionally limiting neurological damage or permanent sensorineural hearing loss of less than 50dB averaged over 1, 2 and 3 kHz."

7. **Care and support**. Brain injury severity is reasonably reflected by the degree of dependence

on others. The phrase “skilled nursing care” has been used in the context of military compensation for many years. Given that care and support may be delivered by family, friends and different health and social services professionals as well as nurses, it is recommended that reference to “skilled nursing care“ is deleted and replaced by “professional nursing care”, to imply care by trained accredited staff. This should be explained in the legislation. This means that Items 8, 12 and 21 in the current Table 6 tariff should be revised:

| Item | Level | Injury |
|---|---|---|
| 8 | 2 | Brain injury where the claimant has some limitation of response to the environment, substantial physical and sensory problems; and one or more of cognitive, personality or behavioural problems, requiring some professional nursing care and likely to require considerable regular support from other health professionals. |
| 12 | 4 | Brain injury where the claimant has moderate physical or sensory problems, one or more of cognitive personality or behavioural problems, requiring regular help from others with activities of everyday living, but not professional nursing care or regular support from other health professionals. |
| 21 | 8 | Brain injury from which the claimant has made a substantial recovery and is able to undertake some form of employment and social life, has no major physical or sensory deficits, but some residual cognitive deficit, behavioural change, or change in personality, alone or in combination. |

8. **Brain Injury differentiation**. A reason for a tariff based Scheme is to support consistent equitable decision-making and the different descriptors in the table should be clinically distinct. To better reflect the functional consequences of brain injury, the following amendments are recommended

I. Items 3, 3A and 6 are difficult to differentiate clinically and we recommend that the injuries currently at Items 3, 3A and 6 should be combined, with deletion of the descriptors above and replacement by a single new descriptor:

> “Brain injury resulting in major loss or limitation of responsiveness to the environment, absence or severe impairment of language function and incontinence. Requires regular professional nursing care.”

At this level of severity, a Level 1 award is appropriate.

II. At present awards for Items 12 and 15 do not attract a Band A GIP. While they do not represent the highest level of disability, it is difficult to imagine anyone fitting those descriptors who would be able to sustain any level of paid work. We recommend awards for Levels 8, 12 and 15 should be revised upward, with amalgamation of Items 12 and 15. This new descriptor should attract a Level 4 award, while Item 8 merits a Level 2.

III. We therefore recommend the following amendments to Table 6 and descriptors and award levels as set out below. Item numbers relate to numbers on present Table 6. Current Items 3, 3A and 6 are replaced by a single new descriptor at tariff 1, while similarly, current Items 12 and 15 are covered by a new descriptor at tariff 4. New descriptor at tariff 4. We also advise deletion of reference to Glasgow Coma Score (GCS) in the actual descriptors.

| Item | Level | Injury |
|---|---|---|
| 2 | 1 | Brain injury with persistent vegetative state. |
| 3, 3A, 6 | 1 | Brain injury resulting in major loss or limitation of responsiveness to the environment, absence or severe impairment of language function and incontinence. Requires regular professional nursing care. |
| 8 | 2 | Brain injury where the claimant has some limitation of response to the environment, substantial physical and sensory problems and one or more of cognitive, personality or behavioural problems, requiring some professional nursing care and likely to require considerable regular support from other health professionals. |
| 12<br>15 | 4 | Brain injury where the claimant has moderate physical or sensory problems, one or more of cognitive, personality or behavioural problems, requiring regular help from others with activities of everyday living, but not professional nursing care or regular support from other health professionals. |
| 21 | 8 | Brain injury from which the claimant has made a substantial recovery and is able to undertake some form of employment and social life, has no major physical or sensory deficits, but some residual cognitive deficit, behavioural change or change in personality, alone or in combination. |

**9. Related Injuries.**

I. **Extracerebral injury**. The Scheme needs to cover traumatic arterial injury in the neck, resulting in cerebral infarction.

II. The group agreed a new descriptor for Table 6 to replace Item 20.

"Cerebral infarction due to vascular injury in the neck, resulting in persisting impairment of function and restriction of activities." Level 12

III. Potentially the resultant cerebral deficit, and so functional impact, may be quite variable in nature and severity, and to cover the details of the functional limitation and restriction there should be again be an additional descriptor and award from revised tariff Table 6.

IV. Current Item 19 should be deleted. Should such a case present, Article 20, i.e. the ability to make a temporary award and introduce a new descriptor, would be used.

V. Non traumatic vascular injury Current Item 20 should also be deleted, as it applies to brain haemorrhage or cerebral infarction of any aetiology. Where brain haemorrhage is traumatic this should be covered by a brain injury descriptor. Where, in a balance of probabilities scheme, non-traumatic cerebral infarction or haemorrhage is accepted, since there will be a spectrum of disability and outcomes, it is recommended that these disorders are dealt with using revised Table 6.

VI. Traumatic head injury. As discussed above under Dizziness/balance problems after head injury, the final two descriptors of the current Table 6 tariff should be revised as follows:

- Item 22 of the current tariff at Level 11 should now read:

  "Minor traumatic head injury which has caused or is expected to cause functionally limiting or restricting post traumatic syndrome for more than 52 weeks."

- And Item 29 at Level 13, with no GIP becomes:

  "Minor traumatic head injury which has caused or is expected to cause functionally limiting or restricting impaired balance or post traumatic syndrome for more than 6 weeks with substantial recovery beyond that date."

VII. The term "traumatic head injury" should be retained to acknowledge concussive symptoms without permanent cerebral damage, and so less severe injury than in traumatic brain injury.

The recommended revised Table 6 Brain and Head injury table is below:

| Item | Level | Injury |
|---|---|---|
| 2 | 1 | Brain injury with persistent vegetative state. |
| 3, 3A<br>6 | 1 | Brain injury resulting in major loss or limitation of responsiveness to the environment, absence or severe impairment of language function and incontinence. Requires regular professional nursing care. |
| 8 | 2 | Brain injury where the claimant has some limitation of response to the environment, substantial physical and sensory problems and one or more of cognitive, personality or behavioural problems, requiring some professional nursing care and likely to require considerable regular support from other health professionals. |
| 12<br>15 | 4 | Brain injury where the claimant has moderate physical or sensory problems, one or more of cognitive, personality or behavioural problems, requiring regular help from others with activities of everyday living, but not professional nursing care or regular support from other health professionals. |
| 20 | 12 | Cerebral infarction due to vascular injury in the neck, resulting in persisting impairment of function and restriction of activities. |
| 21 | 8 | Brain injury from which the claimant has made a substantial recovery and is able to undertake some form of employment and social life, has no major physical or sensory deficits, but some residual cognitive deficit, behavioural change or change in personality, alone or in combination. |
| 22 | 11 | Minor traumatic head injury which has caused or is expected to cause functionally limiting or restricting post traumatic syndrome for more than 52 weeks. |
| 29 | 13 | Minor traumatic head injury which has caused or is expected to cause functionally limiting or restricting impaired balance or post traumatic syndrome for more than 6 weeks, with substantial recovery beyond that date. |

10. **Skull fractures**. Skull fractures are included in the table of fractures, Table 8, presently as set out below:

| Item | Level | Injury |
|---|---|---|
| 17 | 12 | Fracture of the skull with sub-dural or extra-dural haematoma which has required evacuation, from which the claimant has made, or is expected to make a substantial recovery within 26 weeks. |
| 32 | 13 | Fracture of skull with sub-dural or extra-dural haematoma which has not required evacuation. |
| 59 | 14 | Simple Skull fracture. |

**Recommendations**

We recommend some changes and extensions.

I. Item 17 should be retained, as above.

II. We recommend deletion of Item 32 and replacement with:

"Fracture of the skull with intracranial, extracerebral haematoma that has not required evacuation." Level 13

III. We also recommend an additional descriptor:

"Depressed skull fracture requiring operative treatment" Level 12

IV. The recommended skull fracture descriptors in Table 8 will now be:-

| Item | Level | Injury |
|---|---|---|
| 17 | 12 | Fracture of skull with sub-dural or extra-dural haematoma which has required evacuation, from which the claimant has made or is expected to make a substantial recovery within 26 weeks. |
| 32 | 13 | Fracture of the skull with intracranial, extracerebral haematoma that has not required evacuation. |
| | 12 | Depressed skull fracture requiring operative treatment. |

V. Finally we recommend that in all cases of traumatic brain injury where relevant, there should be an additional stand alone award for skull fracture.