TERMINOLOGY AND EXTENT MEASURES FOR DIGITAL HEAD AND NECK INJURY RECORDS

by

Carley Ward, PhD

Civil Engineering Laboratory
Naval Construction Battalion Center
Port Hueneme, California 93043

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For the purpose of injury research, current head and neck injury records are grossly inadequate. Records vary from one institution to another, and different terminology is used to describe the same injury. Treatment and preventative measures cannot be evaluated and often a prognosis of outcome is impossible. Without comparable injury records, even the magnitude of the head and neck injury problem cannot be accurately assessed.

Head and neck injury records need to be compiled and statistically analyzed which necessitates a conversion to digital form. Although a large volume of injury data is required because of anatomical variations and the wide range of conditions producing the injuries, current computers are more than adequate for processing the data. Even the small computers used in medical facilities could be programmed for this task.

Terminology for head and neck injury records was selected by a committee of neurosurgeons, pathologists, radiologists and researchers. This committee, sponsored by the Department of Transportation (DOT), met on three occasions (May 1977, August 1977, and April 1978) to discuss a head and neck injury recording procedure and autopsy protocol. At the last meeting the record format was agreed upon and the selected terminology is presented herein. Injury names, and anatomical structure names with position descriptors, are utilized.

The location of the injury can be specified using either large or small anatomical region names listed under LOCATOR A. (The large region name is the first entry in the LOCATOR A column.) To more accurately position the injury in the anatomical structure, optional position descriptors listed under LOCATORS B and C can be used.

Common names for injuries in the selected anatomical structure appear in the INJURY column. One name must be selected. Where indicated, an injury extent, area grade, depth grade, status, and measurement should be supplied.

The identifying numbers are listed on the left, and the card columns in which they should be entered are denoted on the right. Card Columns 1-13 are utilized.

1-4	LOCATOR A
5-7	LOCATORS B and C
8,9	INJURY name
10,11	INJURY extent, depth grade, area grade, and status
12,13	INJURY measure (length, area, or volume)

Each injury is defined by a 13 digit number, and as many of these 13 digit numbers as necessary can be used to record the injuries for a single case.

The procedure is as follows:

1. Turn to the table for injured region.
2. Select the anatomical structure name under LOCATOR A and record the number in Card Columns 1-4.
3. Select from one to three terms from LOCATOR B to indicate the position, and record these numbers in Card Columns 5-7. If the injury is in the cervical spine, LOCATOR C is selected and recorded in Card Column 7.
4. Find the injury name in the INJURY column and record the identifying number in Card Columns 8 and 9.
5. Record the appropriate grades, extents, and status numbers (listed under the injury name) in Card Columns 10 and 11.
6. Record the injury measurements in Card Columns 12 and 13 if a measurement is listed under the selected injury name.

ARTERIES

		Card Columns
LOCATOR A		1-4
0100	Arteries (unspecified)	
0101	Basilar	
0102	Branches of Cerebellar	
0103	Branches of Cerebral	
0104	Branches of Cervical	
0105	Carotid	
0106	Cerebellar	
0107	Cerebral	
0108	Cervical	
0109	Circle of Willis	
0110	Pericallosal	
0111	Vertebral	
LOCATOR B (three may be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
7	Middle	
INJURY		
01	Aneurysm	8,9
02	Displacement	8,9
	Extent	10
1	<3 mm	
2	3-10 mm	
3	>10 mm	
03	Fistula	8,9
04	Rupture	8,9
05	Spasm	8,9
	Extent	10
1	Minor	
2	Major	
06	Thrombosis	8,9
	Status	10
1	Primary cause	
2	Secondary (happened after, occurred as a result of)	
3	Unknown	
4	Unrelated to event	

CENTRAL BRAIN

		Card Columns
LOCATOR A		1-4
0200	Central Brain	
0201	Caudate Nucleus	
0202	Corpus Callosum	
0203	Fornix	
0204	Hippocampus	
0205	Internal Capsule	
0206	Lenticular Nucleus	
0207	Olfactory Tract	
0208	Optic Tract	
0209	Septum Pellucidum	
LOCATOR B (three may be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
7	Lateral	
8	Bilateral	
9	Medial/Midline	
INJURY		
01	Compression	8,9
02	Contusion	8,9
	Depth Grades	10
1	Into but not through gray matter	
2	Through gray matter not into white matter	
3	Through gray matter and into white matter	
	Area Grades	11
1	Focal or localized	
2	Moderately extensive	
3	Extensive	
03	Hemorrhage	8,9
	Extent (max. area any plane)	10
1	<1 sq cm	
2	1-2.5 sq cm	
3	>2.5 sq cm	
	Measurement (volume in cu cm)	12,13

CENTRAL BRAIN (Continued)		Card Columns
04	Hypoxic Changes (selective necrosis of neurons observed microscopically)	8,9
	Extent	10
1	Moderate	
2	Severe	
05	Infarct (tissue necrosis)	8,9
	Status	10
1	Primary cause	
2	Secondary (happened after, occurred as a result of)	
3	Unknown	
4	Unrelated to event	
	Measurement (volume in cu cm)	12,13
06	Inflammation	8,9
	Extent	10
1	Focal	
2	Difuse	
07	Laceration (include penetrating laceration)	8,9
	Extent	10
1	<1.0 cm	
2	1.0-3.0 cm	
3	>3.0 cm	
	Measurement (length in cm)	12,13
08	Neuron Tear (axonal shear)	8,9
	Extent	10
1		
2		
3		

CENTRAL BRAIN (Continued)		Card Columns
09	Petechia	8,9
	Extent	10
1		
2		
3		
10	Secondary Tract Degeneration	8,9
11	Swelling (edema)	8,9
	Extent	10
1	Moderate	
2	Severe	

CEREBELLUM

		Card Columns
LOCATOR A		1-4
0300	Cerebellum	
0301	Cerebellar Peduncle	
0302	Cerebellum Hemisphere	
0303	Cerebellum Tonsil	
0304	Corpus Medullare (deep white matter)	
0305	Dentate Nucleus	
0306	Vermis	
LOCATOR B (three may be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
7	Lateral	
8	Bilateral	
9	Medial/Midline	
INJURY		
01	Contusion	8,9
	Depth Grades	10
1	Into but not through gray matter	
2	Through gray matter not into white matter	
3	Through gray matter and into white matter	
	Area Grades	11
1	Focal or localized	
2	Moderately extensive	
3	Extensive	
02	Hemorrhage	8,9
	Extent (max. area any plane)	10
1	<1 sq cm	
2	1-2.5 sq cm	
3	>2.5 sq cm	
	Measurement (volume in cu cm)	12,13
03	Herniation	8,9
	Extent	10
1	Mild	
2	Moderate	
3	Severe (with necrosis)	

CEREBELLUM (Continued)		Card Columns
04	Hypoxic Changes (selective necrosis of neurons observed microscopically)	8,9
	Extent	10
1	Moderate	
2	Severe	
05	Infarct (tissue necrosis)	8,9
	Status	10
1	Primary cause	
2	Secondary (happened after, occurred as a result of)	
3	Unknown	
4	Unrelated to event	
	Measurement (volume in cu cm)	12,13
06	Inflammation	8,9
	Extent	10
1	Focal	
2	Difuse	
07	Laceration (include penetrating lacerations)	8,9
	Extent	10
1	<1.0 cm	
2	1.0-3.0 cm	
3	>3.0 cm	
	Measurement (length in cm)	12,13
08	Neuron Tear (axonal shear)	8,9
	Extent	10
1		
2		
3		

CEREBELLUM (Continued)		Card Columns
09	Petechia	8,9
	Extent	10
1		
2		
3		
10	Swelling (edema)	8,9
	Extent	10
1	Moderate	
2	Severe	

CEREBRUM

		Card Columns
LOCATOR A		1-4
0400	Cerebrum	
0401	Frontal Lobe	
0402	Insula	
0403	Occipital Lobe	
0404	Parietal Lobe	
0405	Temporal Lobe	
LOCATOR B (three may be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
7	Lateral	
8	Bilateral	
9	Medial/Midline	
INJURY		
01	Contusion	8,9
	Depth Grades	10
1	Into but not through gray matter	
2	Through gray matter not into white matter	
3	Through gray matter and into white matter	
	Area Grades	11
1	Focal or localized	
2	Moderately extensive	
3	Extensive	
	Measurement (volume in cu cm)	12,13
02	Fat Embolism	8,9
03	Hemorrhage	8,9
	Extent (max. area any plane)	10
1	<1 sq cm	
2	1-2.5 sq cm	
3	>2.5 sq cm	
	Measurement (volume in cu cm)	12,13
04	Herniation	8,9
	Extent	10
1	Mild	
2	Moderate	
3	Severe (with necrosis)	

CEREBRUM (Continued)		Card Columns
05	Hypoxic Changes (selective necrosis of neurons observed microscopically)	8,9
	Extent	10
1	Moderate	
2	Severe	
06	Infarct (tissue necrosis)	8,9
	Status	10
1	Primary cause	
2	Secondary (happened after, occurred as a result of)	
3	Unknown	
4	Unrelated to event	
	Measurement (volume in cu cm)	12,13
07	Inflammation	8,9
	Extent	10
1	Focal	
2	Difuse	
08	Laceration (include penetrating lacerations)	8,9
	Extent	10
1	<1.0 cm	
2	1.0-3.0 cm	
3	>3.0 cm	
	Measurement (length in cm)	12,13
09	Neuron Tear (Axonal shear)	8,9
	Extent	10
1		
2		
3		

CEREBRUM (Continued)		Card Columns
10	Petechia	8,9
	Extent	10
1		
2		
3		
11	Swelling (Edema)	8,9
	Extent	10
1	Moderate	
2	Severe	

CORD (CERVICAL)

		Card Columns
LOCATOR A		1-4
0500	Cord (Cervical)	
0501	Dorsal Root	
0502	Gray Matter	
0503	Ventral Root	
0504	White Matter Internal	
0505	White Matter Surface	
LOCATOR B (two may be selected)		5,6
1	Right	
2	Left	
3	Anterior	
4	Posterior	
LOCATOR C (only one can be selected)		7
1	Vertebral Level 1	
2	Vertebral Level 2	
3	Vertebral Level 3	
4	Vertebral Level 4	
5	Vertebral Level 5	
6	Vertebral Level 6	
7	Vertebral Level 7	
INJURY		
01	Compression	8,9
02	Hemorrhage	8,9
03	Herniation	8,9
	Extent	10
1	Mild	
2	Moderate	
3	Severe	
04	Hypoxic Changes (selective necrosis of neurons observed microscopically)	8,9
	Extent	10
1	Moderate	
2	Severe	

CORD (CERVICAL) (Continued)		Card Columns
05	Infarct (tissue necrosis)	8,9
	Status	10
1	Primary cause	
2	Secondary (happened after, occurred as a result of)	
3	Unknown	
4	Unrelated to event	
	Measurement (volume in cu cm)	12,13
06	Inflammation	8,9
07	Laceration	8,9
	Extent	10
1	<25% of cross section	
2	25-50% of cross section	
3	50-75% of cross section	
08	Neuron Tear (Axonal shear)	8,9
	Extent	10
1		
2		
3		

CORD (CERIVICAL) (Continued)		Card Columns
09	Petechia	8,9
	Extent	10
1		
2		
3		
10	Secondary Tract Degeneration	8,9
11	Transection	8,9

DIENCEPHALON

		Card Columns
LOCATOR A		1-4
0600	Diencephalon	
0601	Hypothalamus	
0602	Infundibulum	
0603	Mamillary Bodies	
0604	Optic Chiasm	
0605	Pineal Body	
0606	Subthalamus	
0607	Thalamus	
0608	Petuary	
LOCATOR B (three may be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
INJURY		
01	Compression	8,9
02	Contusion	8,9
	Depth Grades	10
1	Into but not through gray matter	
2	Through gray matter not into white matter	
3	Through gray matter and into white matter	
	Area Grades	11
1	Focal or localized	
2	Moderately extensive	
3	Extensive	
	Measurement (volume in cu cm)	12,13
03	Hemorrhage	8,9
	Extent (max. area any plane)	10
1	<1 sq cm	
2	1-2.5 sq cm	
3	>2.5 sq cm	
	Measurement (volume in cu cm)	12,13

DIENCEPHALON (Continued)		Card Columns
04	Herniation	8,9
	Extent	10
1	Mild	
2	Moderate	
3	Severe (with necrosis)	
05	Hypoxic Changes (selective necrosis of neurons observed microscopically)	8,9
	Extent	10
1	Moderate	
2	Severe	
06	Infarct (tissue necrosis)	8,9
	Status	10
1	Primary Cause	
2	Secondary (happened after, occurred as a result of)	
3	Unknown	
4	Unrelated to Event	
	Measurement (volume in cu cm)	12,13
07	Inflammation	8,9
	Extent	10
1	Focal	
2	Difuse	
08	Laceration (include penetrating lacerations)	8,9
	Extent	10
1	<1.0 cm	
2	1.0-3.0 cm	
3	>3.0 cm	
	Measurement (length in cm)	12,13
09	Petechia	8,9
	Extent	10
1		
2		

DIENCEPHALON (Continued)		Card Columns
	Extent (continued)	10
3		
10	Secondary Tract Degeneration	8,9
11	Swelling (Edema)	8,9
	Extent	10
1	Moderate	
2	Severe	

DISC

		Card Columns
LOCATOR A		1-4
0700	Disc	
LOCATOR B (Only one can be selected)		7
2	Below the second vertebra (C2)	
3	Below the third vertebra (C3)	
4	Below the fourth vertebra (C4)	
5	Below the fifth vertebra (C5)	
6	Below the sixth vertebra (C6)	
7	Below the seventh vertebra (C7)	
INJURY		
01	Extrude Nucleus	8,9
02	Hemorrhage	8,9
03	Tear Annulus	8,9

DURA

		Card Columns
LOCATOR A		1-4
0800	Dura	
0801	Epidural	
0802	Falx Cerebri	
0803	Subarachnoid	
0804	Subdural	
0805	Tentorium	
0806	Tentorium Margin	
LOCATOR B (three can be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
7	Lateral	
8	Bilateral	
9	Medial/Midline	
INJURY		
01	Entrapped Air	8,9
02	Hematoma	8,9
	Extent	10
1	<25 cu cm	
2	25-75 cu cm	
3	>75 cu cm	
	Measurement (volume in cu cm)	12,13
03	Hemorrhage	8,9
	Extent	10
1	Over 1 lobe or less	
2	Less than 2 lobes, more than 1 lobe	
3	Two lobes or more	
04	Herniation	8,9
	Extent	10
1	Mild	
2	Moderate	
3	Severe (with necrosis)	
05	Intradura Hemorrhage (between layers of dura)	8,9

DURA (Continued)		Card Columns
06	Laceration	8,9
	Extent	10
1	<1.0 cm	
2	1.0-3.0 cm	
3	>3.0 cm	
	Measurement (length in cm)	12,13

FACE

		Card Columns
LOCATOR A		1-4
0900	Face	
0901	Cheek	
0902	Chin	
0903	Ear	
0904	Eye	
0905	Forehead	
0906	Lower Lip	
0907	Nose	
0908	Teeth	
0909	Tongue	
0910	Upper Lip	
LOCATOR B (two may be selected)		5,6
1	Right	
2	Left	
3	Superior	
4	Inferior	
5	Medial/Midline	
INJURY		
01	Abrasion	8,9
	Extent	10
1	Surface	
2	Deep	
02	Avulsion	8,9
03	Contusion	8,9
	Extent	10
1	Surface	
2	Deep	
04	Foreign Body Penetration	8,9
	Extent	10
1	Surface	
2	Deep	
05	Incision	8,9
	Extent	10
1	<1.0 cm	
2	1.0-3.0 cm	
3	>3.0 cm	
	Measurement (length in cm)	12,13
06	Hemorrhage	8,9

FACE (Continued)		Card Columns
07	Laceration	8,9
	Extent	10
1	<1.0 cm	
2	1.0-3.0 cm	
3	>3.0 cm	
	Measurement (length in cm)	12,13

LIGAMENTS

		Card Columns
LOCATOR A		1-4
1000	Ligaments	
1001	Atlantoaxialis	
1002	Atlanto Occipital	
1003	Cruciforme	
1004	Flavum	
1005	Interspinous	
1006	Longitudinal	
1007	Stylomandibulare	
1008	Supraspinous	
LOCATOR B (two may be selected)		5,6
1	Right	
2	Left	
3	Superior	
4	Inferior	
INJURY		
01	Tear	8,9

MEDULLA

		Card Columns
LOCATOR A		1-4
1100	Medulla	
1101	Lemniscus	
1102	Medulla Internal	
1103	Medulla Surface	
1104	Olive	
1105	Pyramid	
1106	Pyramid Decussation	
LOCATOR B (three may be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
7	Lateral	
8	Bilateral	
9	Medial/Midline	
INJURY		
01	Compression	
02	Contusion	8,9
	Depth Grades	10
1	Into but not through gray matter	
2	Through gray matter not into white matter	
3	Through gray matter and into white matter	
	Area Grades	11
1	Focal or localized	
2	Moderately extensive	
3	Extensive	
	Measurement (volume in cu cm)	12,13
03	Fat Embolism	
04	Hemorrhage	8,9
	Extent (maximum dimension)	10
1	<5 mm	
2	5-10 mm	
3	>10 mm	
	Measurement (volume in cu cm)	12,13

MEDULLA (Continued)		Card Columns
05	Herniation	8,9
	Extent	10
1	Mild	
2	Moderate	
3	Severe (with necrosis)	
06	Hypoxic Changes (selective necrosis of neurons observed microscopically)	8,9
	Extent	10
1	Moderate	
2	Severe	
07	Infarct (tissue necrosis)	8,9
	Status	10
1	Primary cause	
2	Secondary (happened after, occurred as a result of)	
3	Unknown	
4	Unrelated to event	
	Measurement (volume in cu cm)	12,13
08	Inflammation	8,9
	Extent	10
1	Focal	
2	Difuse	
09	Laceration (include penetrating lacerations)	8,9
	Extent	10
1	<1.0 cm	
2	1.0-3.0 cm	
3	>3.0 cm	
	Measurement (length in cm)	12,13
10	Neuron Tear (Axonal Shear)	8,9
	Extent	10
1		
2		

MEDULLA (Continued)		Card Columns
	Extent (continued)	10
3		
11	Petechia	8,9
	Extent	10
1		
2		
3		
12	Swelling (edema)	8,9
	Extent	10
1	Moderate	
2	Severe	
13	Secondary Tract Degeneration	8,9

MIDBRAIN

		Card Columns
LOCATOR A		1-4
1300	Midbrain	
1301	Crus Cerebri	
1302	Midbrain Surface	
1303	Perforated Substance	
1304	Red Nucleus	
1305	Substantia Nigra	
1306	Tegmentum	
LOCATOR B (three may be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
7	Lateral	
8	Bilateral	
9	Medial/Midline	
INJURY		
01	Compression	8,9
02	Contusion	8,9
	Depth Grades	10
1	Into but not through gray matter	
2	Through gray matter not into white matter	
3	Through gray matter and into white matter	
	Area Grades	11
1	Focal or localized	
2	Moderately extensive	
3	Extensive	
	Measurement (volume in cu cm)	12,13
03	Fat Embolism	
04	Hemorrhage	8,9
	Extent (maximum dimension)	10
1	<5 mm	
2	5-10 mm	
3	>10 mm	
	Measurement (volume in cu cm)	12,13

MIDBRAIN (Continued)		Card Columns
05	Herniation	8,9
	Extent	10
1	Mild	
2	Moderate	
3	Severe (with necrosis)	
06	Hypoxic Changes (selective necrosis of neurons observed microscopically)	8,9
	Extent	10
1	Moderate	
2	Severe	
07	Infarct (tissue necrosis)	8,9
	Status	10
1	Primary cause	
2	Secondary (happened after, occurred as a result of)	
3	Unknown	
4	Unrelated to event	
	Measurement (volume in cu cm)	12,13
08	Inflammation	8,9
	Extent	10
1	Focal	
2	Difuse	
09	Laceration (include penetrating lacerations)	8,9
	Extent	10
1	<1.0 cm	
2	1.0-3.0 cm	
3	>3.0 cm	
	Measurement (length in cm)	12,13
10	Neuron Tear (Axonal Shear)	8,9
	Extent	10
1		
2		

MIDBRAIN (Continued)		Card Columns
	Extent (continued)	10
3		
11	Petechia	8,9
	Extent	10
1		
2		
3		
12	Swelling (edema)	8,9
	Extent	10
1	Moderate	
2	Severe	
13	Secondary Tract Degeneration	8,9

NECK

		Card Columns
LOCATOR A		1-4
1200	Neck	
1201	Cricoid	
1202	Esophagus	
1203	Hyoid Bone	
1204	Larynx	
1205	Pharynx	
1206	Skin	
1207	Thyroid Capsule	
1208	Thyroid Gland	
1209	Trachea	
LOCATOR B (three may be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
7	Lateral	
8	Bilateral	
9	Medial/Midline	
INJURY		
01	Abrasion	8,9
	Extent	10
1	Surface	
2	Deep	
02	Compression	8,9
03	Contusion	8,9
	Extent	10
1	Surface	
2	Deep	
04	Foreign Body Penetration	8,9
	Extent	10
1	Surface	
2	Deep	
05	Fracture	8,9
06	Hematoma	8,9
	Measurement (volume in cu cm)	12,13
07	Hemorrhage	8,9

NECK (Continued)		Card Columns
08	Incision	8,9
	Extent	10
1	<1.0 cm	
2	1.0-3.0 cm	
3	>3.0 cm	
	Measurement (length in cm)	12,13
09	Laceration	8,9
	Extent	10
1	<1.0 cm	
2	1.0-3.0 cm	
3	>3.0 cm	
	Measurement (length in cm)	12,13
10	Obstruction	8,9

NECK MUSCLES

		Card Columns
LOCATOR A		1-4
1400	Neck Muscles	
1401	Carotid Sheaths	
1402	Cervicis	
1403	Intercostal	
1404	Longus Colli	
1405	Scalenus	
1406	Semispinalis Capitis	
1407	Splenius Capitis	
1408	Sternohyoid	
1409	Sternomastoid	
1410	Trapezius	
LOCATOR B (three may be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
INJURY		
01	Hematoma	8,9
	Measurement (max. length in cm)	12,13
02	Hemorrhage	8,9
03	Tear	8,9

NERVES CERVICAL

		Card Columns
LOCATOR A		1-4
1500	Nerves Cervical	
1501	CI	
1502	CII	
1503	CIII	
1504	CIV	
1505	CV	
1506	CVI	
1507	CVII	
1508	CVIII	
LOCATOR B (only one may be selected)		5
1	Right	
2	Left	
INJURY		
01	Avulsion	8,9
02	Contusion	8,9
03	Tear	8,9

NERVES CRANIAL

		Card Columns
LOCATOR A		1-4
1600	Nerves Cranial	
1601	I Olfactory	
1602	II Optic	
1603	III Oculomotor	
1604	IV Trochlear	
1605	V Trigeminal	
1606	VI Obducens	
1607	VII Facial	
1608	VIII Vestibulocochlear	
1609	IX Glossopharyngeal	
1610	X Vagus	
1611	XI Accesory	
1612	XII Hypoglossal	
LOCATOR B (only one may be selected)		5
1	Right	
2	Left	
INJURY		
01	Avulsion	8,9
02	Contusion	8,9
03	Tear	8,9

PONS

		Card Columns
LOCATOR A		1-4
1700	Pons	
1701	Celebellar Peduncle	
1702	Cortical Spinal Tract	
1703	Lemniscus	
1704	Pons Internal	
1705	Pons Surface	
LOCATOR B (three may be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
7	Lateral	
8	Bilateral	
9	Medial/Midline	
INJURY		
01	Compression	8,9
02	Contusion	8,9
	Depth Grades	10
1	Into but not through gray matter	
2	Through gray matter not into white matter	
3	Through gray matter and into white matter	
	Area Grades	11
1	Focal or localized	
2	Moderately extensive	
3	Extensive	
	Measurement (volume in cu cm)	12,13
03	Hemorrhage	8,9
	Extent (maximum dimension)	10
1	<5 mm	
2	5-10 mm	
3	>10 mm	
	Measurement (volume in cu cm)	12,13
04	Herniation	8,9
	Extent	10
1	Mild	
2	Moderate	
3	Severe (with necrosis)	

PONS (Continued)		Card Columns
05	Hypoxic Changes (selective necrosis of neurons observed microscopically)	8,9
	Extent	10
1	Moderate	
2	Severe	
06	Infarct (tissue necrosis)	8,9
	Status	10
1	Primary cause	
2	Secondary (happened after, occurred as a result of)	
3	Unknown	
4	Unrelated to event	
	Measurement (volume in cu cm)	12,13
05	Inflammation	8,9
	Extent	10
1	Focal	
2	Difuse	
08	Laceration (include penetrating lacerations)	8,9
	Extent	10
1	<1.0 cm	
2	1.0-3.0 cm	
3	>3.0 cm	
	Measurement (length in cm)	12,13
09	Neuron Tear (Axonal Shear)	8,9
	Extent	10
1		
2		
3		

PONS (Continued)		Card Columns
10	Petechia	8,9
	Extent	10
1		
2		
3		
11	Swelling (edema)	8,9
	Extent	10
1	Moderate	
2	Severe	
12	Secondary Tract Degeneration	8,9

SCALP

		Card Columns
LOCATOR A		1-4
1800	Scalp	
LOCATOR B (three may be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
7	Lateral	
8	Bilateral	
9	Medial/Midline	
INJURY		
01	Abrasion	8,9
	Extent	10
1	Surface	
2	Deep	
02	Contusion	8,9
	Extent	10
1	Surface	
2	Deep	
03	Foreign Body Penetration	8,9
	Extent	10
1	Surface	
2	Deep	
04	Hematoma	8,9
	Measurement (volume in cu cm)	12,13
05	Incision	8,9
	Extent	10
1	<1.0 cm	
2	1.0-3.0 cm	
3	>3.0 cm	
	Measurement (length in cm)	12,13
06	Laceration	8,9
	Extent	10
1	<1.0 cm	
2	1.0-3.0 cm	
3	>3.0 cm	
	Measurement (length in cm)	12,13

SINUS (DURAL)

		Card Columns
LOCATOR A		1-4
1900	Sinus	
1901	Cavernous	
1902	Petrosal	
1903	Sagittal	
1904	Sphenoparietal	
1905	Strait	
1906	Torculai	
1907	Transverse	
LOCATOR B (three may be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
INJURY		
01	Tear	8,9
02	Thrombosis	8,9
03	Inflammation	8,9

SKULL BONES

		Card Columns
LOCATOR A		1-4
2000	Skull Bones	
2001	Base	
2002	Face	
2003	Mandible	
2004	Vault	
LOCATOR B (three may be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
7	Lateral	
8	Bilateral	
9	Medial/Midline	
INJURY		
01	Fracture Basal	8,9
	Extent	10
1	Without CSF leak	
2	With CSF leak	
02	Fracture Depressed Comminuted Closed	8,9
	Extent	10
1	<0.5 cm	
2	0.5-1.0 cm	
3	>1.0 cm	
03	Fracture Depressed Comminuted Open	8,9
	Extent	10
1	<0.5 cm	
2	0.5-1.0 cm	
3	>1.0 cm	
04	Fracture Linear Closed (sum lengths if more than one in a single region)	8,9
	Extent	10
1	<10 cm	
2	10-20 cm	
3	>20 cm	
	Measurement (length in cm)	12,13

SKULL BONES (Continued)		Card Columns
05	Fracture Linear Open (sum lengths if more than one in a single region)	8,9
	Extent	10
1	<10 cm	
2	10-20 cm	
3	>20 cm	
	Measurement (length in cm)	12,13
06	Fracture Suture Diastasis	8,9
	Extent	10
1	<10 cm	
2	10-20 cm	
3	>20 cm	
	Measurement (length in cm)	12,13

VEINS

		Card Columns
LOCATOR A		1-4
2100	Veins	
2101	Anastomotic	
2102	Basal	
2103	Bridging	
2104	Cerebral	
2105	External Jugular	
2106	Internal Cerebral	
2107	Internal Jugular	
2108	Superficial Cordical	
LOCATOR B (three may be selected)		5-7
1	Right	
2	Left	
3	Anterior	
4	Posterior	
5	Superior	
6	Inferior	
INJURY		
01	Tear	8,9
02	Thrombosis	8,9

VENTRICULAR SYSTEM

		Card Columns
LOCATOR A		1-4
2200	Ventricular System	
2201	Cerebral Aqueduct	
2202	Choroid Plexus	
2203	CSF	
2204	Fourth Ventricle	
2205	Lateral Ventricle	
2206	Third Ventricle	
LOCATOR B (only one may be selected)		5
1	Right	
2	Left	
INJURY		
01	Compressed	8,9
	Extent	10
1	Moderate	
2	Severe	
02	Enlargement	8,9
	Extent	10
1	Moderate	
2	Severe	
03	Entrapped Air	8,9
04	Hematoma	8,9
	Extent	10
1	<50%	
2	50% or more	
3	Two ventricles filled	
05	Hemorrhage (surface)	8,9
06	Ventricular Shift Down	8,9
	Extent	10
1	<0.5 cm	
2	0.5-1.0 cm	
3	>1.0 cm	
07	Ventricular Shift Left	8,9
	Extent	10
1	<0.5 cm	
2	0.5-1.0 cm	
3	>1.0 cm	

VENTRICULAR SYSTEM (Continued)		Card Columns
08	Ventricular Shift Right	8,9
	Extent	10
1	<0.5 cm	
2	0.5-1.0 cm	
3	>1.0 cm	
09	Ventricular Shift Up	8,9
	Extent	10
1	<0.5 cm	
2	0.5-1.0 cm	
3	>1.0 cm	
10	Ventriculitis	8,9

VERTEBRA

		Card Columns
LOCATOR A		1-4
2300	Vertebra	
2301	Arch	
2302	Articular Process	
2303	Bodies	
2304	Dens	
2305	Laminae	
2306	Mass (Lateral)	
2307	Pedicle	
2308	Spinous Process	
2309	Spondylosis	
2310	Transverse Process	
LOCATOR B (two may be selected)		5,6
1	Right	
2	Left	
3	Anterior	
4	Posterior	
LOCATOR C		7
1	First cervical vertebra	
2	Second cervical vertebra	
3	Third cervical vertebra	
4	Fourth cervical vertebra	
5	Fifth cervical vertebra	
6	Sixth cervical vertebra	
7	Seventh cervical vertebra	
INJURY		
01	Fracture	8,9
02	Subluxation	8,9
	Extent	10
1	<0.5 cm	
2	0.5-1.0 cm	
3	>1.0 cm	